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The New Private Equity

Corporate Raider,
Main Street Invader,
Monopoly Builder,
Shadow Owner

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Abstract

Private equity investment funds command increasing wealth and reach in the US economy, yet the scope and role of private equity (PE) remain ambiguous. This paper assembles systematic data to describe PE's shifting strategies and ownership patterns in the US since the 1980s. We theorize four interconnected roles—"corporate raider," "Main Street invader," "monopoly builder," and "shadow owner." We then document the changing balance among them. We find a shift away from PE's traditional role as corporate raiders that specialize in restructuring publicly traded firms. Rather, PE investors increasingly agglomerate and rationalize already private "Main Street" companies. PE rarely takes these firms public, instead selling them off publicly traded incumbents. PE-owned companies also increasingly stay private through longer hold times and sales to other PE funds. PE thus spreads the logic of shareholder value maximization to ever more corners of the economy outside the regulatory and reporting requirements of publicly traded companies.



Introduction: The Four Roles of the New Private Equity

Private equity investment firms have played key roles in several recent transformations of the US economy, including corporate restructuring, the rise of shareholder value ideology, deunionization, and the growth of billionaire wealth ([Shleifer and Summers 1988](#); [Kaplan and Rauh 2010](#); [Appelbaum and Batt 2014](#); [Davis 2016](#); [Saez and Zucman 2022](#)). Private equity firms manage funds that invest in illiquid assets, namely ownership stakes in private businesses. However, because businesses under private equity ownership are exempt from many reporting requirements that apply to publicly traded companies, the full shape of private equity's expanding role has remained opaque ([Ballou 2023](#); [Coates 2023](#)). Without standardized, publicly available data, analysts have struggled to measure the varieties or even the overall extent of private equity ownership and its influence in the real economy.

This paper assembles comprehensive data from several proprietary sources to provide the most detailed picture to date of the shifting organization, scope, strategies, and roles of private equity in the US economy since the 1980s. Our goal is to build on the primarily case-study and industry-level literature to develop a systematic synthetic account of private equity's place in American capitalism.

We propose that private equity has increased its controlling stakes in nonfinancial firms across the US economy by assuming four typical modalities or roles that are not mutually exclusive: (1) corporate raider, (2) Main Street invader, (3) monopoly builder, and (4) shadow owner. Private equity is best known for the corporate raiding of public corporations that predominated early in its history. But the new private equity expanded through the growth of all four of its roles in conjunction and combination with one another. Private equity has thus become a nonbank financial intermediary for outside investors that exercises ownership, allocates capital, and accumulates wealth across a much larger swath of the economy than previously recognized ([Lin and Pernell 2026](#)). With fee structures that capture large shares of returns from this growing portion of the economy, private equity managers have become one of the biggest blocs of Americans with the highest incomes and wealth ([Kaplan and Rauh 2010](#); [Eaton and Gibadullina 2025](#)).

To advance our argument, we assemble measures of private equity's ownership reach, buyout volumes, and investment exit transactions. This reveals, first, that private equity (PE) and venture capital-controlled portfolio companies grew from negligible total net asset values (NAV) in the early 1990s to a substantial share of the economy by the 2020s. We estimate that PE and venture capital (VC) portfolio company values (excluding dry powder) comprised between 9 and 15 percent of all US nonfinancial (including noncorporate) business net worth in 2023. Through its growth, private equity carries the logic of shareholder value maximization beyond the domain of publicly traded corporations (which comprise about 25 percent of total nonfinancial



business net worth) and into the domain of privately owned corporations, which make up around 35 percent of nonfinancial business net worth.¹

The expansion of private equity ownership, however, does not amount to an “eclipse of the public corporation,” as predicted by Jensen (1989) and others ([Davis 2016](#)). We show that rather than checking or displacing public corporations, as private equity has grown, it has complemented public corporate consolidation as private equity’s chief roles shifted from corporate raider to Main Street invader, monopoly builder, and shadow owner. We document this shift using author-augmented data from PitchBook on 56,974 buyouts and 21,363 exits from 1985 to 2019 to estimate the distribution of buyout and exit types associated with these different roles over time.²

Private equity is often misperceived as a check against corporate concentration. This may flow from lingering memories of hostile takeovers by corporate raiders in the 1980s. We find, however, that the share of leveraged buyout (LBO) deal dollars involving buyouts of public corporations fell from more than 70 percent in the 1980s to less than 50 percent (much less, in some of our estimates) in almost all years since the early 1990s. With the number of publicly traded buyout targets dwindling, private equity has increasingly engaged in buyouts of already-private firms. Through these private LBOs, private equity invaded Main Street, often acquiring locally owned enterprises in sectors with high proportions of nonprofit entities, municipal ownership, partnerships, and closely held family businesses. Yet the dollar value of the shift away from corporate raiding has been underreported in private equity deal databases because deal values for private buyouts are infrequently reported.

In shifting to Main Street invading, private equity departed from the “slicing-and-dicing” strategy of corporate raiders, which reorganized, downsized, and resold leaner firms or their divisions. In contrast, we find that buyouts of already private firms are more often oriented toward strategies of agglomeration (“monopoly building”), and long-term, ongoing private ownership that exploits the regulatory opacity of nonpublic forms (“shadow ownership”) ([Leuz and Wysocki 2016](#); [Ewens and Farre-Mensa 2020](#); [Coates 2023](#)). We do not apply the term monopoly here in a strict technical sense. Instead, our claim is that private equity as a monopoly builder increasingly grows its portfolio firms by accreting their competition rather than making them leaner. This monopoly building involves add-on buyouts, through which private equity acquires and folds competitors into its portfolio companies. Add-ons grew from negligible shares to more than 40 percent of buyout dollars in recent years. Exit transaction analyses show that private equity also contributes indirectly to corporate consolidation through merger-and-acquisition (M&A) sales of portfolio companies to publicly traded incumbents. Rather than seeding fresh competitors via initial public offerings (IPOs),

¹ The remainder of business net worth is held under noncorporate private ownership that is common to millions of small businesses.

² The last such estimates were published more than 15 years ago ([Kaplan and Strömberg 2009](#)).



private equity increasingly provides building blocks that help publicly traded firms further consolidate their markets ([Kwon et al. 2024](#)).

Showing private equity's increasing shadow ownership role, we find that private equity funds' average duration for owning a given company has increased steadily over the last 40 years, suggesting that this is a long-term trend rather than solely a result of recent obstacles to profitable exits. Shadow ownership is also apparent in the growth of secondary buyouts in which buyout funds acquire companies from other buyout funds, thereby recycling companies within the private equity segment over extended periods or even indefinitely. While recent business commentary has framed these trends as evidence of funds' inability to sell overvalued assets, we show how increased secondary buyouts and extended hold durations are longer-term trends that have developed across business cycles. We argue that they reflect a larger shift, in which private equity's logic of ownership increasingly hinges on the ability to take advantage of regulatory and reporting exemptions for private companies.

The following sections assess our arguments and their empirical implications. First, we offer some basic background on corporate ownership, private equity, and the sector's growing economic reach over time. We then elaborate the four ideal-typical roles and develop a historically grounded argument about how the balance among these may have shifted since the 1980s. We then test key implications of this argument using buyout and exit deal data. We conclude by discussing how private equity's rise may augur a new "dark mode" for shareholder value capitalism that complements the hegemony of the largest public corporations.

Corporate Ownership and the Expansion of Private Equity

The Old Private Equity

For our purposes, private equity (PE) can be broadly understood to encompass investment funds that raise money from limited partners, such as wealthy individuals or pension funds, to invest in illiquid private (that is, not publicly traded) assets. Facilitated by successive waves of financial deregulation since the 1980s, PE has increasingly displaced banks as financial intermediaries for private firms ([Mizruchi 2013](#); [Lin and Pernell 2026](#)). Unlike their banking predecessors, however, private equity's intermediation typically involves active ownership and control. Although PE investments can include minority venture capital holdings in start-ups, real estate, infrastructure, and non-equity private debt, the dominant form of private equity investment remains controlling equity stakes of enterprises in the "real" economy.



The term “private equity” is relatively new. Before rebranding as private equity in the early 1990s, firms in the industry were known as leveraged buyout (LBO) funds. The term referred to how LBO funds used high-cost debt to buy businesses. Growth of this previously rare business model was initially enabled by financial deregulation in the early 1980s, which allowed new forms of high-cost borrowing such as junk bonds. Leverage allowed LBO funds to acquire businesses worth far more than the equity capital they managed for investors ([Axelson et al. 2013](#)). LBO funds then used financial engineering, restructuring, and management changes to quickly increase the price at which the business or portions of the business could be resold, because of increased present or expected future profitability (Davis and Stout 1992). LBO investors subsequently exited at a profit, either through an IPO or by selling the business or its component parts to other companies or investors—ideally before the bill on the acquisition debt came due. Before the 1980s, this business model was rare. By using leverage, LBO fund managers could generate larger returns than other types of investment managers ([Kaplan and Rauh 2010](#)). The strategy came with high short-term risk from debt obligations if LBO managers failed to resell the buyout target profitably. LBO managers thus used novel legal arrangements to shield their investment firms from these liabilities, often foisting the debt obligations onto the portfolio firm itself ([Appelbaum and Batt 2014](#); see also [Ballou 2023](#)).

The promise of higher returns lured a migration of financiers and capital into the LBO industry throughout the 1980s. Fund managers left traditional investment banks to found new LBO firms like Apollo, Blackstone, and KKR. These remain the three largest private equity firms in the US by assets under management. Their founders are still among the richest men in America.³ As private equity tended to deliver higher returns than public equity investments did, most private equity managers claimed for themselves a 20 percent share of returns from their investors’ capital—a more lucrative fee structure than is typical in investment banking or other earlier forms of active fund management. Meanwhile, institutional investors—college endowments, pension funds, and eventually sovereign wealth funds—fueled the industry’s growth by investing an increasing share of their capital in LBO funds over the subsequent decades ([Eaton 2022a](#)).

The Expanding Reach of Private Equity in the Nonfinancial Economy

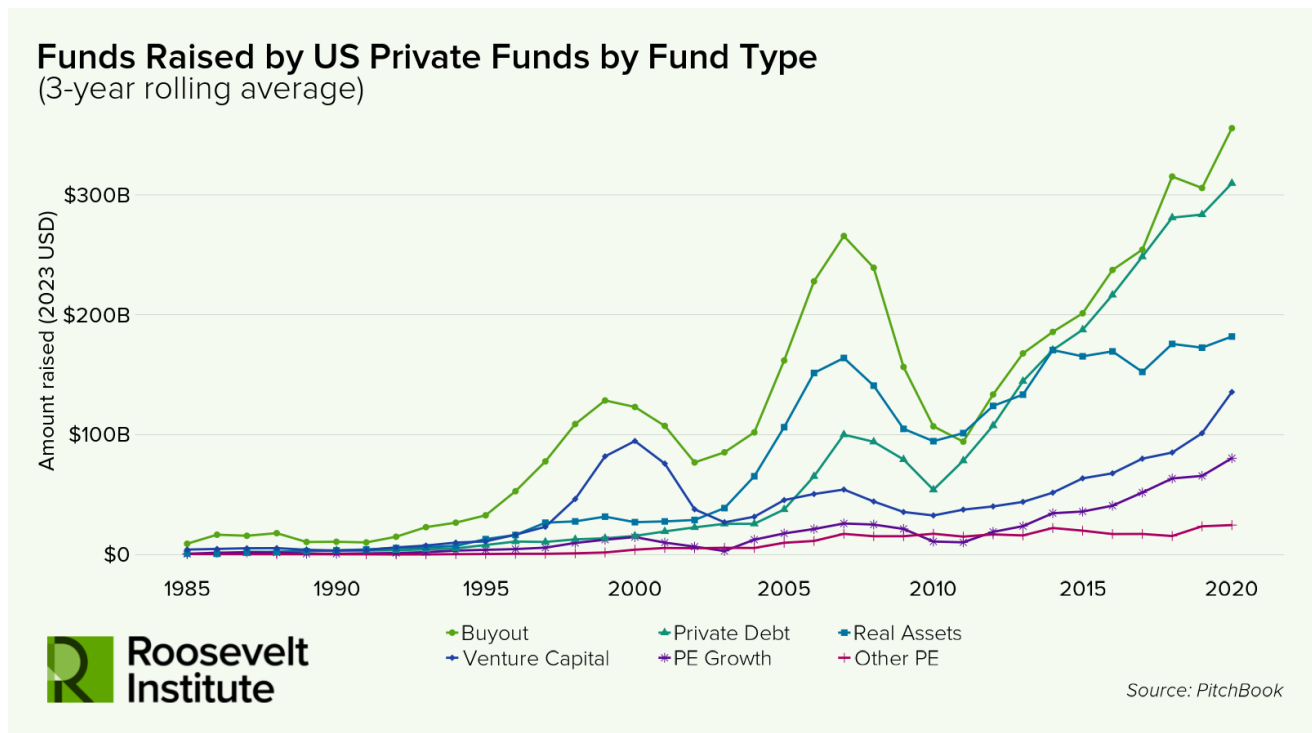
The reach of private equity has remained elusive because “private equity funds are intentionally structured so as not to trigger disclosure laws” ([Coates 2023](#), 52). We illustrate this growth first with Figure 1, which plots a three-year rolling average of total

³ Private equity managers made up 9 percent of the Forbes 400 billionaires in 2017 ([Eaton and Gibadullina 2025](#)) and 9 percent of US residents with incomes in the top 0.0001 percent in 2004 ([Kaplan and Rauh 2010](#)).



capital raised by US private funds, disaggregating by fund type, by close year from 1985 to 2020 in 2023 constant dollars. While some private fund types are outside of the private equity umbrella, Appendix Table A1 shows that all Figure 1 fund types, including real asset and debt funds, are within this umbrella, as they participate in leveraged buyouts or use other forms of transactions to take ownership stakes in PE and VC portfolio companies. Total funds raised by all fund types initially declined slightly in the mid-1980s from about \$20 billion annually in the mid-1980s before multiple waves of growth starting in the mid-1990s. Total private funds raised surpassed \$1 trillion in the 2020 close year. VC funds, which typically take noncontrolling ownership stakes, made up \$135 billion of the total raised that year.

Figure 1

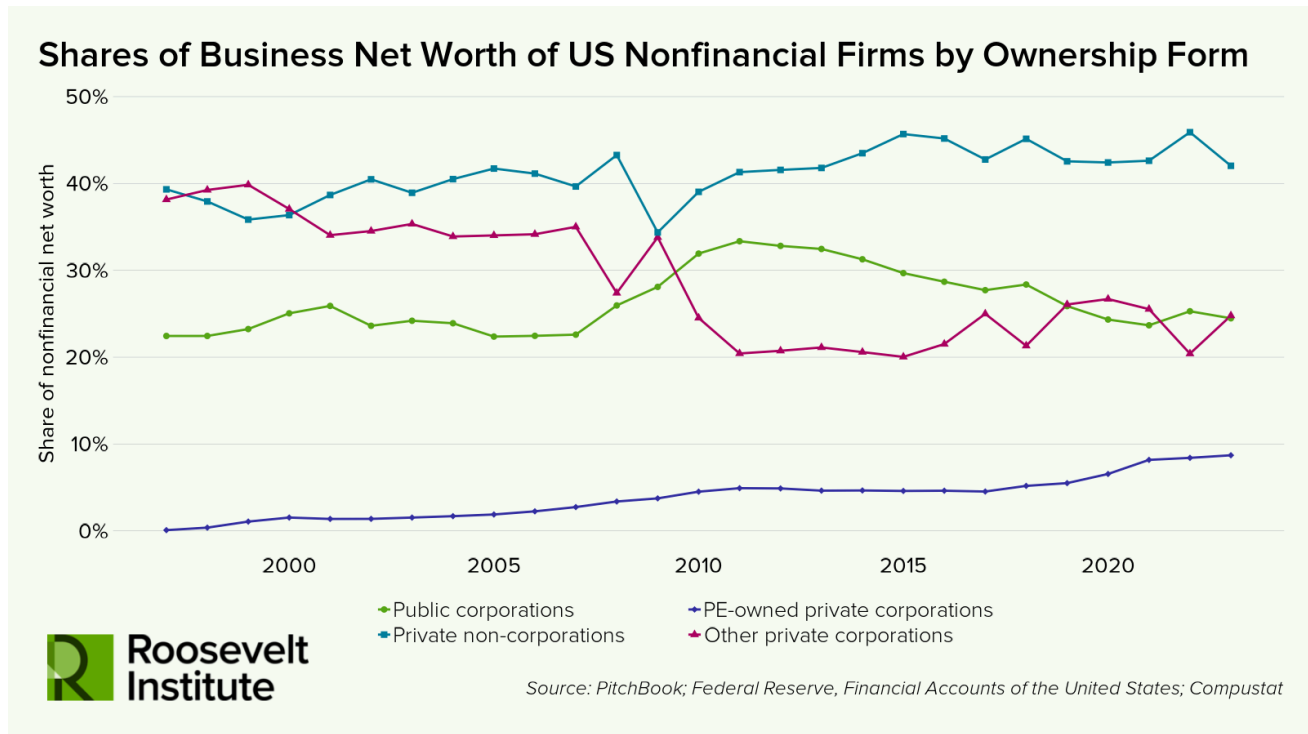


Note: Data are from PitchBook for US-based funds with a known closing date. Rolling average is calculated as the mean of dollars raised per year of the year before, the current year, and the year after. Dollars raised are calculated by totaling PitchBook fund sizes for all funds attributed to the year in which the fund closed its commitment window. Real assets funds include real estate, infrastructure, and natural resource funds. Other PE funds include diversified PE and restructuring/turnaround funds. Hedge funds and funds of funds are excluded.

Figure 2 shows how PE and VC funds attain ownership stakes in the economy by investing the funds they raise. Using PitchBook data, we estimate that the net asset value of PE- and VC-owned portfolio firms grew as a share of the book value of all US nonfinancial business net worth from below 1 percent in 1997 to 9 percent in 2023. Using more comprehensive SEC data available only for more recent years, we estimate that PE and VC portfolio firm investment values have grown closer to 15 percent as a

share of all nonfinancial business net worth (see A3). In Figure 2, we report PE and VC investment asset values together because of the similarity and fluidity in PE and VC fund ownership of private portfolio firms, as well as the difficulty of distinguishing them in SEC reporting data (see the appendix for details).⁴

Figure 2



Note: Measures use PitchBook's Investments (NAV) of US-based PE and VC funds, the Federal Reserve's nonfinancial corporate net worth at historical cost (Table B.103), the Federal Reserve's nonfinancial noncorporate net worth (Table B.104), and Compustat's (*Fundamentals Annual*) stockholders' equity for US publicly traded firms (Variable SEQ).

Figure 2 further shows that publicly owned corporations have returned to around 25 percent of all nonfinancial business net worth following some growth as a share of the economy in the aftermath of the Great Recession. Figure 2 also shows that the value of private corporations other than those owned by PE and VC funds fell from around 35 percent before the Great Recession to between 20 and 25 percent of business net worth in the years since. Over the 25 years after 1997, PE and VC portfolio firms thereby primarily expanded their share of the economy at the expense of private corporations without PE or VC ownership. Throughout the period, between 40 and 45 percent of business net worth remained held under noncorporate private ownership that is common to millions of small businesses.

⁴ The appendix provides additional detail on differences between PitchBook and SEC investment value measures. It also reports separate estimates of PE versus VC investment values.

But what does private equity do to the larger economy as a buyer and owner of different types of nonfinancial businesses? And how has this evolved as private equity has expanded? To help answer these questions, we delineate four prototypical roles played by private equity: corporate raiders, Main Street invaders, monopoly builders, and shadow owners. We focus on how private equity firms assume these roles through leveraged buyouts, as these are the primary ways that private equity gains controlling ownership stakes in portfolio companies.

Eclipse of the Corporate Raiders

Before they were rebranded as private equity in the early 1990s, leveraged buyout firms were commonly regarded as corporate raiders for hostile takeovers of publicly traded corporations. Prominent 1980s corporate raiders included Carl Icahn, Ronald Perelman, T. Boone Pickens, and the Kohlberg Kravis Roberts (KKR) buyout firm (Jensen 1989; [Davis and Stout 1992](#); [Davis 2009](#); [Appelbaum and Batt 2014](#)). Their notable hostile takeovers included Icahn's acquisition of TWA, Perelman's takeover of Revlon, Pickens' attempted bids for Gulf Oil and Phillips Petroleum, and KKR's contested buyout of RJR Nabisco. Corporate raiding has remained the dominant lens through which media, economists, and social scientists think about private equity's role in corporate organization and the economy. This frame implies that the growth of private equity would break up inefficient corporate conglomerates, creating more vibrant markets in which corporations compete in areas of their core competence (see, for example, [Jensen 1988](#)).

In contrast to this image, corporate concentration has increased, in forms both familiar and new. Figure 2 showed that the publicly traded share of nonfinancial business net worth has remained steady over the last three decades at around 25 percent. At the same time, the total count of corporations traded on major stock exchanges declined from over 6,000 in 1995 to just over 4,000 by 2020 (see Appendix Figure A2). This decline in total public corporations reflects an increase in corporate size and concentration ([Kwon et al. 2024](#)). Because private corporate financial reporting is relatively opaque, it is harder to assess concentration among private firms.

How can we square the enduring dominance of large, publicly traded firms with private equity's role as a corporate raider? We reason that concentrated public corporations persist alongside private equity growth because corporate raiding is just one element in a larger private equity repertoire. Private equity's full repertoire of financial intermediation can accommodate or even help build larger publicly traded firms. A rereading of Jensen, the most prominent theorist of private equity, reveals that he believed corporate raiding would only be an initial role for private equity because companies would stay private, leaving fewer and fewer public companies left to take private. In his 1989 essay "Eclipse of the Public Corporation," Jensen argued, "By resolving the central weakness of the public corporation—the conflict between owners



and managers over the control and use of corporate resources—these new organizations are making remarkable gains in operating efficiency, employee productivity, and shareholder value.” As a result, Jensen reasoned: “LBO sponsors do not have to take their companies public for them to succeed. [...] Huge efficiency gains and high-return asset sales produce enough cash to pay down debt and allow LBOs to generate handsome returns as going concerns.” Citing a then-forthcoming study, Jensen noted that only 5 percent of the more than 1,300 LBOs between 1981 and 1986 were subsequently taken public ([Muscarella and Vetsuypens 1990](#)).

Jensen’s argument suggests that potential corporate raiding targets would eventually be driven into extinction as publicly traded conglomerates were taken private, broken up, and kept private. Others have continued to echo Jensen, with forecasts of “the collapse of the traditional American corporation” ([Davis 2013](#)). These predictions have proved only partly right. Publicly traded ownership has remained steady as a share of the economy, with concentration of public firms only continuing to grow among the largest corporations.

But corporate raiding targets have declined as the remaining public corporations adopted their own shareholder value-oriented reforms, in part to avoid hostile takeovers ([Davis and Stout 1992](#); [Holmstrom and Kaplan 2001](#)). To prioritize shareholder value, public companies adopted new business strategies of de-unionization, cost cutting, automation, computerization, stock buybacks, and financial engineering ([Zorn et al. 2005](#); [Fligstein and Shin 2007](#); [Dobbin and Jung 2010](#); [Jung 2015](#)). These reforms were also spurred by activist investors like pension funds and emergent asset managers, whom Jensen also praised. Less to Jensen’s liking, public conglomerates also undertook internal reforms to shield themselves from shareholder pressures ([Useem 1993](#)).

Nevertheless, a paradox of the corporate raiding model is that its very success undermined its continued viability. LBOs could arbitrage the previously “unsatisfactory” degree of shareholder value orientation in America’s corporate sector only once. By the late 1990s, there were fewer remaining targets; the exploitable rents of the postwar bureaucratic firm (such as union wages and pension benefits) had been destroyed, and the remaining public corporations were larger and enjoying massive equity valuations ([Holmstrom and Kaplan 2001](#)). Contra Jensen, it was the corporate raider, not the public corporation, that was eclipsed in the rise of private equity.

In light of this argument, we expect to find a relative decline of public-to-PE buyouts as a share of all buyout activity. Likewise, we expect to find a decline in private equity exits from their investments through IPOs. In this way, we expect that private equity decreasingly breaks up corporate conglomerates or creates new publicly traded challengers to large existing firms.



The Rise of Main Street Invaders

As targets for corporate raiding dwindled, private equity managers shifted tactics. As we saw in Figure 2, unlisted private businesses comprise most of the US economy. Accordingly, we expect that private equity gravitated increasingly to private-to-PE buyouts of privately held firms, or Main Street invading.

We reason that private equity managers came to see opportunities in privately held firms because they lacked public firms' access to capital and the shareholder value orientation of public firms. Privately held ownership predominates among smaller businesses and across large swaths of the US economy ([Ang 1992](#)). Ranging from sole proprietorships and family firms to professional partnerships, private corporations, and nonprofit enterprises, privately held ownership can organize business around non-shareholder logics and relationships that deviate from Jensen's emphasis in "Eclipse" (1989). Capitalized by commercial lending and small investors, these firms' embeddedness in families ([Schulze et al. 2001](#)), communities (Valdez 2011), and professions ([Greenwood et al. 2007](#)) may sustain them through relationships of reciprocity to customers, employees, and other stakeholders besides shareholders ([Uzzi 1996](#); [Schneiberg, Goldstein, and Kraatz 2023](#)).

This legacy of insulation from shareholder value pressures makes privately held firms, and the industries in which they have predominated, potentially ripe targets for private equity acquisition. Both the press and social scientists have increasingly documented private equity acquisitions in sectors where privately held ownership has long dominated. Examples include accounting ([Doan et al. 2025](#)), education ([Eaton et al. 2020](#)), healthcare ([Bruch et al. 2020](#); [Eliason et al. 2020](#)), childcare ([Simon et al. 2024](#)), housing ([Raymond et al. 2018](#)), and hospitality ([Bernstein and Sheen 2016](#); [Spaenjers and Steiner 2024](#))—large industries that rank in the bottom 20 percent of industries for the share of economic output from publicly traded corporations.⁵

Research on private-to-PE buyouts is surprisingly limited. Kaplan and Strömberg ([2009](#)) found that private-to-PE buyouts grew to make up around half of the dollar volume of global buyout deals in the 1990s, but they did not break US deal volume down by deal type. More recent research shows that private-to-PE buyouts tend to yield gains to employment, while public-to-PE buyouts yield losses ([Davis et al. 2025](#)), and operating performance improves more in private-to-PE than public-to-PE buyouts ([Verbouw et al. 2021](#)). These findings on private-to-PE buyout returns fit with our contention that private equity likely shifted to Main Street invading as the shareholder-value movement foreclosed the potential gains to be made through corporate raiding tactics.

⁵ Authors' estimates using Compustat data.



Main Street invading can also occur indirectly through PE buyouts of VC backed technology companies whose business models aim to disrupt existing Main Street markets ([Khan 2017](#); [Hammer et al. 2022](#); [Bracy 2025](#)). This VC-to-PE variant of Main Street invading is especially prevalent in the healthcare sector. For example, New Mountain Capital employed this strategy in creating Signify Health, an in-home care company ([Torrence 2025](#)).

To the extent that PE ownership has reoriented toward Main Street invading, we would expect to see a declining share of public-to-PE buyout deals, and a concomitant increase in private-to-PE buyouts. Buyouts of such firms can transform the Main Street economy by spreading the logic and dictates of shareholder value management into these previously untapped sectors.

The New Monopoly Builders

Private equity can employ Main Street invading in conjunction with another principal role: monopoly building. Monopoly building is an inversion of the corporate raiding role. Rather than buying and breaking up inefficient conglomerates, monopoly building drives up shareholder value through agglomeration and market capture. This is an old strategy ([Fligstein 2001](#)), aptly summed up by venture capitalist Peter Thiel in his essay “Competition Is for Losers” ([2014](#)). We argue that private equity increasingly adopted monopoly-building strategies as it turned toward more fractured Main Street markets and as opportunities dwindled for creating shareholder value through firm-level tactics of management efficiency enhancement, de-unionization, or technology. In some respects, this market capture strategy is a return to the central role played by private equity’s investment banking predecessors prior to the adoption of US antitrust law and New Deal financial regulations (Chernow 1990).

Private equity investors use the terms “roll-ups” and “buy-and-build” for two variants of monopoly-building strategies. Roll-ups involve buying multiple small firms to roll them up into larger firms with greater market power. Private equity has applied this strategy extensively in the US for-profit college sector ([Eaton et al. 2020](#); [Goldstein and Eaton 2021](#)) and multiple healthcare industries ([Bruch et al. 2020](#); [Abdelhadi et al. 2024](#); [Gupta et al. 2024](#); [La Forgia et al. 2022](#)). In both industries, prices and quality have been shown to have subsequently worsened for consumers.

Buy-and-build strategies involve acquiring a platform company that investors then expand through follow-on acquisitions. This approach enables investors to consolidate a sector by leveraging the platform’s potential for market diversification and footprint expansion in an industry ([Smit 2001](#); [Hammer et al. 2022](#)). Ideal platform targets possess attributes that facilitate rapid scaling, including through roll-ups ([Hammer et al. 2022](#)). One survey of private equity managers in 2011 found that follow-on acquisitions were already an important strategy for 50 percent of buyout deals, outranked only by



overlapping strategies to “increase revenue or demand factors” and “improve incentives” ([Gompers et al. 2016](#)).

Private equity’s financing tools for roll-up and buy-and-build monopoly building are known as add-on buyouts. With add-on buyouts, the private equity firm may borrow against both a platform company and target company’s balance sheets to finance acquisitions. We are unaware of any studies that systematically track the prevalence of add-ons relative to other forms of buyouts since private equity’s rise in the 1980s. A turn to private equity add-on buyouts parallels larger trends of increased corporate market power in the US (De Loecker, Eeckhout, and Unger 2020). Add-ons mostly involve horizontal deals that consolidate industry market power (see MacArthur 2018, 31–36; [Hearn et al. 2022](#); [Organisation for Economic Co-operation and Development 2023](#)), but they can also involve vertical integration ([Bansraj and Smit 2025](#)). In particular, add-on buyouts have been shown to yield higher returns through increased scale and through future buyers’ willingness to pay more to acquire large firms over small firms ([Hammer et al. 2022](#); [Bansraj and Smit 2025](#)). Add-on buyouts can also be employed to eliminate competitors ([Cunningham, Ederer, and Ma 2021](#); [Federal Trade Commission 2025](#)).

As with the Main Street invading role, the turn to monopoly-building tactics has also been abetted by regulatory shifts. While financial deregulation is widely understood to have enabled the rise of private equity, few have appreciated how the erosion of antitrust regulations has aided private equity’s continued expansion. Ballou ([2023](#)) has argued that “no one benefited from this decline of antitrust more than the private equity industry, particularly in health care.” This began with the 1982 decision by the Reagan Justice Department to raise the concentration threshold for challenging mergers. According to Ballou, the revised guidelines “treated a vast new swath of mergers as presumptively procompetitive” (2023, 137). Congressional legislation in 2000 further promoted monopoly building by revising the HSR Antitrust Improvements Act to increase the threshold for the size of mergers that must be reported to the Federal Trade Commission (FTC) ([Wollmann 2019](#); [Hearn et al. 2022](#)). The threshold was raised from \$15 million to \$50 million and indexed to inflation. This allowed private equity to conduct add-on buyouts below \$50 million in value without reporting them to the FTC. Moreover, add-on buyouts did not need to be reported even if serial acquisitions of multiple businesses totaled well over \$50 million in value—as long as no single acquisition was valued above \$50 million in 2000 dollars. For example, for-profit college and medical add-on buyouts were rarely if ever reported to the FTC even when they were employed as roll-up strategies to create billion-dollar firms like Corinthian Colleges, the for-profit college chain EDMC, or the hospital staffing firm Envision Healthcare ([Goldstein and Eaton 2021](#); [Hearn et al. 2022](#)).

As the relaxing of antitrust opened the door for expanded monopoly building by private equity, we expect that add-on buyouts have grown as a share of both private equity’s



broader buyout activity and of all US merger activity. The growing monopoly-building role of private equity also likely extends beyond buyouts. We expect that private equity increasingly exits investments through M&A sales to other firms. For example, New Mountain Capital eventually exited Signify Health, its home healthcare investment, by selling the firm to pharmacy giant CVS. In this way, private equity can build monopolies both under its own privately owned portfolio companies using roll-up or buy-and-build strategies, as well as by supplying components for larger corporate M&A acquisitions.

Shadow Owners: Rent Seeking or Jensen's Utopia?

So far, we have suggested that a key feature of private equity portfolio firms is their ability to avoid much of the regulatory and stakeholder scrutiny and constraints faced by publicly traded firms. Historically, publicly listed firms traded the costs of disclosures and regulatory oversight for access to public equity and credit that exceeded the capital typically available to private companies. Private equity, however, has built structures that allow comparable access to capital from wealthy individuals, pension funds, and other institutional investors ([Lin and Pernell 2026](#)) as shadow owners exempted from the reporting and stakeholder accountability burdens of public ownership.

As such, we suggest that exploiting the relative lack of transparency afforded by private ownership has increasingly become integral to private equity's investment strategies, rather than an incidental consequence of assuming corporate control to restructure a business. Keeping portfolio firms private for longer allows private equity to construct shareholder-value arrangements while benefiting from reduced securities-law compliance and disclosure requirements, limited public visibility, and insulation from public-market governance and reputational pressures ([Davis 2016](#); [de Fontenay 2017](#)). Longer-term building of portfolio firms in “dark mode” ([Palladino 2026](#)) may also be necessary for positioning firms to generate rents through market capture or public subsidy capture ([Lindsey and Teles 2017](#)). We expect private equity will still take firms public when their market power or public market enthusiasm makes it possible to sell at a higher premium, but this path is no longer the only or even predominant outcome for attaining returns. Thus, we expect buyout funds will hold portfolio firms for increasingly longer periods. And upon exit, funds will increasingly sell portfolio assets to other privately held competitors and other private equity investors.

As with the other three roles, private equity shadow ownership—the long-term private holding of firms with minimal public disclosures—has long been theoretically debated but has not been well studied empirically. Indeed, this role was prefigured in Jensen's adulatory account of private equity. From his perspective, permanent private ownership by private equity not only solves the managerial agency costs by collapsing the manager and owner roles but also makes public financial disclosures superfluous since there are no external investors who need to be informed.



In contrast to Jensen’s narrowly investor-focused perspective, we suggest that private equity’s growing embrace of permanent private shadow ownership derives less from the desire to overcome managerial agency costs and more from how the veil of shadow ownership obscures firms’ activities from workers, consumers, communities, regulators, and watchdog groups. These stakeholders and their organizations actively review public corporations’ SEC filings and attend shareholder conference calls and annual meetings. The information transmitted through these reports can inform union negotiations, community advocacy, consumer regulatory enforcement (including antitrust), litigation, academic research, movement mobilization, shareholder activism, and legislation serving common interests ([Appelbaum and Batt 2014](#)). Under private equity shadow ownership, portfolio companies can operate without such scrutiny.

More recently, Coates has elaborated the centrality of regulatory avoidance to private equity ownership. He writes: “Private equity funds are intentionally structured so as not to trigger disclosure laws. The private equity industry helped shape those laws, with lobbying and political influence. Once a private equity fund acquires control of a previously publicly traded business, the business goes ‘dark’” ([2023](#), 52), no longer subject to annual (10-K), quarterly (10-Q), and event-based financial report filings with the SEC.⁶

Much like the turn to monopoly building, private equity’s shadow ownership and regulatory avoidance function was facilitated by policy ([Coates 2023](#)). Starting in 1980, congressional legislation and SEC implementing regulations allowed private equity funds to raise unlimited amounts of capital “free of regulation” (60). This coalesced with the passage of the National Securities Markets Improvement Act in 1996. The 1996 law amended the Investment Company Act of 1940 to permit private funds with more than 100 owners, and to exempt private funds from a patchwork of state-level securities regulations (so-called blue sky laws) ([de Fontenay 2017](#); [Ewens and Farre-Mensa 2020](#)). Thereafter, private equity could raise capital on the scale of mutual and exchange-traded funds, but without the same disclosure or regulatory constraints. Indeed, Figure 1 shows rapid growth in private equity fundraising following passage of the 1996 law. Further regulatory shifts since 2000 have also supported private equity’s ability to raise and invest capital ([Georgiev 2021](#)). Notably, the additional governance and financial reporting requirements for publicly traded firms primarily that were implemented in the 2002 Sarbanes-Oxley Act (in response to the Enron scandal) did not apply to private equity portfolio firms ([Leuz and Wysocki 2016](#); [Ballou 2023](#)).

Coates also identifies a second key advantage of shadow ownership for private equity investment managers and portfolio companies: tax avoidance. The legal arrangements for private ownership allow private equity portfolio companies and fund managers to

⁶ Some private equity investment firms like Blackstone are themselves publicly traded, but even in such cases the reporting requirements regarding their portfolio companies are minimal.



earn profits at lower effective tax rates than other firms and investors ([Fleischer 2008](#); Polsky 2019). US firms can deduct interest payments from their taxable income, provided that they respect thin capitalization (“thin-cap”) rules. A well-engineered LBO can thus lower the corporate tax burden of a previously well-capitalized portfolio company ([Coates 2023](#), 81). The opportunity to leverage these combined and ongoing advantages of regulatory concealment and tax avoidance makes it more advantageous to hold portfolio firms in private ownership for longer periods.

Such longer-term shadow ownership may also work in conjunction with our other theorized roles. For example, building new monopolies by rolling up Main Street businesses takes time, and the strategy is enabled by nondisclosure insofar as it prevents would-be opponents from countermobilizing in a timely manner. Although these firms are eventually sometimes sold or relisted, the PE fund’s returns will be greater if private equity managers take sufficient time in the shadows, without public reporting requirements, to attain the market power that promises future rents for investors.

To the extent that the advantages of ongoing shadow ownership increasingly contribute to portfolio firms’ current profitability and prospects for future growth or rent extraction, we should expect private equity to own its portfolio firms longer before exiting the investment. When private equity does exit, it will increasingly do so through what are known as secondary buyouts, or buyouts of portfolio firms by another private equity fund, thereby keeping the firm private. Some buyout firms now exit through sales to “continuation funds,” wherein both the fund selling and the fund buying the portfolio firm are managed by the same PE firm ([Gara and Levingston 2025](#)).

Research Design: Data Sources and Sample

The present analysis leverages data elements from public and proprietary sources, including the Federal Reserve, the SEC, Compustat, PitchBook, and LSEG (previously known as Refinitiv). These are identified in the explanatory notes of the figures. Most of our core analyses draw on deal-level data from PitchBook, which provides cross-linked information about private equity and venture capital deals along with their associated funds, investors, and portfolio companies. The deal sample includes 56,974 buyouts and 21,363 exit transactions from 1985 to 2019. We focus on PitchBook because its deal coverage is more comprehensive than that of competing proprietary sources such as Preqin and LSEG (previously Refinitiv). As discussed below and detailed in the appendix, we extensively augmented reported PitchBook data with additional derived deal type classifications and deal size imputations.

Table 1 presents descriptive statistics for this data by five-year periods from 1985 to 2019. We restricted the analysis to years before 2020 because deal size missingness in PitchBook (and all other proprietary deal databases) is too high after 2019 to reliably



impute deal volume estimates by deal type. We use five-year reporting periods that match those used by Kaplan and Strömberg (2009) in their earlier study of Capital IQ private equity deal data from 1985 to 2007. The appendix provides further details on the comparability of our data sample to Kaplan and Strömberg's.

Table 1. Summary Statistics for US Buyout Deals: Leveraged Buyout (LBO) Activity

	1985–89	1990–94	1995–99	2000–04	2005–09	2010–14	2015–19	1985–2019
Counts								
Number of LBOs	421	656	2,820	5,268	11,261	14,135	22,413	56,974
Number of Targets	402	648	2,679	5,086	10,916	13,780	21,869	49,621
Number of Exits	344	541	1,893	3,071	5,673	5,664	4,177	21,363
Coverage								
LBOs with Known Deal Size	38%	35%	34%	39%	29%	21%	14%	22%
LBOs with Known Exit Type	82%	82%	67%	58%	50%	40%	19%	37%
Deal Size Distribution								
Deal Size P25	\$104M	\$21M	\$27M	\$24M	\$22M	\$22M	\$26M	\$24M
Deal Size Median	\$266M	\$72M	\$93M	\$71M	\$80M	\$95M	\$121M	\$91M
Deal Size P75	\$797M	\$212M	\$291M	\$207M	\$295M	\$356M	\$505M	\$336M
Total Volume								
Known Total Volume	\$152B	\$54B	\$296B	\$530B	\$1,873B	\$1,215B	\$1,868B	\$5,987B
Imputed Total Volume [95% CI]	\$210B [181–239]	\$126B [103–148]	\$537B [516–630]	\$917B [851–983]	\$2,701B [2630–2772]	\$2494B [2408–2579]	\$4,444B [4256–4633]	\$11,464B [11228–11700]

Note: Data are from PitchBook for US-based LBO deals only. Deal sizes and volumes are in 2023 dollars. Size percentiles are computed on deals with known sizes. Imputed totals are pooled across imputations; 95 percent confidence intervals account for between-imputation uncertainty for the imputed portion of the aggregate deal volume.

All reported absolute dollar amounts are adjusted to 2023 dollars using the consumer price index for all urban consumers (CPI-U). For deal sizes, which represent the amount of capital invested in a company for a specific transaction, the unadjusted amounts are dated as of the deal's completion. Fund sizes represent the amount of capital committed by the fund's limited partners between the fund's open and close dates.



Capturing Private Equity Roles in Buyout and Exit Deal Data

To assess how private equity ownership may involve our different theorized roles, we used our deal dataset to categorize and compare the incidence and dollar volumes of different types of private equity buyout and exit transactions over time. As discussed earlier, the theorized role categories of corporate raiding, Main Street invading, monopoly building, and shadow ownership are each characterized by different types of buyouts and exits. Corporate raiding involves public-to-PE buyouts. Main Street invading involves acquisitions of privately held (but not PE-owned) businesses. Monopoly building relies on add-on buyouts and merger sale exits to either agglomerate larger firms or provide the raw materials for other large incumbent firms to further increase their concentration. Shadow ownership is indicated by secondary buyouts of already PE-owned companies and exits to other PE funds.

The appendix details how we use PitchBook database elements to create two variables for indicating these buyout types. The first buyout type variable indicates whether a deal belongs to one of the mutually exclusive categories of public-to-PE, private-to-PE, venture-to-PE, or secondary (PE-to-PE). A second binary variable codes whether a buyout is also an add-on buyout. For our analysis of exits, we create a categorical variable for whether private equity investment exit transactions involve (1) secondary sales to other PE firms or themselves (through continuation funds), (2) IPOs, (3) merger sales to private buyers, (4) merger sales to public buyers, (5) sales to company management (management buyouts or management buyout investments), or (6) bankruptcies. These are mutually exclusive and indicated by a single exit variable. We use PitchBook tags for IPOs and bankruptcies and information in the PitchBook database for whether a firm's next owner is another private equity fund or another company that is publicly traded or privately owned.

Missing Data and Deal Size Imputation

Prior academic and industry studies of private equity transaction volumes and types have been susceptible to bias because of substantial missing data in deal databases, including deal size information. Main Street and monopoly building buyouts may be particularly susceptible to underestimation. Both tend to involve buyouts of private firms which, unlike public firms, typically have no obligation to publicly report their value prior to acquisition. We use multiple imputation techniques and a series of robustness checks to produce estimates that correct for these potential biases. PitchBook provides the most comprehensive database of private equity deals. But Table 1 shows that between 14 and 38 percent of deals include a deal size, depending on the time window, with greater missingness in recent years. Appendix Table A3 shows that the rise of missingness largely reflects the shifting balance of buyouts from publicly traded targets, for which values are reported, to privately held targets. Within privately



held buyouts, we also suspect that larger deals are more likely to have a reported deal size, with disclosure influenced by factors like media attention, industry culture, and strategic opacity by sponsors.⁷

Missingness is less acute with respect to buyout deal types. We identified some cases of deal type misclassification based on missing or erroneous PitchBook data elements through an audit using searches of external sources. To remediate PitchBook's missing deal category and deal size information, we used a combination of manual searches of external data sources, multiple imputation of missing deal sizes, and randomized manual audits of imputed deal sizes. We first conducted manual checks of deal types among the 500 largest deals not tagged by PitchBook as public-to-PE. We focused on the largest deals because we found that larger deals sometimes lacked a public-to-PE tag even when appropriate. This was less often the case for smaller deals. Using structured ChatGPT queries, we gathered external reports on the largest deals from each decade covered by our data. As detailed in the appendix, we restricted external reports to reputable sources including company and investment firm announcements, financial reports, and business press reports. We hand reviewed these reports and manually recoded 222 deals as public-to-PE.

After manually correcting public-to-PE deal tags for larger deals, we used multiple imputation to estimate missing deal sizes. To reiterate, naively overlooking missing deal sizes will result in underestimates of total private equity activity and likely skew the observed distribution of buyout volume across deal types ([Lall 2016](#)). We applied multiple imputation ([Rubin 1987](#); [van Buuren 2018](#)), proceeding under an “approximately missing at random” assumption. Specifically, we used multiple imputation by chained equations (MICE), as implemented in the mice package in R ([van Buuren and Groothuis-Oudshoorn 2011](#); [van Buuren 2018](#)). This technique flexibly and iteratively imputes each incomplete variable conditional on all others. The code used for imputation is available at <https://github.com/HigherEdData/the-new-private-equity>.

Based on the right-skewed deal size distribution and the assumption of a multiplicative relationship between deal size and most other variables, we imputed the logarithm of deal size in 2023 dollars using a linear predictor model. Informative predictors were selected to capture the main features of a deal, the characteristics of the target, the size and experience of the investors and funds involved, and the time-varying patterns of deal structuring and reporting. We also included quadratic terms and interactions between the predictors where appropriate. We first estimated this model on deals with known deal sizes to assess fit ($R^2 = 0.601$; adjusted $R^2 = 0.600$; $F = 458.2$ on 39

⁷ Deal size missingness may have increased partly as a result of the December 2000 HSR Anti-Trust Improvements Act, which increased size thresholds for required reporting of add-on buyouts to the FTC ([Wollmann 2019](#)).

parameters and 11,852 degrees of freedom, $p < 0.001$) and then used it as the conditional model for log deal size in the chained equations.

MICE iteratively samples from an approximate posterior predictive distribution $p(X_j | X_{-j})$ for each incomplete variable in turn. We generated 80 imputed datasets over 20 Gibbs cycles to ensure convergence and stable confidence intervals ([Rubin 1987](#); [von Hippel 2020](#)). We used predictive mean matching (PMM) for all continuous and binary variables to preserve the observed distributions, including the tails, to remain within the range of the observed values and to mitigate extrapolation issues ([Austin and van Buuren 2023](#); [2025](#)). We also used information on the total committed capital across participating funds to impose a conservative upper size bound, such that an imputed deal size cannot be larger than one half of the aggregate size of all buyout funds involved in the deal. This helps avoid implausibly large values.⁸

We assess the validity of our imputation model by performing a k-fold cross-validation procedure, the results of which are reported in the appendix. We also assessed the sensitivity of the imputed values to the log-normal distributional assumption by rerunning an equivalent nonparametric random-forest imputation approach, which produced substantively identical aggregate values and shares by deal type over time.

Finally, we manually audited the imputation procedure by comparing imputed values to externally acquired deal size information for a stratified random sample of 300 imputed deals. Although we could locate credible external information on deal sizes for only a small portion of this sample (14 percent), we find that within this subset imputed deal sizes tend to be smaller than actual deal sizes. We also hand checked all 57 deals with an imputed size that places them in the top 1 percent of deal sizes. Here again we found that imputed deal sizes tended to be smaller than actual deal sizes reported in external sources. This exercise provides reassurance that our imputation is not systematically overestimating deal sizes in general.

Below we present estimates using both imputed values and naïve listwise deletion. The resulting wide range of estimates offers the best depiction of the uncertainty posed by data missingness that arises from private equity's operation in reporting and regulatory shadows. Reassuringly, although point estimates of deal volumes differ significantly between the imputed and naïve samples, most of the theoretically relevant over-time trends of interest are consistent across the two.

⁸ We did not apply this upper bound to public deals because they are known to use higher leverage leading to larger deal sizes relative to associated fund size ([Axelson et al. 2013](#)).

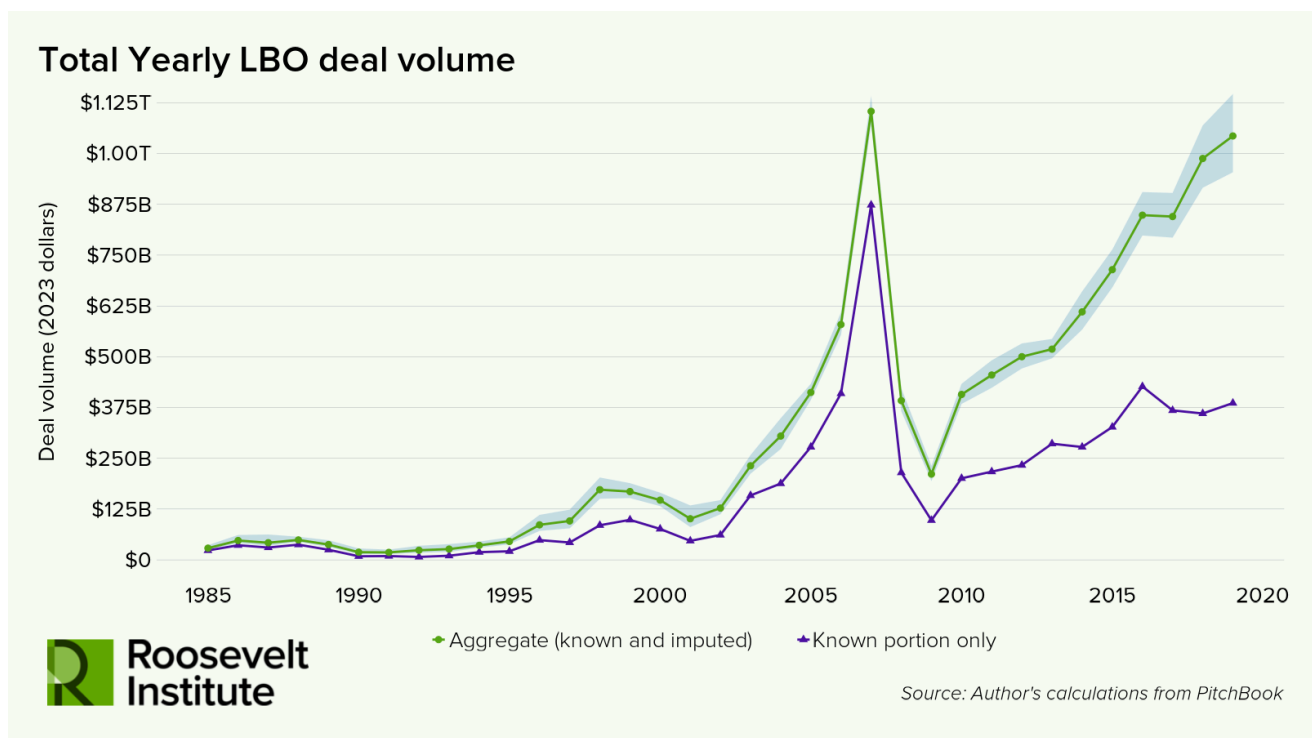


Results: The Rise of the New Private Equity

The core of our analysis below focuses on the relative balance between deal types by which the new private equity arose over the last four decades. First, however, Figure 3 contextualizes these analyses with estimates for total US buyout dollar volume.

Consistent with Kaplan and Strömberg (2009), lines for both known and imputed dollar volume estimates show growth from the tens of billions in the early 1990s to the hundreds of billions in the 2000s, topping \$1 trillion in 2007 and again in 2019. The imputed values increasingly diverge from naïve observed values after 2010, reflecting the increasing percentage of buyouts with undisclosed deal sizes. Although relying on imputation involves an unavoidable degree of uncertainty, our imputed estimates track with known growth rates of total private equity funds raised and buyout funds raised, as shown earlier in Figure 1. Additionally, the more rapid growth in imputed buyout volume after 2010 is plausible given the concurrent growth in the use of leverage for buyouts during this period (MacArthur 2020) and growth in buyout sponsorship by private equity portfolio firms rather than buyout funds themselves (see Appendix Figure A3).

Figure 3



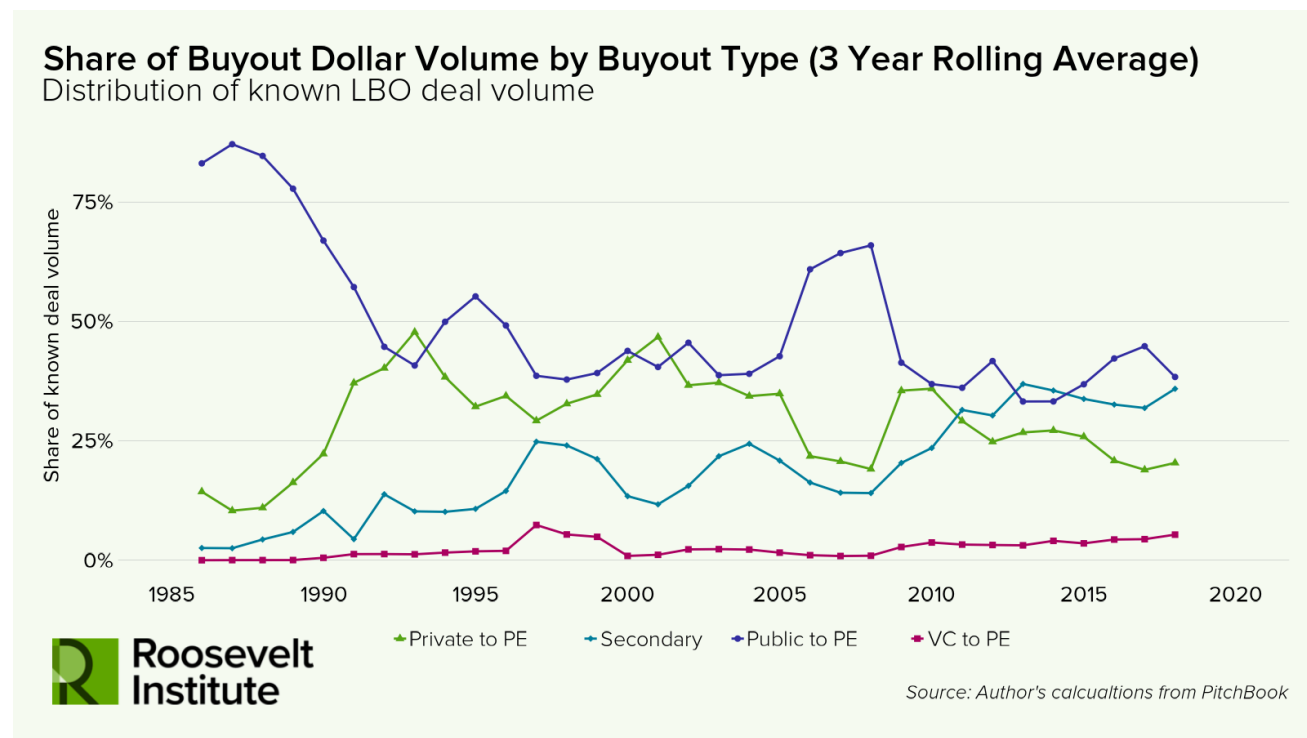
Note: Shaded region represents 95 percent confidence interval for between-imputation uncertainty (Rubin 1987). This is a lower bound on the uncertainty, as it does not account for misspecification of the imputation model.

Shifts Away from Corporate Raiding in Buyouts

Figure 4 plots over time the proportions of total buyout dollar volume in the US that were (a) private-to-PE, (b) secondary, (c) public-to-PE, or (d) venture-to-PE. Represented by (a), (b), and (d), varieties of Main Street invading and shadow ownership grew to comprise a majority of buyout volume across this period. But after its peak in the 1980s, corporate raiding's share declined from around 75 percent in the 1980s to a much lower fraction since the 1990s, though it briefly surged in the 2000s amid the low-interest rate capital glut of that period, before then collapsing during the 2008 financial crisis ([Shivdasani and Wang 2011](#)).

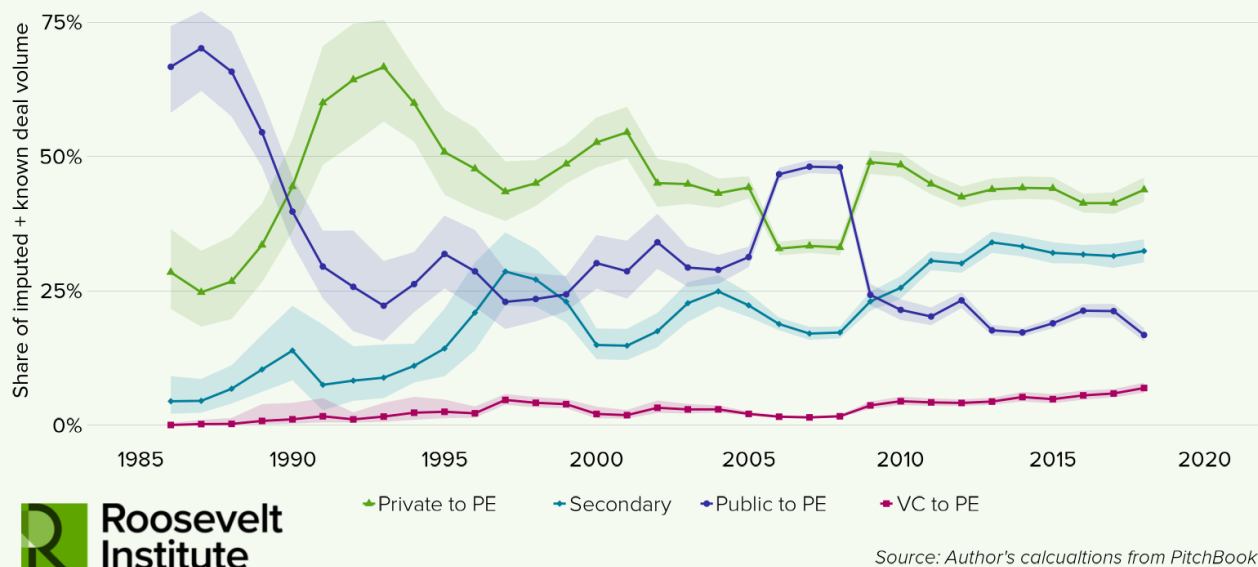
The top panel of Figure 4 uses known deal sizes only, excluding deals with imputed sizes. The bottom panel includes imputed values for missing deal sizes. While the estimates differ between the panels, both show the same structural trends over time, particularly in the decades before the 2008 financial crisis—years for which more than a third of deal sizes are known. The known deal-size panel shows a decline in public-to-PE buyouts from around 80 percent of dollar volume in the 1980s to around 40 to 55 percent for most of the 1990s, staying at around 40 percent throughout most of the 2000s and 2010s. The imputed deal size panel, which corrects for the disproportionate missingness of private-to-PE deal sizes, shows a similar but more precipitous decline from a peak of 70 percent of deal volume to around 20 percent in the 2010s.

Figure 4



Share of Buyout Dollar Volume by Buyout Type (3 Year Rolling Average)

Distribution of imputed + known LBO deal volume



Note: Shaded region for the bottom graph represents 95 percent confidence interval for between-imputation uncertainty. Each deal type category includes add-ons, divisional buyouts, and management buyouts, which we treat as overlapping categories.

The Rise of Main Street Invading and Shadow Ownership in Buyouts

Figure 4 also shows that volume during this period shifted particularly to private-to-PE deals, matching public buyouts in the known deal size panel and surpassing them in the imputed panel. These shifts show private equity rebalancing between corporate raiding and Main Street invading. Venture buyouts, another vehicle for Main Street invading, have expanded in more recent years, growing from 2 to 3 percent in the 2000s to 6 to 7 percent in recent years. This shift occurred mostly since 2010, when deal size missingness increases in our data. The trends are almost equivalent in the known deal size and imputed panels, reflecting that deal sizes are more commonly reported for venture buyouts. Similarly, the estimates are nearly equivalent across both panels for the growth of shadow ownership via secondary buyouts, which grew steadily to around 20 percent of deal volume at the end of the 2000s and surpassed 30 percent by 2018.

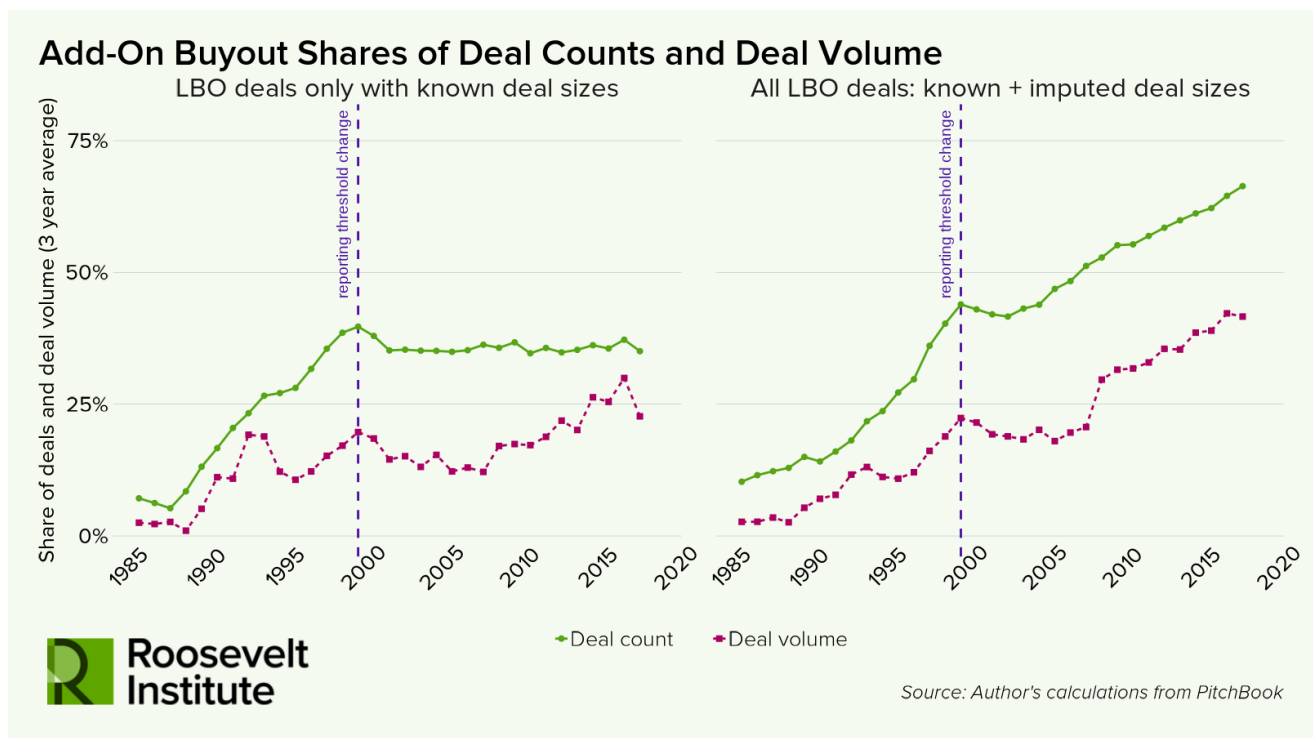
The Rise of Monopoly Building and Shadow Ownership in Buyouts

Analysis of add-on buyouts illustrates how private equity's shadow ownership repertoire has facilitated monopoly building and declines in public reporting of buyout



deal sizes. Figure 5 plots add-ons as a proportion of buyout deal counts and deal volumes, with separate panels for known deal size only (left) and including imputed deal sizes (right). Both plots show steady growth in add-ons as a share of deals from the 1980s to 2000, rising from a single-digit share to around 40 percent of all deals and around 20 percent of deal dollars. In 2000, the HSR antitrust reform increased the size threshold for add-on deal size reporting to the FTC. This stripped PitchBook and the business press of a reporting source for identifying deal sizes for large shares of private add-on buyouts and created an incentive for buyout funds to not publicly announce deal sizes below the threshold. As a result Appendix Table A3 shows that deal size reporting declined among private-to-PE and secondary deals from 2000 to 2019. Accordingly, the left-hand plot (showing only known sizes) shows a sharp decline and then flatlining of add-on buyouts as a share of all deals. The right-hand plot, however (additionally showing missing sizes), shows that add-on deals declined more modestly in the early 2000s and then resumed their growth to over 70 percent of all deals in 2018. Given the policy-associated drop in reports on add-on deal sizes, we place more confidence in our imputed estimate that add-on deal volume grew to over 40 percent of all deal volume in 2018.

Figure 5



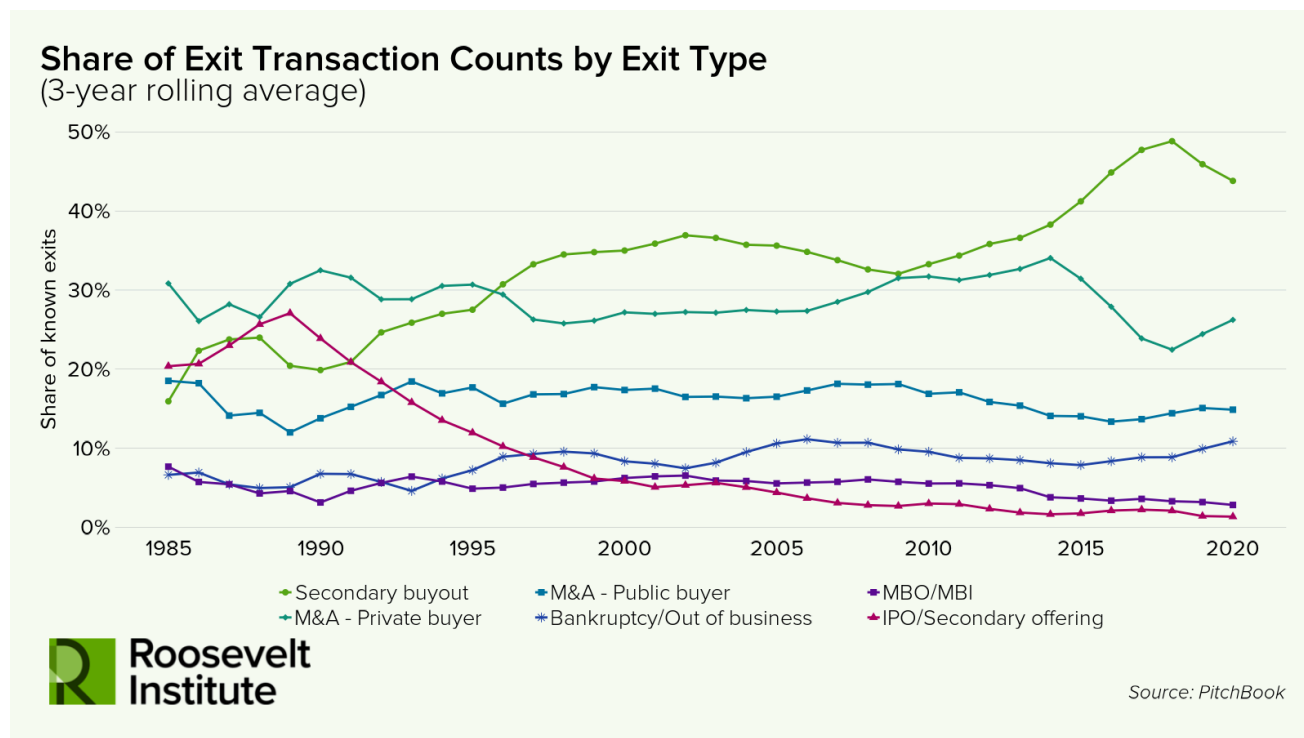
Appendix Figure A4 shows that monopoly building add-on buyouts have also grown in conjunction with Main Street invading. Our imputed estimates show that add-ons have grown to comprise a majority of private-to-PE buyout deal dollar volumes and nearly 50 percent of venture-to-PE buyouts.



Monopoly Building and Shadow Ownership: Evidence from Exits

Analysis of deal exit data further highlights the increasing centrality of monopoly building and shadow ownership roles. Figure 6 plots the share of buyout exits by known exit type for LBO deals occurring between 1985 and 2020.⁹ Three key patterns are apparent. First, Figure 6 highlights a collapse in private equity's prior role in creating publicly traded challengers to publicly traded incumbents through IPOs. IPOs fell from 20 to 25 percent of exits in the 1980s to less than 2 percent of exits in 2020, with most of the decline occurring by the end of the 1990s. This is again consistent with the timing of new regulatory advantages for continued private ownership created by the 1996 amendment of the Investment Company Act, and the tightening of public corporation regulations by Sarbanes-Oxley in 2002.

Figure 6



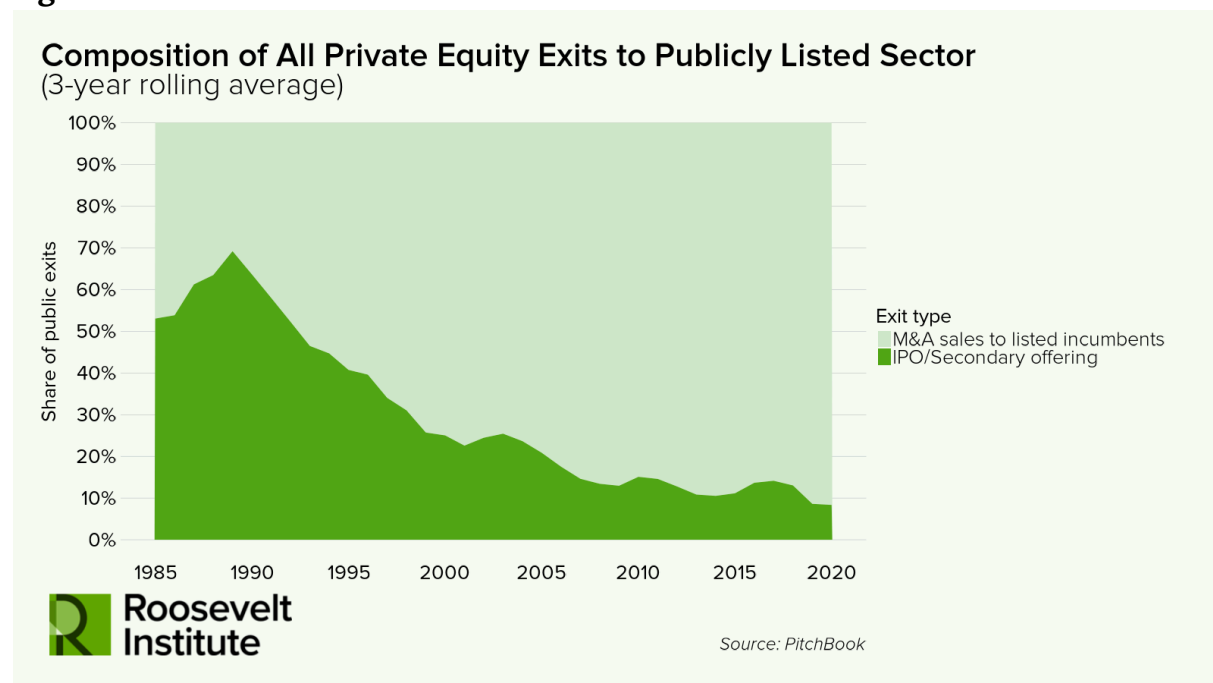
Second, the prevalence of secondary exits grew from approximately 20 percent in the 1980s to around 35 percent in the 2000s. Secondaries grew further to nearly 50 percent of all exits in 2015–2020. This means that private equity funds' deal exits increasingly serve to recycle portfolio companies back into the PE system, which is consistent with the permanent shadow owner role.

⁹ Here we focus on the proportion of exit deals rather than the proportion of deal dollar volume, as exit deal size data is too sparse for analysis or reliable imputation.

Finally, Figure 6 highlights how private equity has maintained a long-standing role in monopoly building through mergers and acquisitions (M&A) exit sales to other nonfinancial firms (both publicly traded and private). Across all years shown in Figure 6, M&A sales to privately held firms made up around 30 percent of all exit deals. By comparison, M&A sales to public firms made up slightly more than 15 percent of all exit deals in most years. Combined, M&A exits to private and public firms made up nearly half of all exits in most years, but around two-thirds of these M&A exits involved private firm buyers.

If a private equity portfolio firm does eventually move into public ownership, it is usually through acquisition by a publicly traded competitor, not through an IPO. We illustrate this in Figure 7, which plots the composition of all exits to the publicly listed sector over time. In the 1980s, over 60 percent of exits to the publicly listed sector were through IPOs. In recent years, over 90 percent of exits to the publicly listed sector have been through M&A sales to public firms. Through this inversion of private equity's relationship to publicly held firms, private equity now not only builds its own monopoly-pursuing firms but also provides raw material for publicly traded firms to engage in monopoly-building. Overall, the patterns in Figures 6 and 7 suggest that private equity has increasingly assumed the role Jensen (1989) predicted as a permanent private market for corporate control. That market, however, serves to increase corporate concentration rather than create investor-owned challengers to incumbents.

Figure 7



Note: Data are from PitchBook using total deal counts for all exit deals that result in public ownership of a portfolio firm.



Shadow Ownership: Evidence from Hold Times

Longer investment hold time offers another indicator of the rise of the shadow ownership model. Figure 8 shows that average hold times increased from around 2.5 years in the 1980s to 6 years in 2020. Our measure defines hold time as the period in which a portfolio firm is owned by a given PE fund following a buyout, whereas some prior studies consider the total duration that portfolio firms are held by *any* PE fund or private owner ([Strömberg 2008](#)). The fact that hold times have increased steadily over the last 40 years suggests that this is a long-term trend rather than solely the product of recent obstacles to profitable exits. Longer holds also fit with a decline in corporate raiding, as scaling companies through monopoly building or other buy-and-build strategies likely takes longer than the management restructuring or financial reengineering traditionally employed by corporate raiders.

Figure 8



Note: Holding periods are calculated only for portfolio firms for which PitchBook has reported an exit deal.

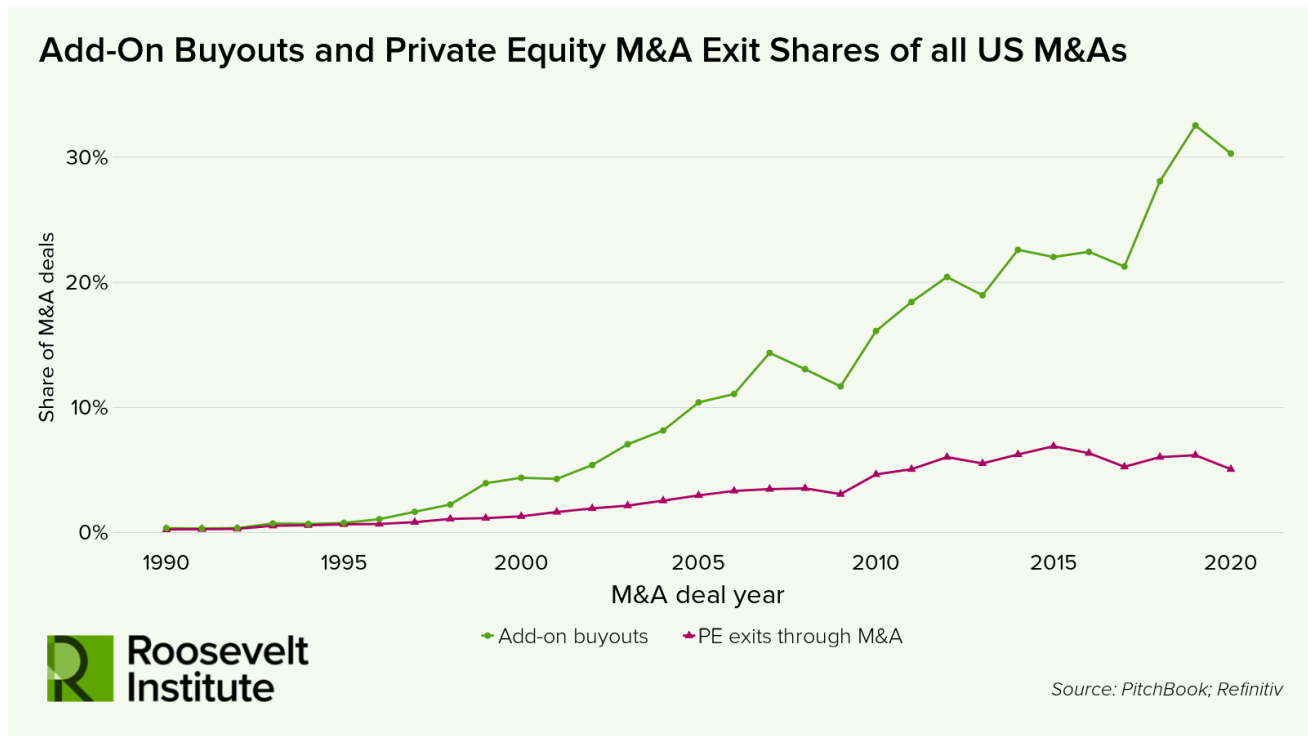
Monopoly Building: PE and Overall US Merger and Acquisition Activity

In a final assessment of private equity's monopoly-building role, we find that private equity add-on buyouts and M&A exits account for a growing share of all US mergers and acquisitions activity. Figure 9 shows these trends. Here the denominator is all US



M&A deals, including M&A deals not involving private equity. On the acquisition side of M&A transactions, the green line shows that add-on buyouts grew from just over 0 percent of M&A deals in the 1990s to approximately a third in recent years. On the selling side, the magenta line shows that private equity exits through M&A sales grew from less than 1 percent of M&A deals to over 5 percent in the last decade.

Figure 9



Note: Add-on buyout and private equity M&A exit count numerators are from PitchBook. Total M&A deal count denominators are from LSEG (previously known as Refinitiv).

Discussion: Private Equity and the Enduring Public Corporation

Marshaling the most systematic data to date, we find both a growing reach of private equity and a shifting balance in its interrelated roles as corporate raider, Main Street invader, monopoly builder, and shadow owner. Acquisitions of already private firms grew to at least match corporate raiding as a principal form of buyout activity in the early 1990s. While the takeover of previously public corporations remains part of the private equity repertoire, this role has declined as fewer publicly traded corporations remain untouched by the shareholder-value revolution. Main Street invading, meanwhile, has helped spread the shareholder-value revolution to sectors of the economy that had long been dominated by closely held private ownership. In doing so, private equity as a financier-owner-manager has increasingly displaced the commercial

banker as financial intermediary for large swaths of the Main Street economy ([Lin and Pernell 2026](#)).

The dollar volume of this shift away from corporate raiding has been underreported in private equity deal databases because of infrequent public reporting of deal values for private buyouts, a facet of private equity shadow ownership. The growth of monopoly-building add-on buyouts, to as much as 40 percent of total deal volume, has also been underrepresented in deal databases. This flows from roll-up acquisitions where private equity serially acquires competitors in deals with values below FTC review thresholds—a regulatory avoidance strategy that rhymes with shadow ownership. A decline in public announcements of buyout deal sizes since 2000 followed Congress’s tripling of the HSR size thresholds for reporting add-on buyouts for review.

These findings point to understudied mechanisms by which private equity’s expansion may contribute to rising corporate market power more broadly in America. With acquisitions, restructuring, and displacement of previously Main Street businesses, private equity has carved out central roles for building corporate concentration through agglomeration, regulatory avoidance, or both. Monopoly building through add-on acquisitions has grown not only as a share of all private equity buyout volume but also as a share of all US M&A activity, now comprising around a third of all M&A transactions. We find that a majority of private-to-PE and over 40 percent of VC-to-PE buyout volume is through add-on deals, up from the single digits in the early 1990s.

Meanwhile, the duration of private equity ownership of portfolio firms shifted from relatively short-term restructuring to longer-term, semipermanent private holding. The average hold time for a given buyout increased from 2.5 years in the 1980s to 6 years in 2020. And the total duration of PE ownership grew even longer when one considers that secondary sales to other PE funds increased from around 20 percent of exits in the 1980s to nearly 50 percent in the years before 2020. We have argued that this shift reflects the heightened appeal of regulatory and disclosure avoidance in contemporary capitalism as an impetus for ongoing private ownership.

These findings suggest multiple paths for future research that might reconsider ideas put forth by both proponents and critics of shareholder-value capitalism. In some respects, private equity has grown in its multiple roles to realize Jensen’s utopian vision for a permanent private market for corporate control. Contra Jensen, however, the primary function of private equity over the past 40 years has not been to supplant the publicly traded corporation with a superior private ownership form. Its main function instead has been to spread the edicts of shareholder-value management cultures and financing arrangements to the privately held supermajority of the economy. That is, to Main Street.



Our analysis also highlights the need to rethink the evolving relationship between private equity ownership and the publicly traded corporate sector. Publicly traded and private equity ownership have typically been cast as competing organizational forms, but less work has considered how they may complement each other. Even as the number of publicly traded firms has diminished as a consequence of private equity, our analysis suggests that the growth of private equity may buttress rather than challenge the hegemony of the largest public corporations. Instead of creating new challengers to public firms, private equity funds are increasingly likely to exit investments by selling portfolio firms to publicly traded incumbents in M&A sales. Such acquisitions can either grow a publicly traded incumbent's market share or serve to kill off a potential competitor ([Cunningham, Ederer, and Ma 2021](#)). Private equity might thereby fuel rather than undercut the growing concentration of large corporations. This possibility could be probed further by comparing the prevalence of M&A exits to public and private firms after monopoly-building add-on buyouts relative to other types of buyouts.

Another key issue for future research is to assess the extent to which the social consequences of private equity's expansion represent continuity with previous incarnations of shareholder value capitalism, or whether its effects are distinctive. Here researchers should consider private equity's implications for consumers, communities, and the environment—stakeholders that have received less attention than workers and investors. For instance, recent studies of private equity's role in healthcare highlight how product opacity, regional market monopoly-building, and Main Street invading can intertwine in consequential ways for patients, communities, and payers ([Bruch et al. 2020](#); [La Forgia et al. 2022](#); [Gupta et al. 2024](#)).

Another path for future work is to conduct more systematic between-industry comparisons. Such studies might investigate whether private equity is more likely to assume particular roles and strategies in different types of industries, such as those with more public subsidies, opaque products, and market capture opportunities. We have cataloged four ideal-typical roles, but there is more to learn about how they conjoin across different institutional settings.

Finally, we note that the growth of private equity is a global phenomenon. This raises a host of cross-national questions regarding the reach and roles of private equity that we have documented in the US.



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Appendix

A.1 Reporting Obligations and Operative Sample Definition of Private Equity

The asset management industry is regulated by the Investment Company Act of 1940 (ICA) and the Investment Advisers Act of 1940 (IAA). When the IAA and the ICA were designed, VC and private equity firms did not exist as such. When the VC industry started growing, it successfully lobbied Congress for exemptions from the ICA and portions of the IAA, resulting in the Small Business Investment Incentive Act of 1980. In 1996, an exemption to the ICA was expanded that covered most private funds, including most private equity and hedge funds. In 2010, Title IV of the Dodd-Frank Act was passed, which somewhat increased the reporting requirements for many hedge funds and private equity firms under the IAA starting in 2011, but the law retained an exemption for the VC industry. Now, private equity firms' main disclosure obligations are filing two types of forms with the SEC: Form ADV, filed by advisors to public or private funds, and Form PF, filed by advisors who manage at least \$150 million in private fund assets.

We report private equity and venture measures together in Figure 2 because of similarity and fluidity between these forms, including in their SEC reporting. Appendix Table A2 shows that venture capital comprised less than 25 percent of combined AUM reported in PitchBook across all years. Because of their narrower legal definition for SEC Form PF report categorization, however, VC made up just 2 to 4 percent of gross assets. Coates (2023) traces the origins of private equity to financial regulatory changes advocated by the National Venture Capital Association after its formation in 1973 (60). Private equity leveraged buyouts can also involve acquisitions of venture-backed start-ups that seek to disrupt Main Street sectors.

A.2 Encoding Buyout Deal Types

First, we supplement PitchBook's public-to-PE buyout tag by also tagging buyouts as public-to-PE if other deal variables, the deal synopsis, or the deal history of the target company indicates that the target was previously publicly traded. Our method categorizes buyouts as public-to-PE when they involve either a going-private buyout of an entire company or the acquisition of a division of a publicly traded firm—a transaction also called a corporate divestiture. As detailed in section A.5 below, we also manually checked deal types among the 500 largest deals not tagged by PitchBook as public-to-PE and manually recoded 222 deals as public-to-PE.



Second, we tagged deals as venture-to-PE if a portfolio firm had previous venture rounds but was not previously acquired in a private equity buyout. Third, we tagged a buyout as a secondary buyout if a firm was not publicly traded and was previously acquired in a private equity buyout prior to the given buyout. Fourth, we treat all buyouts as private-to-PE if they are not tagged as public-to-PE, venture-to-PE, or secondary buyouts through the procedures just described.

A.3 Data on Business Net Worth

Reported in Figure 2 of the main paper, our PitchBook-based estimate of PE and VC-owned share of US nonfinancial business net worth is lower than that reported by Coates (2023), because Coates' estimates appear to include all global investments by PE and VC funds tracked by PitchBook. Our PitchBook estimates, however, are consistent with the employment-based measures of the PE and VC funds' economic reach. Not including venture-backed firms, US private equity portfolio companies were estimated to employ 13.3 million employees in 2024, around 10 percent of total private nonfarm employment (US Bureau of Labor Statistics 2024; Ernst & Young 2025).

Nevertheless, our PitchBook-derived estimate of the PE and VC-owned share of US business net worth has two sources of upward bias and two sources of downward bias. For the first upward bias, the underlying PitchBook numerator data includes some assets other than portfolio firms that are occasionally held by PE and VC funds. Second, PitchBook's NAV measure estimates the fair market value of PE/VC investments, while the net worth values used for corporate and noncorporate businesses reflect the book value of equity (we cannot use the market value of equity in our denominator since this data is not available for privately held firms). For the first downward bias, we exclude from our PitchBook numerator real asset funds and debt funds, which commonly invest in LBOs of portfolio firms and are often managed by PE firms (see Appendix Table A1). We also exclude funds of funds to avoid double counting. Second, PitchBook data has a less comprehensive coverage of US PE and VC funds in comparison to the SEC Form PF data.

Shown in Appendix Figure A5, SEC data from 2023 suggest that PE- and VC-portfolio firm investment values have grown closer to 15 percent as a share of all nonfinancial business net worth. The SEC measure in Appendix Figure A5 shows the PE and VC asset values rising to 21 percent of business net worth, but this estimate includes dry powder funds that have not yet been invested to acquire portfolio assets (like our PitchBook measure, however, the SEC measure does exclude funds of funds, real asset funds, and debt funds). The left-hand panel plots the rise of private equity- and venture capital asset values as a share of the total US nonfinancial business net worth estimated by the Federal Reserve. The right-hand panel plots PE and VC assets as a share of only privately held corporate businesses. We present estimates with both denominators



because PE and VC investments may shift the balance of ownership forms, both within the privately held sectors of the economy and across the economy as a whole.

The magenta lines in the two plots use as a numerator the total gross AUM reported by PE and VC funds in SEC Form PF filings. The left-hand plot shows that gross AUM increased from 9 percent of all business net worth in 2013, or \$1.9 trillion, to 21 percent of business net worth, or \$7.8 trillion, in 2023. In the right-hand panel, the magenta line shows that SEC-reported AUM increased from just over 36 percent of private corporate net worth to 62 percent in 2023. Recall, however, SEC AUM also includes funds' dry powder that has not yet been invested in portfolio firm ownership. PitchBook reports that PE and VC funds held 30 percent of AUM in dry powder in 2023. If we attribute this percentage of SEC-reported AUM to dry powder in 2023, the invested share of AUM reported by PE and VC funds to the SEC would amount to around \$5.5 trillion, or around 15 percent of all business net worth and around 44 percent of all private corporate net worth.

Shown in green, PitchBook's measurements trace growth of portfolio investments' net asset value (NAV) (AUM excluding dry powder) farther back, to 1997. The PitchBook data allows us to see how PE investment values grew, particularly as a share of private corporate net worth, from 2006 to 2011 as the private corporate share of the US economy contracted in the aftermath of the 2008 financial crisis. The PitchBook investment value annual totals are likely lower than the SEC AUM annual totals both because PitchBook excludes dry powder and because it has less comprehensive coverage of PE and VC funds than SEC reports.

Estimates in Figure 2 and Appendix Figure A5 use Federal Reserve data (Tables B103 and B104) to calculate total net worth of US businesses at historical cost for corporate and noncorporate nonfinancial businesses. We use Compustat Fundamentals Annual data to estimate the number of US publicly traded corporations and the book value of equity (SEQ) of publicly traded nonfinancial corporations. We do not use the market value of equity (that is, market capitalization) to estimate the value of publicly traded corporations because equivalent market values are not available for privately held firms. LSEG (previously known as Refinitiv) provides information about US M&A activity. The SEC provides aggregated information about private funds that file Form PF, including gross fund assets. Because the fair value of portfolio assets can increase under fund ownership, investment asset values can exceed the total of funds raised in all previous years by funds still in operation in a given year.

The SEC measure may reflect more complete reporting, as all funds with more than \$150 million in gross Assets Under Management (AUM) are required to report AUM to the SEC. There is no such requirement for reporting to PitchBook. The SEC instructs fund managers to report "the current market value (or fair value) of the private fund's assets," which should reflect the value of portfolio companies that have been acquired



with both investor funds and debt—and the value of portfolio companies may increase in value after acquisitions. For the SEC, pursuant to the IAA, a private equity fund is “any private fund that is not a hedge fund, liquidity fund, real estate fund, securitized asset fund or venture capital fund and does not provide investors with redemption rights in the ordinary course,” and disclosure must be made when private fund assets under management are above \$150M.

We report PE and VC investment value measures together in Figure 2 and Appendix Figure A5 because of similarity and fluidity in VC and PE fund ownership of private portfolio firms, as well as a narrower legal definition of VC funds for SEC reporting whereby some funds in the VC market category are reported as PE funds. The SEC definition of a venture capital fund is narrower than the commonly used market terminology. Meanwhile, PitchBook uses its own undisclosed proprietary inclusion criteria, making a side-by-side comparison difficult.

To illustrate overlaps and inconsistencies in reporting of investment values under PE versus VC fund categories, Appendix Table A2 breaks out PE and VC fund AUM by year. This shows that just 5 percent of SEC PE and VC AUM is reported in PitchBook under the venture category. But close to one third of PE and VC portfolio values are under VC ownership in PitchBook data.

A.4 Comparability of Deal Volume Data with Kaplan and Strömberg (2009)

Table 1 presents descriptive statistics for deal volume data by five-year period from 1985 to 2019. We use five-year periods that match those used by Kaplan and Strömberg (2009) in their study of Capital IQ private equity deal data from 1985 to 2007. Table 1 shows that in our first period, 1985 to 1989, our data consisted of 421 US buyout deals. From the 38 percent of these deals with known deal sizes, we impute \$210 billion in total deal volume (2023 dollars). This estimate is more conservative than Kaplan and Strömberg’s 1985 to 1989 estimate: 642 buyouts globally, with 87 percent of their imputed deal dollar volume occurring in the US and Canada for a total of \$330 billion in imputed deal volume (2023 dollars). In the final five-year period examined by Kaplan and Strömberg, 2000–2004, our data includes 5,268 US buyouts with \$530 billion in known deal volume and \$917 billion in imputed total deal volume. Here our estimate exceeds that of Kaplan and Strömberg because our known deal volume approaches their imputed deal volume. During that period, their data includes 5,673 buyouts globally, with just 44 percent of their deal dollar volume falling within the US and Canada for a total imputed deal volume of \$685 billion.

A.5 Hand Audits of Public-to-PE Deal Coding



As we note in the manuscript, we conducted manual checks of deal types among the 500 largest deals not tagged by PitchBook as public-to-PE. We focused on the largest deals because we found that larger deals sometimes lacked a public-to-PE tag even when appropriate. Using structured ChatGPT queries, we gathered external reports on deals without a public-to-PE tag with stratified subsamples of the largest deals from each decade covered by our data. We restricted external reports to reputable sources including company and investment firm announcements, financial reports, business press reports, and other private equity deal database listings. We hand reviewed these reports and manually recoded 222 deals as public-to-PE. A majority of these recodes were from the largest 200 deals, as smaller deals without a tag are less likely to be public-to-PE.

Across the five deal size quintiles of the 500 largest deals, the frequency of public-to-PE deals lacking a tag declined from larger to smaller quintiles. We found that 63 of the deals in the quintile of the 100 largest deals without tags are in fact public-to-PE buyouts. The counts of deals lacking public-to-PE tags in the subsequent quintiles, declining by size, are 51, 38, 38, and 32. We corrected these missing public-to-PE tags in our dataset. Among deals with smaller sizes, it is less likely for a public-to-PE tag to be missing. Nevertheless, missing public deal tags for some smaller deals may downwardly bias the proportion of deals we estimate as public-to-PE.

A.6 Hand Audits of Imputed Deal Sizes

Given our concerns about biased overestimation of missing deal sizes, we conducted hand audits of external sources beyond PitchBook for a stratified random sample of 300 deals with imputed missing deal sizes. We gathered external sources using the same structured ChatGPT query procedure used to check deal types described in the first paragraph of section A.5.

We first stratified the sample to draw 150 public buyouts and 150 private buyouts. We further stratified the sample by imputed deal size to draw 100 deals from the bottom 50 percent of each buyout type, 100 deals from the 50th to 90th percentile, and 100 deals from above the 90th percentile. We found reported deal sizes for 43 of these 300 deals (14 percent), including 8 of the examined 150 private deals (5 percent) and 35 of the examined 150 public deals (23 percent). We identified reported deal sizes at higher rates for deals with larger imputed sizes—14 percent of the 50 private deals in the top 10 percent, and 38 percent of public deals in the top 10 percent. Across both deal types and all imputed size quantiles, average actual deal sizes from external reports were larger than our imputed deal sizes. The average external actual deal size in our stratified random sample was around five times larger than the imputed deal size.

We also hand checked all 57 deals with an imputed size that places them in the top 1 percent of deal sizes. We found deal size reports for 17 of these deals (30 percent). On



average, actual reported deal sizes for these deals were 2.4 times larger than our imputed deal sizes.

A.7 K-Fold Cross Validation of MICE Imputations

We use 10 folds, hiding deal sizes for each fold for a different 10 percent of observations for which we have known deal sizes from PitchBook. Using 20 imputations and 15 iterations, we then impute deal sizes for the hidden deal size observations and repeat the procedures for each fold, thereby imputing deal sizes for all observations with known deal sizes. Finally, we compare the imputed deal sizes to the known deal sizes for the same observations. Appendix Table A4 reports the results of these comparisons across all deals and by deal types. In sum, they show a 0.65 correlation between our imputed log deal sizes and log deal sizes for deals with known sizes. This yields a mean difference for imputed deal sizes error of -\$101 million, indicating smaller average imputed deal sizes than known deal sizes. The median imputed deal size error is +\$26 million. This suggests that our imputation procedure on average underestimates the size of large deals, while overestimating most deal sizes. Because we use our imputations to estimate aggregate deal volumes, negative mean errors suggest that our imputation procedure would be conservative if deal sizes in PitchBook data were missing at random. Given that the k-fold test shows that our imputation procedure tends to underestimate missing deal sizes, we can have more confidence that increasing missingness in our data is not driving the observed time trends of growth in private and add-on deals which are more likely to be missing.

Appendix Table A4 details that imputed buyout sizes are consistently around 80 percent of actual buyout sizes across all buyout types. First, the \$4.7 trillion total of imputed deal sizes in the k-fold test amounts to 79 percent of the \$6.0 trillion total of actual deal sizes for which deal sizes are known. This ratio of imputed to actual deal size totals is consistent across deal types. The ratios of imputed buyout size totals to actual buyout size totals are 78 percent for private buyouts, 76 percent for public buyouts, 82 percent for secondaries, and 82 percent for venture buyouts. In unreported k-fold tests using our imputation procedures without caps on imputed buyout size relative to the value of funds associated with a given buyout, the ratios of imputed to actual totals of buyout sizes were 112 percent for private buyouts, 130 percent for secondaries, and 110 percent for venture buyouts. This illustrates how our imputation model imposes conservative constraints for estimating the growth in dollar volume of private, secondary, and venture buyouts relative to public buyouts. We impose no cap on imputed buyout size for public buyouts relative to associated fund size because higher leverage is typically employed for public buyouts ([Axelson et al. 2013](#)).



Table A1: Summary Statistics of US Private Funds and Their Participation in US LBO Deals

Private Fund Statistics (1985--2019)								
Counts, coverage rates, and capital raised by capital commitment windows, in 2023 dollars								
	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019	1985-2019
Number of funds	337	489	1,774	2,431	4,103	6,107	11,523	26,764
Prop. of funds with missing \$ raised (%)	10	10	5	7	11	15	17	14
Total \$ raised by all funds (bn USD)	122	163	772	1,122	2,589	2,206	4,258	11,233
Mean \$ raised per fund (m USD)	402	370	459	496	710	427	446	488
Median \$ raised in 1st yr of period (m USD)	85	146	139	186	243	138	95	85
75th-pct of \$ raised in 1st yr of period (m USD)	189	420	282	523	595	414	395	189
\$ raised by largest fund (m USD)	16,528	4,622	11,328	11,448	32,038	23,828	30,824	32,038
US Private Fund Participation in US LBO Deals (1985-2019)								
Counts, coverage rates, and capital by fund type, in 2023 dollars								
	Private Equity	Real Assets	Private Debt	Venture Capital	Other	All Funds		
Fund-based summaries								
Number of funds	5,502	1,325	1,245	10,004	815	18,891		
Total funds raised (bn USD)	4,927	1,594	1,201	1,569	184	9,474		
% of funds engaging in LBOs (by fund count)	63	48	55	7	20	30		
% of funds engaging in LBOs (by funds raised)	70	60	61	16	29	57		
Deal-based summaries								
Total number of deals	55,179	4,966	8,780	131,572	2,354	202,851		
Number of LBO deals	41,079	2,664	5,258	2,211	564	51,776		
LBO as % of total deal count	74	54	60	2	24	26		
Total known deal volume (bn USD)	2,489	659	323	662	120	4,252		
Known LBO deal volume (bn USD)	2,124	403	221	74	66	2,889		
LBO as % of known deal volume	85	61	69	11	55	68		
Distribution across fund types								
% of total deal count (all deals)*	41	4	7	56	2	100		
% of total known deal volume (all deals)	59	15	8	16	3	100		
% of total LBO deal count*	87	6	12	5	1	100		
% of total known LBO deal volume	74	14	8	3	2	100		
*Deal counts are deduplicated by dealid, deals with funds from multiple fund types are counted once per type, so these shares do not sum to 100%.								

Note: Data are from PitchBook for US-based funds only. Statistics for dollars raised by funds are in millions of 2023 dollars and are measured at the fund level. Top table: Fund statistics are measured as of the capital commitment year (1985 to 2019). Bottom table: Fund statistics are measured as of the LBO deal year (1985 to 2019).
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Table A2: Private Equity and Venture Fund Assets Under Management in Billions (2023 Dollars)

	PitchBook						SEC Form PF	
	PE Dry Powder	PE Investment	PE AUM	VC Dry Powder	VC Investment	VC AUM	PE Gross Assets	VC Gross Assets
1997	\$172	\$8	\$180	\$53	\$9	\$62		
1998	\$277	\$49	\$326	\$61	\$31	\$92		
1999	\$326	\$132	\$457	\$91	\$120	\$212		
2000	\$374	\$201	\$575	\$131	\$176	\$307		
2001	\$364	\$199	\$563	\$153	\$118	\$271		
2002	\$345	\$211	\$556	\$141	\$94	\$235		
2003	\$299	\$270	\$569	\$124	\$102	\$226		
2004	\$289	\$332	\$622	\$112	\$123	\$235		
2005	\$318	\$405	\$723	\$111	\$144	\$255		
2006	\$460	\$519	\$979	\$114	\$170	\$285		
2007	\$502	\$662	\$1,164	\$113	\$197	\$310		
2008	\$484	\$606	\$1,090	\$109	\$184	\$293		
2009	\$477	\$704	\$1,181	\$107	\$198	\$305		
2010	\$427	\$820	\$1,247	\$102	\$220	\$322		
2011	\$418	\$860	\$1,278	\$97	\$249	\$346		
2012	\$411	\$890	\$1,301	\$91	\$255	\$345		
2013	\$465	\$905	\$1,371	\$88	\$293	\$381	\$2,396	\$39
2014	\$431	\$913	\$1,344	\$93	\$325	\$418	\$2,420	\$50
2015	\$547	\$906	\$1,453	\$112	\$349	\$461	\$2,636	\$70
2016	\$596	\$961	\$1,556	\$132	\$347	\$479	\$2,930	\$81
2017	\$694	\$1,049	\$1,743	\$136	\$375	\$512	\$3,363	\$100
2018	\$799	\$1,115	\$1,914	\$159	\$455	\$614	\$3,834	\$134
2019	\$871	\$1,322	\$2,193	\$166	\$546	\$712	\$4,443	\$171
2020	\$937	\$1,644	\$2,581	\$197	\$726	\$923	\$5,470	\$261
2021	\$1,007	\$2,265	\$3,271	\$260	\$1,161	\$1,421	\$7,333	\$378
2022	\$1,071	\$2,181	\$3,253	\$305	\$982	\$1,287	\$7,136	\$399
2023	\$1,056	\$2,354	\$3,410	\$322	\$909	\$1,231	\$7,402	\$400

*Note: Data are from the SEC Form PF (Gross Assets) for private equity and venture capital funds and PitchBook (Investments) for private equity and venture capital funds. AUM = Dry Powder + Investments.
Created with Datawrapper*

Table A3: Missing Deal Size Percentages by Deal Type and Time Period

Period	Public-to-PE	Private-to-PE	Secondary	VC-to-PE	All Deals
1985–89	10.5	70.8	66.7	80	62.5
1990–94	25.7	68.6	51.4	55	64.9
1995–99	20.9	69.5	63.3	73.4	66
2000–04	24.5	65.8	50.2	67.2	61.4
2005–09	22.5	75.6	61.1	69.7	70.9
2010–14	23.7	83.6	70.1	76.8	78.9
2015–19	28.3	90	75.4	82	85.9

Note: Cells report the percentage of deals with missing transaction size in PitchBook buyout data.

Created with Datawrapper

Table A4: Statistics for K-Fold Cross Validation of Deal Size Imputation Model

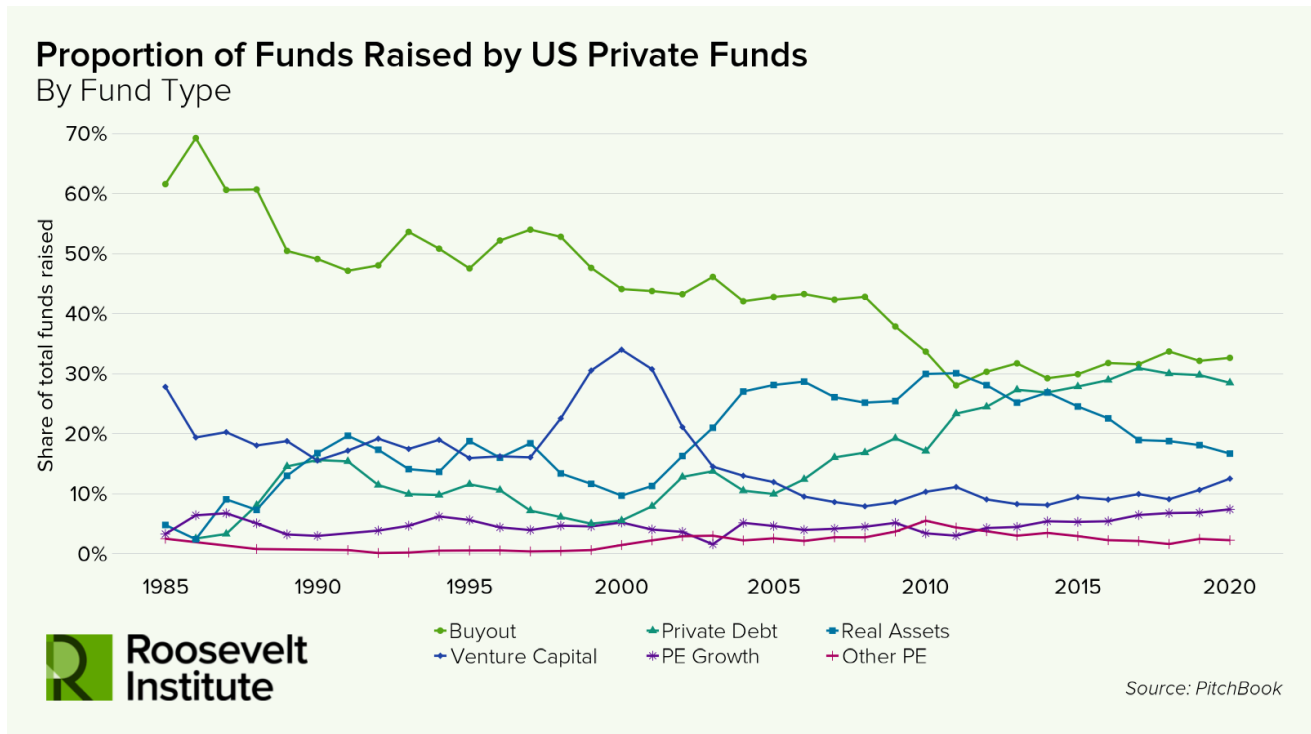
Panel A. Aggregate Deal-Size Totals					
Deal Type	Known Size N	Sum Predicted	Sum Actual	Predicted / Actual	
All deals	12,827	\$4.7T	\$6.0T	0.785	
Private-to-PE	7,909	\$1.2T	\$1.5T	0.783	
Public-to-PE	1,851	\$2.1T	\$2.8T	0.764	
Secondary	2,414	\$1.2T	\$1.5T	0.82	
VC-to-PE	653	\$0.1T	\$0.2T	0.824	
Panel B. Log-Scale Accuracy Metrics					
Deal Type	Log RMSE	Log MAE	Log Bias	Log Correlation	
All deals	1.473	1.121	-0.138	0.65	
Private-to-PE	1.502	1.158	-0.14	0.529	
Public-to-PE	1.601	1.19	-0.008	0.61	
Secondary	1.279	0.959	-0.23	0.619	
VC-to-PE	1.413	1.075	-0.136	0.59	
Panel C. Unlogged Accuracy Metrics					
Deal Type	Mean Error	Median Error	Dollar RMSE	Dollar MAE	Dollar Correlation
All deals	-\$100.6M	\$26.4M	\$1,676.5M	\$384.3M	0.419
Private-to-PE	-\$42.5M	\$20.6M	\$478.8M	\$167.2M	0.4
Public-to-PE	-\$353.0M	\$147.1M	\$4,040.3M	\$1,281.8M	0.354
Secondary	-\$112.1M	\$31.3M	\$1,252.3M	\$453.2M	0.369
VC-to-PE	-\$47.3M	\$31.3M	\$603.5M	\$215.5M	0.435

Note: Deal-size values are measured in millions of 2023 dollars. Aggregate sums are displayed in trillions.

Created with Datawrapper

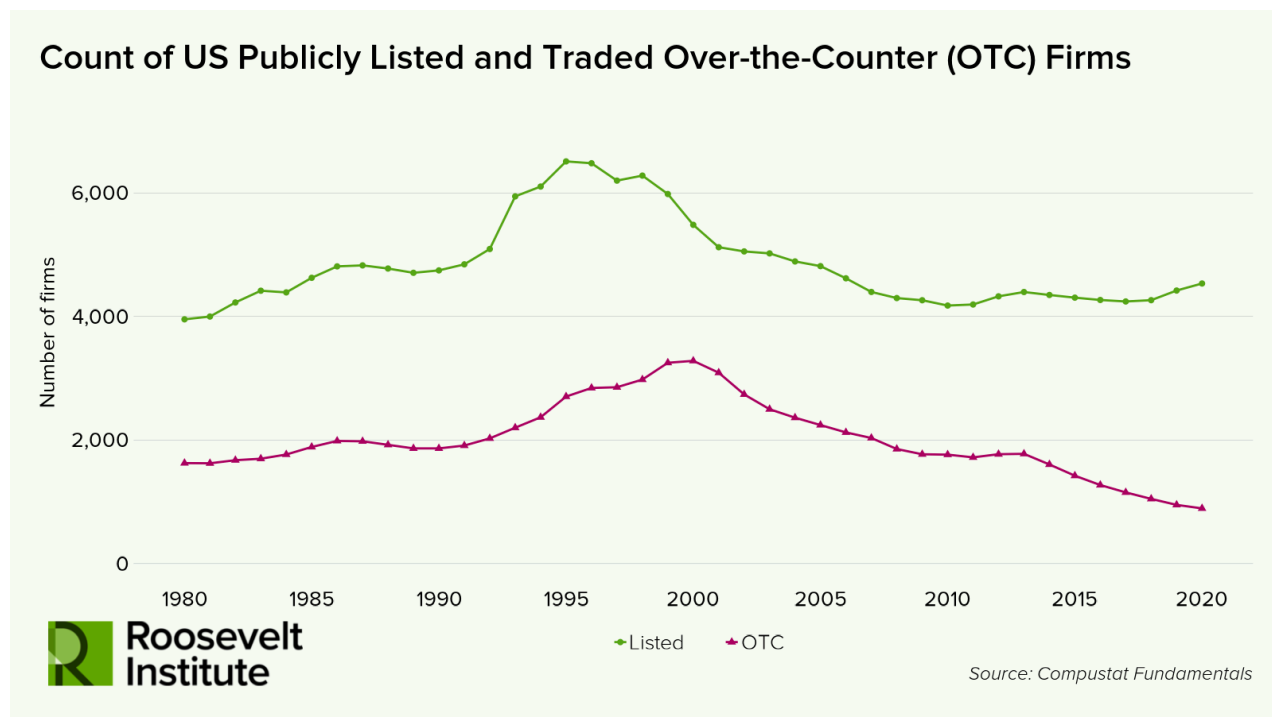


Figure A1



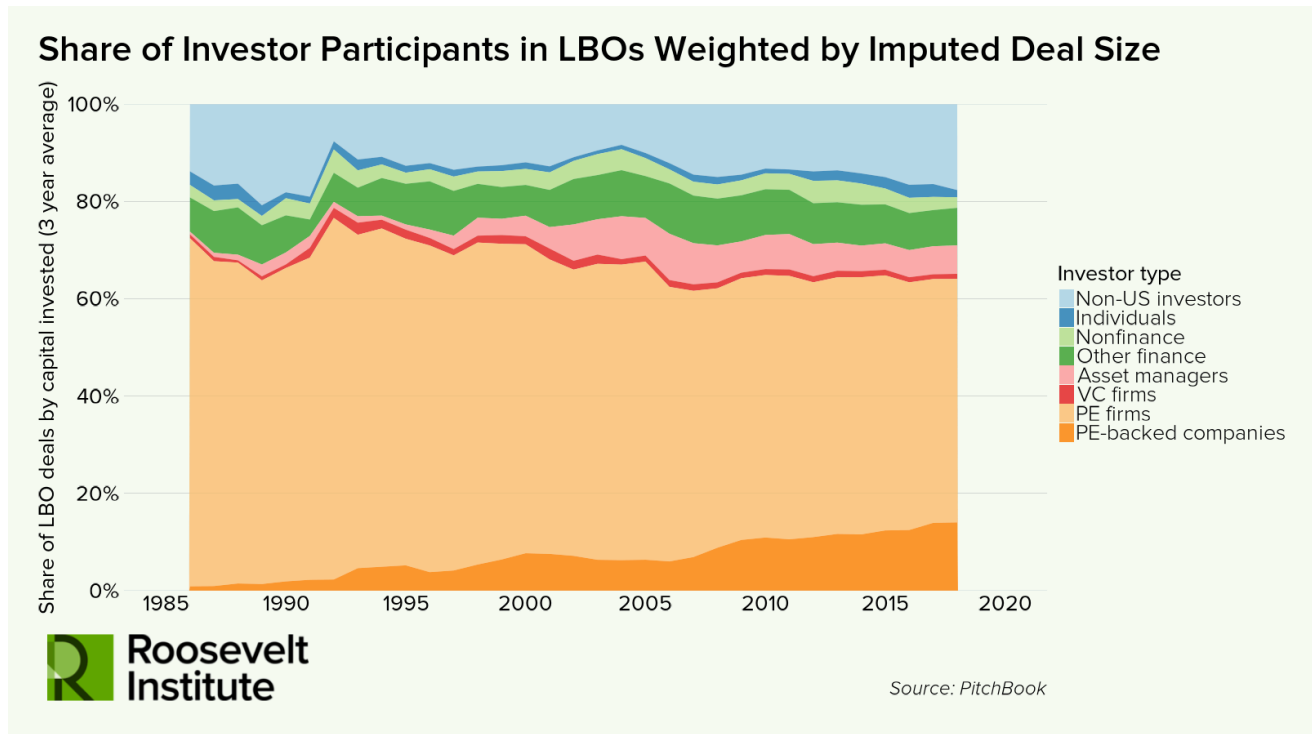
Note: Data are from PitchBook for US-based funds only. Rolling average is calculated as the mean of dollars raised per year of the year before, the current year, and the year after. Dollars raised are fund sizes attributed to the year in which the fund closed its commitment window. Real assets funds include real estate, infrastructure, and natural resource funds. Other PE funds include diversified PE and restructuring/turnaround funds. Hedge funds and funds of funds are excluded.

Figure A2



Note: “Listed” refers to firms listed on major stock exchanges. “OTC” refers to firms listed over the counter.

Figure A3

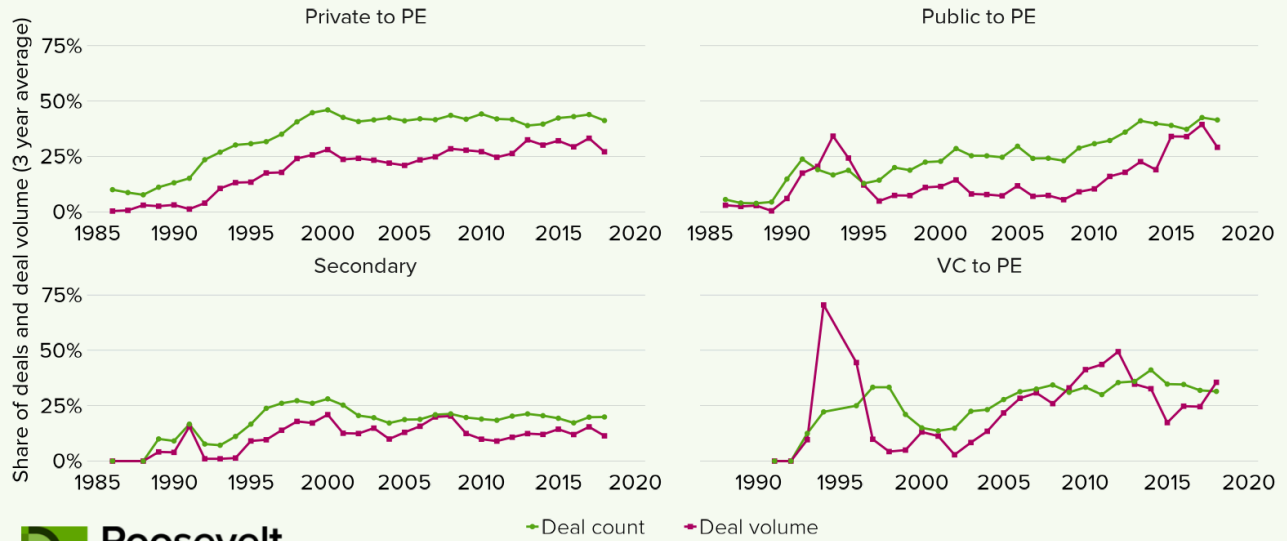


Note: “Other finance” includes investment banks, merchant banking, real estate, hedge, angel, impact, debt, infrastructure, and mezzanine funds as well as small business investment companies (SBICs) and special purpose acquisition companies (SPACs). “Asset managers” include mutual funds, funds of funds, and fundless sponsors. “Nonfinance” includes accelerators, incubators, corporate development firms, business development firms, corporate venture capital funds, holding companies, venture-backed companies, governments, and universities.

Figure A4

LBO deals only with known deal sizes

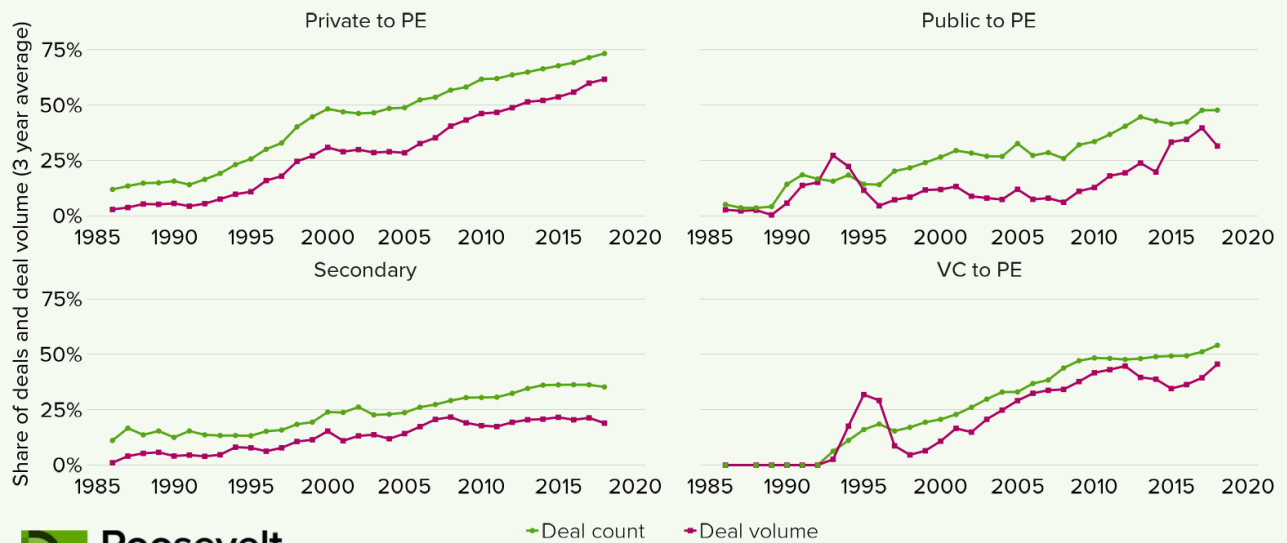
Add-on Buyout Shares of Deal Counts and Deal Volume by Deal Type



Source: PitchBook

All LBO deals (known and imputed deal sizes)

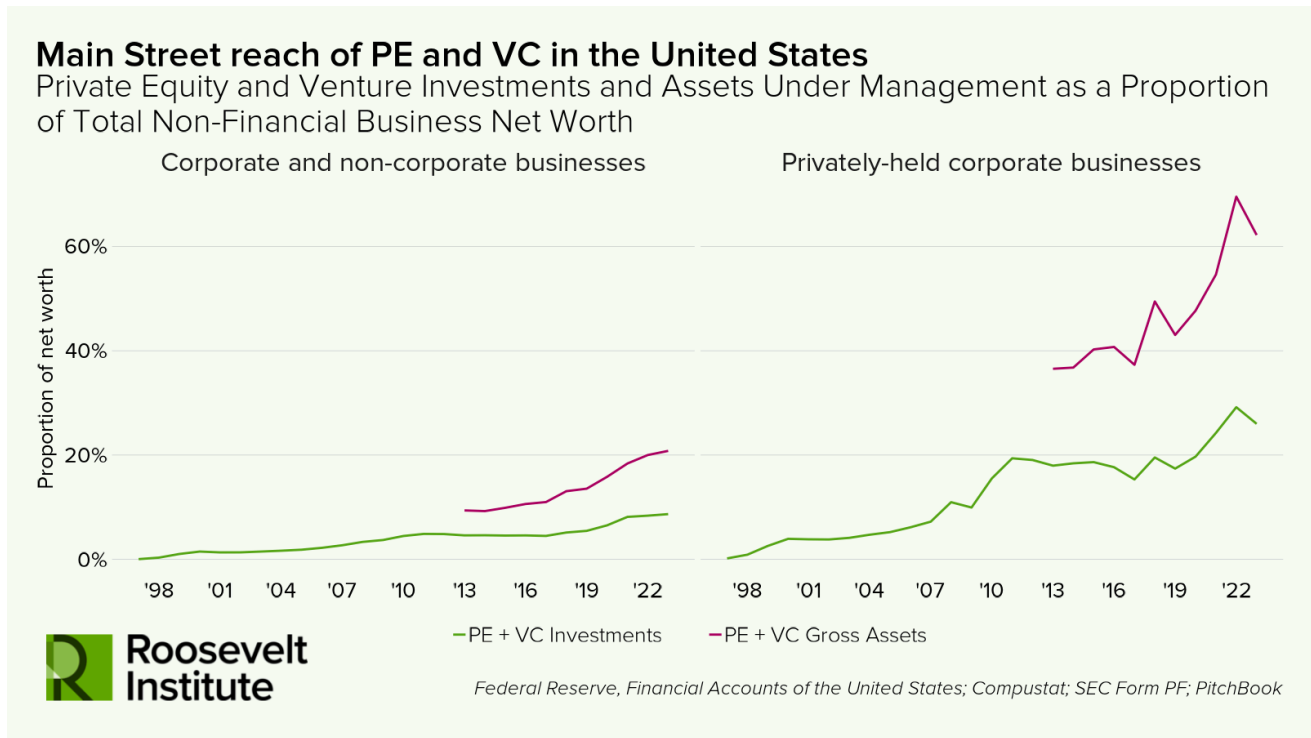
Add-on Buyout Shares of Deal Counts and Deal Volume by Deal Type



Source: PitchBook



Figure A5



Note: Data for the denominator come from the Federal Reserve's nonfinancial corporate net worth at historical cost (Table B.103), the Federal Reserve's nonfinancial noncorporate net worth (Table B.104), and Compustat's stockholders' equity for US publicly traded firms (Variable SEQ). Data for the green line numerators come from the SEC Form PF (Gross Assets) for private equity, and venture capital funds. Data for the magenta line numerators come from PitchBook (Investments or NAV) for US-based private equity and venture capital funds.



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