From Financial to Operational Engineering: Organizational Aspects

November 2021

Key Takeaways:

- The role of leverage in buyouts has diminished over time. Value creation relies largely or entirely on strategic and operational improvements of portfolio companies.
- As long as value creation was mainly predicated on financial engineering, it was critical for General Partners (GPs) to possess investment banking skills. Reflecting the shift from a cash-flow focused to a growth-oriented investment approach, GPs' skill set has become considerably more heterogenous.
- Additionally, many GPs deploy operational resources that support their deal teams from the pre- to the post-investment stage.
- The organization of these resources may take various forms. While some GPs employ operating partners that are part of their internal organization, others rely on a pool of external operating executives and advisors. In both cases, these resources are often former business leaders, typically from the C-Suite of major companies.
- A third model is an in-house consultancy, whose consultants frequently have gained experience in leading external consultancies.
- To shed light on the impact of employing additional operational resources on value creation, we use proprietary data from our *Chronograph* database.[1] This dataset allows us to attribute the performance of buyout funds to individual transactions.
- Additionally, we analyze a sample of particularly successful co-investments in terms of the organizational setting of operational engineering.
- Our research leads us to two main conclusions:
    - Deploying operational resources in the due diligence and investment process adds value. Buyout funds that support their deal teams with operating partners, external consultants or input from internal consultancies are found to outperform partnerships that rely entirely on deal teams.
    - The organizational form of operational engineering does not seem to matter much. In aggregate, the performance differential between funds employing different models is insignificant.

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[1] Chronograph uses disruptive technology to provide complete, timely and accurate access to underlying private equity investment data set in an easy to use web-based tool (chronograph.pe). In May 2019, AlpInvest led the Series A financing of Chronograph.

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01 Introduction

There is ample evidence that leveraged buyouts (LBOs) have outperformed public markets. At the fund level, Harris, Jenkinson and Kaplan (2016) found that in virtually every vintage year between 1986 and 2010 U.S. buyouts beat the S&P 500 as well as other standard public market indexes, net of fees and carry.[2] In a more recent study, Brown and Kaplan (2019) showed that this outperformance has persisted, rejecting claims that private and public returns have been converging in recent years.[3]

Excess returns at the fund level mirror outperformance at the portfolio company level.[4] As several studies show, this outperformance is attributable to the positive impact of LBOs on firm productivity.[5] While early buyouts in the 1980s have emphasized the disciplining effects of leverage, preventing management of portfolio companies from using free cash flow in a wasteful manner, since the 1990s General Partners (GPs) have increasingly focused on growth-enhancing strategic and operational measures to create value.

Consistent with GPs' increased emphasis on operational engineering, the private equity literature documents a significant shift in the relative importance of factors that create value in LBOs. While margin improvements and top-line growth have substantially gained in importance, deleveraging plays an increasingly smaller role. As this note discusses, the increased emphasis on strategic and operational measures has required a more heterogenous skill set at private equity firms. As long as value creation was largely predicated on financial engineering, deal partners often came from an investment banking and accounting background. Over time, however, private equity firms have substantially upgraded their

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[2] Harris, R, T. Jenkinson, and S. N. Kaplan (2016). "How Do Private Equity Investments Perform Compared to Public Equity?" *Journal of Investment Management* 14 (3), pp. 1 – 24.

[3] Brown, G., and S. N. Kaplan (2019). "Have Private Equity Returns Really Declined?" *Journal of Private Equity*. Fall 2019.

[4] While there is much less research on the investment returns of individual LBOs due to the lack of data, AlpInvest reports a capital-weighted gross MOIC of 2.24x and 2.11x for our North American and European portfolio companies that were acquired between 2004 and 2015 by buyout funds we had committed capital to.[4] Importantly, these LBOs generated on average excess returns of 8.0% and 11.9% compared with the S&P 500 and MSCI Europe indexes, respectively.

[5] One of the first studies on the performance of portfolio companies was undertaken by Kaplan (1989) who found LBOs and management buyouts were followed by significant increases in operating margins and cash flows, both in absolute terms and relative to the public companies operating in their industries. Importantly, such increases were sustained at least over the three- or four-year period covered by the study. These findings have been broadly confirmed in more recent academic research. For instance, in two large-sample studies focusing on U.S. buyouts from 1980 to 2011, Davis et al. (2014 and 2019) found that LBOs were associated with increases in productivity that were achieved mainly by exiting less productive establishments and entering more productive ones. Overall, they report a significant increase in total factor productivity in portfolio companies of buyout funds thanks to more effective resource reallocation. Most recently, a study published by Cohn et al. (2020) of 288 U.S. PE-backed companies using corporate tax return data for the years 1995-2009 finds both "significant post-buyout improvements in operating performance *and* rapid growth." Finally, on the European side, a recent study by Biesinger et al. (2020) of a large sample of small buyouts reports that "company operations and profitability improve in ways consistent with successful execution" of those plans. Biesinger, M., C. Bircan, & A. Ljungqvist, "Value Creation in Private Equity," European Bank for Reconstruction and Development, *Working Paper 242*, April 2020. Cohn, J., E. Hotchkiss & E. Towery (2020). "The Motives for Private Equity Buyouts of Private Firms: Evidence from U.S. Corporate Tax Returns," *Journal of Financial Economics.* Davis, S. J., J. C. Haltiwanger, K. Handley, J. Lerner, & J.Miranda (2014). "Private Equity, Jobs, and Productivity." American Economic Review 104 (12), 3459 – 90. Davis, S. J., J. C. Haltiwanger, K. Handley, J. Lerner, & J. Miranda (2019). "The Economic Effects of Private Equity Buyouts." National Bureau of Economic Research Working Paper 26371. Kaplan, S. N. (1989). "The Effects of Management Buyouts on Operating Performance and Value," *Journal of Financial Economics* 24 (2).

strategic and operational firepower. This has been achieved primarily by hiring investment professionals with experience in corporate management and consulting.

Moreover, an increasing number of private equity firms have added operational resources to their deal teams. This has taken various forms. While some GPs employ operating partners that are part of their internal organization, others rely on a pool of external senior advisors. In both cases, these resources are often former senior executives, typically from the C-Suite of major companies. A third model is an in-house consultancy, whose consultants have frequently gained experience in leading external consultancies. While some private equity teams have chosen hybrid models, all approaches have in common that they are designed to support the funds' deal partners in identifying and implementing measures to create value through operational improvements in portfolio companies.

Two important questions arise in this context:

- Have operating partners, external senior advisors and internal consultancies actually added value beyond what deal partners alone would have achieved?
- If so, which model has proved to be particularly impactful?

To address these questions, we use AlpInvest's proprietary *Chronograph* database, which allows us to attribute the performance of buyout funds to individual transactions. We limit our sample to buyouts that were made between 2004 and 2015. We selected this period because our database includes relatively few transactions that were undertaken earlier, which could raise concerns about their representativeness, and we believe a significant number of portfolio companies acquired after 2015 are still subject to potentially significant changes in valuations and performance. Thus defined, our sample includes 3,949 buyouts by 212 funds during this period. These partnerships are classified according to the main organizational form through which they have aimed to generate operational improvements in portfolio companies. Additionally, we analyze a sample of particularly successful co-investments ("homeruns") in terms of the organizational setting of operational engineering.[6]

Our main conclusions are:

- In our sample, there is a significant performance gap between funds that rely entirely on deal partners as opposed to those who employ additional resources.
- Value creation is not confined to any particular organizational form. The average performance of buyouts undertaken by private equity firms that rely on internal operating partners, external senior advisors or internal consultancies is indistinguishably small.

The rest of the paper is organized as follows: Section II reviews the role of leverage in buyouts as a disciplining mechanism and tax shield, allowing financial sponsors to play a meaningful role in the global M&A boom in the 1980s. Section III discusses the shifting emphasis on strategic and operational improvements in the 1990s, with the diminishing focus on cash flows opening investment opportunities in a wider range of industries. Section IV describes the various organizational forms private equity firms

[6] A "homerun" is defined as a co-investment that has returned a minimum gross Multiple of Invested Capital (MOIC) of 3.0x and/or a gross internal rate of return (IRR) of at least 30%. Our sample is comprised of 70 transactions that are fully realized, representing 46% of all realized co-investments in AlpInvest's co-investment portfolio as of June 30, 2020. **Past performance is not indicative of future results or a guarantee of future returns.** Gross returns do not reflect management fees or carried interest charged by AlpInvest or any other fund-level expenses that are borne by investors in a fund, which will reduce returns and, in the aggregate, are expected to be substantial. For more information, see AlpInvest Partners "Homeruns in Private Equity Co-Investments" June 2020 (available upon request).

have chosen to enhance their operational capabilities. Section V examines the performance of a large sample of buyouts backed by funds that have chosen varying forms of support for their deal teams. Section VI summarizes and concludes.

02 The Buyout Boom of the 1980s and the Use of Leverage

In the late 1980s, hostile takeovers gained substantial momentum. These transactions were highly leveraged, a new phenomenon that was fueled by the emergence of the high-yield bond market. While most takeovers were undertaken by strategic buyers, some transactions involved leveraged buyouts (LBOs) by financial sponsors, with an increasing number of private equity firms being founded during this period.

The advent of the LBO was applauded by some leading academics as a tool to address the principle-agent problem in managing companies. In a seminal paper, Michael Jensen of Harvard Business School documented the tendency of managers of companies in mature industries to reduce their efficiency and value by hoarding excess cash and capital — or, with even worse consequences, reinvesting it in low-return businesses, including diversifying acquisitions— instead of returning it to shareholders.[7] In Jensen's view, the highly leveraged acquisitions, LBOs, and other leveraged recaps of the 1980s represented solutions to this "free cash flow" problem by effectively converting the smaller, "discretionary" dividend payments paid by most public companies into much larger, *contractual* payments of interest and principal. Pointing to the standard capital structure in the LBOs of the 1980s, Jensen noted that paying a 40% premium for a public company and then leveraging its equity 9 to 1 had the effect of making the cost of capital "both explicit and contractually binding."

Jensen viewed the heavy use of debt financing as providing what amounts to an automatic internal monitoring-and-control system. That is, if problems were developing, top management would be forced by the pressure of the debt service to intervene quickly and decisively. By contrast, in a largely equity-financed company, management could allow much of the equity cushion to be eaten away before taking the necessary corrective action. What's more, the fact that the typical LBO fund had a fixed life of typically ten years effectively forced the sponsors—the general partners, or GPs—to either sell or refinance their portfolio companies and return the capital to their investors—the limited partners, or LPs—an important governance feature in private equity investing.

As the buyout boom continued to gather steam, Jensen hailed the rise of "LBO partnerships" as a "new organizational form" — one that, in acquiring and operating companies across a broad range of industries, was competing directly with, and threatening to supplant, public conglomerates.[8] In his view, such LBO partnerships were doing a better job of providing the same coordination and monitoring function performed by corporate headquarters staffs numbering, in some cases, in the thousands. As

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[7] Jensen, Michael (1986). "The Agency Costs of Free Cash Flow: Corporate Finance and Takeovers." American Economic Review 76 (2), pp. 323 – 329.
[8] Jensen, Michael (1989). "The Eclipse of the Public Corporation." Harvard Business Review.

Jensen saw it, "the LBO succeeded by substituting incentives held out by compensation and ownership plans for the direct monitoring and often centralized decision-making of the typical corporate bureaucracy." Since a portfolio company had to be sold to or refinanced by some outside party at some point during the next five to seven years, Jensen argued that operating managers should have strong incentives to devote the value-maximizing level of corporate capital to expenditures with longer-run payoffs such as advertising and plant maintenance instead of using free cash flow for unproductive purposes. Regardless of how an LBO is eventually cashed out—whether by means of an IPO, sale to another firm, or a recapitalization involving another private investment group or management team—Jensen claimed that the greater the level of productive investment undertaken by managers, the higher the value of their shares when traded in.

03 From Leverage to Strategic and Operational Improvements

Much has changed since Jensen identified the main features of LBOs as a preferred "model of corporate governance." Importantly, financial structures in buyout transactions have been altered significantly, with equity contributions accounting for an increasingly large share. While it was not uncommon for LBOs in the late 1980s to be financed with just 10 % equity (sometimes even less), this percentage has risen to around 40% - 45% in recent years (Figure 1).[9] Thus, leverage has played a diminishing role over time in financial-sponsor transactions, with deleveraging contributing increasingly less in the value creation process.[10]

Carl Ferenbach, cofounder of Berkshire Partners, has described this shift in the investment focus as follows:

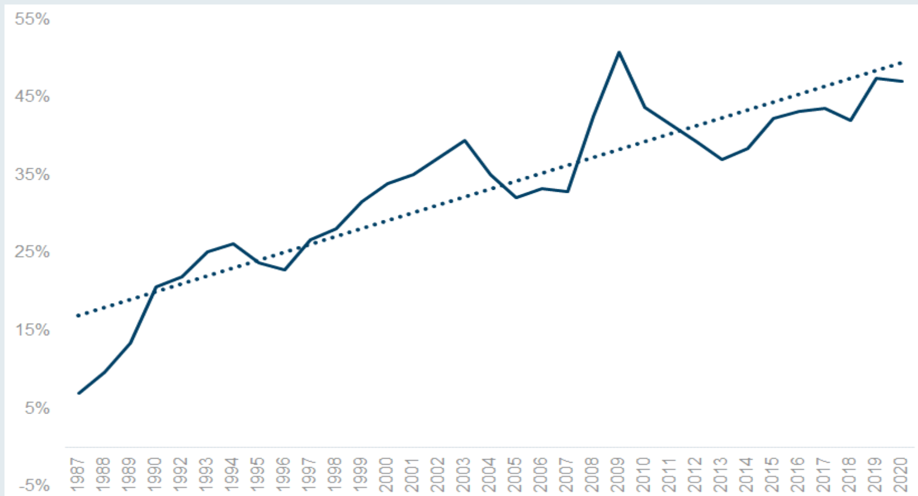
> (In the 1980s), *"we viewed most of the change in value as happening on the day you closed the deal; we created value mainly by changing the financial structure and managers' incentives. There wasn't much growth in those companies. It was mainly about improving the existing operations of mature,*

[9] In individual transactions in the 1980s, leverage played an even larger role than depicted in Figure 1. One of the best documented cases from the period is the LBO of RJR Nabisco, one of the largest transactions in history. In this transaction, equity contributed to only around 5% of the $26 billion buyout. For details, see George P. Baker & George D. Smith (1998), The New Financial Capitalists. Cambridge University Press.

[10] Apart from declining role of leverage in LBOs, there have been massive changes in the market structure of private equity. The private equity market has become substantially more competitive, with the number of private equity firms having increased from less than 100 in the late 1980s to several thousand today. The private equity model has been exported globally, several private equity firms have morphed into publicly listed alternative asset managers, operating across different asset classes, and some have been listed in public markets.

fundamentally sound businesses that produce a lot of cash flow. But somewhere in the '90s, we and most of the PE industry all started to move toward growth as part of the objective."[11]

Figure 1. Equity Contributions in Leveraged Buyouts



Source: S&P LCD, accessed 10/3/21. Trends may not continue.

An important catalyst of this shift was the recession of the early 1990s, which led to a significant rise in defaults and higher risk premiums in the leveraged finance markets. With the buyout boom of the late 1980s coming to an abrupt halt, two adjustments in LBO deals were particularly important. The first was a reduction of leverage ratios and other increases in financial flexibility. The second, and perhaps even more important, adjustment was the PE firms' growing recognition of the value of operational engineering, and their efforts to develop or acquire this capability.

The development of managerial experience and expertise, together with the reduction in leverage, also gave PE firms greater ability to realize growth opportunities in their portfolio companies as well as performing their traditional cost-cutting function. As Ferenbach of Berkshire Partners put it

> ... "*in the '90s, we and most of the PE industry all started to move toward growth as part of the objective... And once we started to think about growth instead of just cash flow, we then had to think much more about strategy and management. We now had a business plan—one that included growth as well as efficiency—that we had to deliver on.*[12]

[11] Ferenbach, Carl (2011). "Morgan Stanley Roundtable on Private Equity," *Journal of Applied Corporate Finance*, Vol. 23 No. 4 (Fall 2011).

[12] Ferenbach, Carl (2011). "Morgan Stanley Roundtable on Private Equity," *Journal of Applied Corporate Finance*, Vol. 23 No. 4 (Fall 2011).

Structural factors have accentuated the shift from financial engineering to a much greater focus on operational and strategic improvements. One is the competitive landscape of the private equity industry. While there was a small number of buyout firms in the 1970s and 1980s, today there are thousands of GPs operating worldwide.[13] Further, while many deals were proprietary in the early years of the private equity industry, in the past years the majority of assets, especially larger companies, have been sold by auction. As a result, it has become critically important for GPs to develop a differentiated investment approach rather than relying on financial engineering, a strategy that can easily be copied.[14]

We believe that this new emphasis on growth, while reducing the amount of leverage in PE's portfolio companies, has opened the door to entire new industries, whose cash flows are less predictable but where faster earnings growth can be attained in expanding markets through strategic and operational improvements. In pursuing such opportunities, GPs have put substantial emphasis on strategic due diligence, analyzing the demand dynamics for the goods and services offered by the investment target; the company's customers; the competitive landscape in which the investment target operates; the broader business environment (e.g., regulatory framework and technological trends); and the microeconomic drivers of generating profits.[15] This assessment guides GPs' investment decisions and helps them identify and design necessary operational and strategic measures. Implementing these measures require appropriate governance structures, which Kaplan and Strömberg have labeled "governance engineering."[16] According to a recent survey of U.S. private equity firms, such improvements are targeted through a host of measures. More specifically, GPs are reported to

- provide strong equity incentives to their management teams and believe those incentives are very important;
- regularly replace top management, both before and after they invest;
- structure smaller boards of directors with a mix of insiders, private equity investors, and outsiders;
- place heavy emphasis on adding value to their portfolio companies, both before and after they invest. The sources of that added value, in order of importance, are identified as increasing revenue, improving incentives and governance, facilitating a high-value exit or sale, making additional acquisitions, replacing management, and reducing costs;
- redefine or change the portfolio company's strategy/business model; and
- commit meaningful resources to add value, using a considerable variety of different ways and approaches. [17]

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[13] According to Preqin, the global number of private equity firms operating in the buyout space was 5,915 at the beginning of October 2021. Of these, 2,684 firms are based in the United States. While 1,429 European buyout houses are identified, the number of Asian firms is reported to have increased to 1,215, with the remainder operating in the rest of the world. Preqin, accessed 10/12/21.

[14] Gadiesh, Orit & Hugh MacArthur (2008). "Lessons from Private Equity any Company Can Use. Harvard Business Press. P. 27.

[15] Gadiesh, Orit & Hugh MacArthur (2008). "Lessons from Private Equity any Company Can Use. Harvard Business Press. P. 28-29.

[16] Kaplan, Steven N. & Per Strömberg (2009). "Leveraged Buyouts and Private Equity." Journal of Economic Perspectives 23 (1), 121 – 146.

[17] Kaplan, Steven N., Paul Gompers & Vladimir Mukharlyamov (2016). "What Do PE Firms Say They Do?" Journal of Financial Economics 121 (3).

Overall, the survey finds that GPs put significantly more weight on the business than on the management team.[18] This finding is important for two reasons. First, it is highly consistent with the work of Kaplan, Sensoy, and Strömberg (2009) that shows that the business strategies of firms remain far more stable - and hence are more important - than the stability of management.[19] Second, the importance of the ability to add value suggests that today's GPs take operational engineering and adding value seriously. This also suggests that different private equity firms are likely to target and value investments differently, compared with an environment in which leverage is the key value driver.

How profound the transformation of the private equity model has been, is documented in a study by the Boston Consulting Group (BCG), which was published in 2016. Examining a sample of LBOs over three decades, this research finds that the optimization of capital structures in LBOs and the subsequent deleveraging during the holding period of a portfolio company contributed more than 50% to the entire value creation in deals in the 1980s. This ratio halved in the 2000s and fell further in more recent years as the use of leverage continued to fall (Figure 2). At the same time, operational improvements have become increasingly important. While BCG's published research does not distinguish between the contributions from top-line growth versus margin expansion, combined these factors are found to have contributed almost half of the value creation in LBOs in 2012, a near-tripling from the 1980s.[20] The rest is explained by multiple expansion, whose role has increased over time, albeit to a significantly lesser extent compared with operational improvements.

BCG's sample is limited to U.S. and European LBOs. Asia's private equity market is comparatively younger, and leverage has traditionally played a much lesser role in buyout transactions. In a recent survey conducted by Bain & Company, Asian GPs expected deleveraging to contribute only 4% to value creation in deals that were undertaken in 2020, essentially unchanged from transactions five years earlier (Figure 3). Looking five years ahead, survey respondents expected deleveraging to continue to play only a marginal role as value driver. By contrast, top-line growth and margin improvements are viewed as the main value drivers in Asian buyouts. In fact, their contribution is expected to increase even more over the next few years as the potential for multiple expansion is seen as diminishing in a highly competitive environment where GPs pay historically high entry multiples.

To be sure, the operational and strategic improvements that drive value creation in buyouts are found to be persistent. For instance, one study on buyout-backed companies that were exited through an initial public offering ("reverse buyouts") finds positive industry-adjusted stock performance.[21] Another study shows that companies that were previously owned by financial sponsors remain innovative as evidenced by post-buyout patenting. What's more, patents filed post-buyout appear more economically important (as measured by subsequent citations) than those filed pre-buyout, as buyout-backed companies focus their innovation activities in a few core areas.[22]

[18] Kaplan, S. N., Paul Gompers, & V. Mukharlyamov (2016). "What Do PE Firms Say They Do?" Journal of Financial Economics 121 (3).

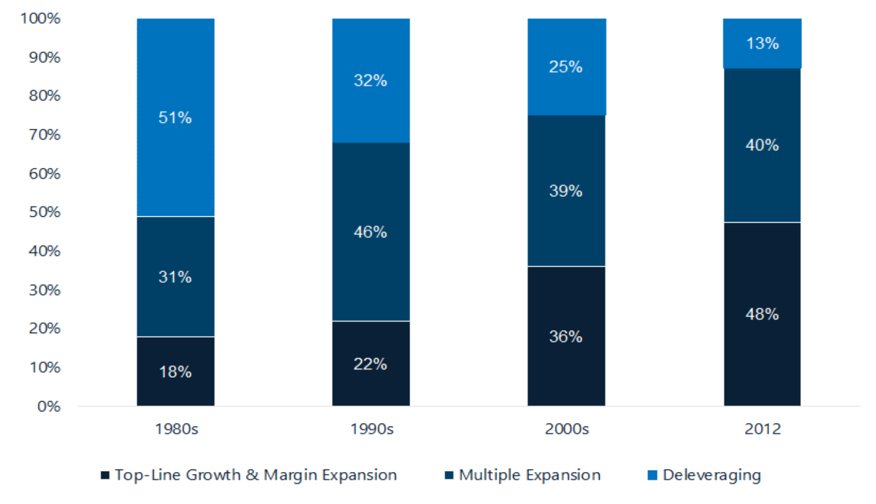
[19] Kaplan, S. N., B. A. Sensoy, & P. Strömberg (2009). "Should Investors Bet on the Jockey or the Horse? Evidence from the Evolution of Firms from Early Business Plans to Public Companies." Journal of Finance 64 (1), pp. 75 – 115.

[20] The growing importance of operating performance versus measures aiming to optimize the capital structure of portfolio companies has already been documented in earlier studies cited, for example, in Robert Pozen (2007). "If Private Equity Sized Up Your Business." Harvard Business Review.

[21] Cao, Jerry X. & Josh Lerner (2009). "The Performance of Reverse Leveraged Buyouts." Journal of Financial Economics 91 (2), 139 – 157.

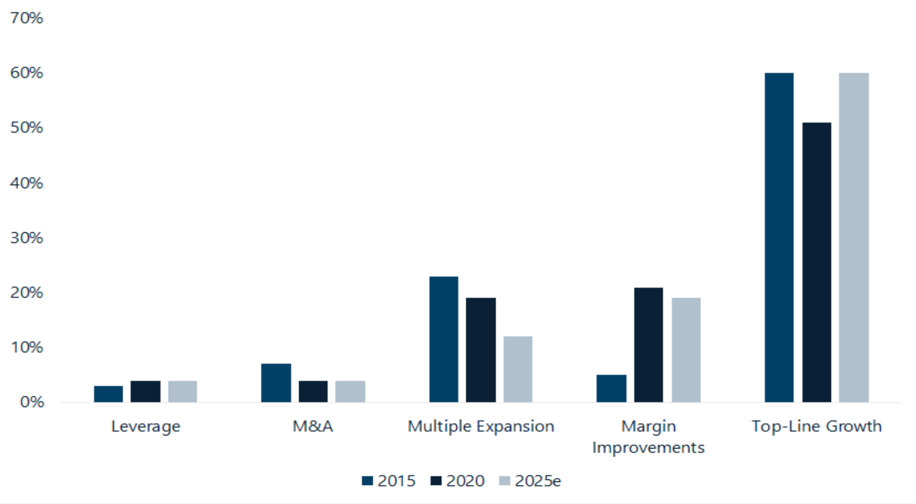
[22] Lerner, Josh, Morten Sorensen & Per Strömberg (2011). "Private Equity and Long Run Investment: The Case of Innovation." Journal of Finance 66 (2), 445 – 477.

Figure 2. Contribution to Value Creation in Private Equity Transactions



Source: Boston Consulting Group (2016). The Power of Buy and Build. Trends may not continue.

Figure 3. Percentage of Asia-Pacific GPs This Factor is the Most Important Source of Returns for Exited Deals



Source: Bain & Company. Asia-Pacific Private Equity Report 2021. Trends may not continue.

Finally, reviewing AlpInvest's own co-investment portfolio of realized transactions, we observe a similar pattern of value creation and a growing role of operational measures over time at the expense of financial measures. However, when we limit our sample to our "homerun" investments, two important differences emerge. First, with AlpInvest's co-investment program having started in the early 2000s, we estimate that revenue growth and margin improvements have contributed on average 0.9x and 0.7x, respectively, to the overall performance of the homerun sample. This implies that these two sources accounted for 60% of value creation, far more than what BCG reports for LBOs in the 2000s and 2012.

Second, while BCG does find a declining role of deleveraging in LBOs over time, in our homerun sample deleveraging does not contribute to value creation (akin to the Bain survey results, which, however, are confined to Asia). Instead, we find that on average debt is unchanged over the holding period, as cash flows are used for funding the growth of the portfolio company. Growth may be organic, in the sense that companies expand their operations through appropriate strategies. Growth may also be attained inorganically through acquisitions. Both approaches, which are not mutually exclusive, aim at gaining market share, with company growth usually fueled by increased demand in growing markets.

Importantly, rapid growth driven by improved company fundamentals has been rewarded by the market. In our home run sample, we find on average a multiple increase of 1.1x, implying that around 40% of overall value creation is attributable to this factor. Furthermore, we analyzed the extent to which the multiple expansion was driven by market developments – by looking at comparable listed peers – as opposed to the outperformance of individual portfolio companies. This analysis shows that about 60% of the multiple increase is driven by the market and the remainder can be regarded as reward for the company's relative outperformance. Overall, our analysis suggests that (above-market) top-line growth is the key factor responsible for the outperformance in the co-investment homeruns. Including the indirect contribution to margins – via operational leverage – and the above-market multiple increase, top-line growth alone drives on average nearly two-thirds of the value creation.

04 Organizing Operational Excellence

As long as value creation was largely predicated on the disciplining effects of debt and the tax shield leverage may provide, deals were generally led by deal partners with a background in finance. However, with the role of financial engineering having diminished over time, GPs' skill sets have become significantly more heterogenous, with private equity firms increasingly hiring ex-management consultants and those with non-financial functional experience gained in companies (e.g., manufacturing, sales & marketing, data analysis, procurement, HR).[23] This industry-wide trend has been accompanied by the growing importance of sector-specialist funds. Consistent with their sector focus, these funds have expanded their knowledge base by hiring investment professionals with specific experience in sectors, such as information technology, healthcare or energy.

[23] Acharya, Viral, Oliver F. Gottschalg, Moritz Hahn, & Conor Kehoe (2012). "Corporate Governance and Value Creation: Evidence from Private Equity," *Review of Financial Studies* 26, pp. 368 – 402.

Apart from building a pool of deal team members with more heterogenous skills and experience, many private equity firms have developed additional operational resources that are accessible for deal teams. Three different organizational forms can be distinguished (Table 1).

Table 1. Alternative Models of Providing Operational Resources

	Industry Expert/ Operating Partner Model	Functional Model	Generalist Model
Profile of Operating Resources	• Former senior executives, typically CEOs/CFOs • High-level general managers • Serving as operating partners	• Former senior executives, consultants, accountants, with deep sector-specific expertise, often in a functional area, such as procurement, sales & marketing, or manufacturing	• Former consultants, often complemented with a few years of industry expertise
Description	• As senior executives with deep experience in the industries targeted by the private equity firm, they bring in network and industry and management expertise. • They provide high-level strategic advice and generally sit on the board.	• They belong to a separate pool of resources, on which the deal team/portfolio management can draw when needed for specific functional skills • Generally, they are not attached to one portfolio company but are deployed across multiple companies when there is a need for certain functional expertise.	• They sit on-site alongside with management and develop a long-term relationship with management over the holding period. • Their role is to lead value creation plan initiatives, support and coach management, bring in external expertise and oversee implementation programs. • They are assigned to one company at a time.

Source: Hemptinne, C. & V. Hoflack. The Value of In-House Operations Teams of Private Equity Firms. INSEAD, 2009.

One approach is the "*Industry Expert/Operating Partner" model*. Operating partners are usually well-known business leaders (typically CEOs, COOs or CFOs), functioning as either generalists or specialists, and have established track records of building shareholder value.[24] Frequently, operating partners also come from a consulting background, with significant experience gained at leading firms such as Bain, BCG or McKinsey. Given their substantial deal experience in general or more specifically in the private

[24] Two prominent examples are Lou Gerstner, the former chief executive officer of RJR and IBM, who served as Chairman of The Carlyle Group between 2003 and 2008; and Jack Welch, the former chief executive officer of GE, who was affiliated with Clayton, Dubilier & Rice.

equity target industries, operating partners typically focus on strategic planning, commercial growth, operational efficiency and financial controls.[25]

The role of an operating partner can span the full investment cycle, from the pre-investment due diligence phase to post-investment integration to a liquidity event or full exit. If the fund wins the deal, operating partners can be installed as Chair of the portfolio company to provide a direct link with the fund on a day-to-day basis.[26] Leveraging their analytical and industry experience to solve problems facing portfolio companies operating partners should be in a better position to develop strategies and leadership teams than a deal-oriented partner alone. One of the first adopters of the "Operating Partner" model is Clayton, Dubilier and Rice (CD&R). Founded in 1978, CD&R is widely recognized as a private equity firm pioneering an investment approach targeting growth through operational improvements and relying heavily on the deep industry knowledge of its operating partners.[27]

A related approach is known as the *Functional Model*. This approach also focuses on specific sectors and frequently on functional qualities. These qualities are made available when needed by the deal teams. However, unlike in the industry expert model where operating partners are usually employed by the private equity firm, in the functional model, operational resources are not on the private equity firm's payroll but are brought in as consultants on a retainer basis. Senior advisors and operating executives have generally held very senior positions in their fields – like business leaders that are hired by private equity firms as Operating Partners. For instance, the Carlyle Group lists 27 seasoned operating executives who are paid consultants and are not employees of the firm. With the majority of them having led Fortune 500 companies, these individuals have deep sector-specific knowledge and extensive operating experience.[28]

The *Generalist Model*, finally, is predicated on in-house consulting services. In-house consultants, many of which have previously worked for leading external consultancies, such as McKinsey, BCG or Bain Capital, help develop value creation plans and work closely with the management of portfolio companies on implementing these plans. Under the generalist model, it is especially common to set up a program office, which governs the blueprint and ensures that each initiative delivers value on time. Composed of cross-functional professionals, the program office reports to senior management on a weekly or bi-weekly basis to ensure that things are on track and to flag any problems or key decisions that need to be made.[29] Prime examples of the generalist model are KKR ("KKR Capstone"), Vista Equity Partners ("Vista Consulting Group") and L Catterton ("Catterton Vault"). However, while Capstone and Vista Consulting are integral parts of their respective parent companies, Catterton

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[25] Additionally, some private equity firms have established a shared services function that is designed to assist their portfolio companies in areas such as procurement, employee benefits, and various risk exposures to exploit synergies across the portfolio and hence generate cost savings.

[26] Jenkinson et al. note that operating partners are usually be paid by the portfolio companies during their period of involvement. Alternatively, fees for their services may be charged by the fund to the company. Equity incentives can be provided at the portfolio company level, which can reduce the share of the carried interest on the fund required for such operating partners. Thus, their incentives become more 'deal-by-deal'. Jenkinson, Tim, Hyeik Kim & Michael Weisbach (2021). "Buyouts: A Primer." Draft. September 2021.

[27] The Economist (2013). "Clayton, Dubilier & Rice: Engineers of a Different Kind." June 22, 2013. Lerner, Josh, Abijit Tagade, and Terrence Shu (2018). Clayton, Dubilier & Rice at 40. Harvard Business School Case Study. September 18, 2018.

[28] For instance, this roster currently includes Ian Read, former Pfizer Chairman and CEO; and Patrick Doyle, former Domino's Pizza CEO. The Carlyle Group, https://www.carlyle.com/our-people#operating-executives. Accessed 11/1/21.

[29] Gadiesh, Orit & Hugh MacArthur (2008). "Lessons from Private Equity any Company Can Use. Harvard Business Press. P. 61.

Portfolio Operations (mainly ex-McKinsey consultants) is organized as an external consultancy (*Vault Co*) working exclusively for Catterton.[30]

Each model has its pros and cons. While former senior executives can provide highly relevant strategic and operational insights, this approach may create governance risk between the role of these industry experts serving as operating partners and portfolio company CEOs. In this model, it is critically important to clearly define the responsibilities of the CEO and the operating partner. As far as the functional model is concerned, one of its key advantages is that expertise in certain functional capabilities (e.g., HR, lean manufacturing, IT, pricing, procurement, working capital management) can be easily transferred from one company to another. This is particularly valuable for larger private equity firms with a significant number of portfolio companies. On the flipside, functional experts may not have an integrated vision of a portfolio company that is needed to exploit the full value potential. However, this potential drawback can be mitigated by putting in place a strong board with broad responsibilities.

Finally, in the generalist model, in-house consultants serving as operating partners are typically involved from the pre-investment phase to a liquidity event or the final exit. However, one drawback may be that in-house consultants may get too involved in the day-to-day operations of a portfolio company. Further, some operating professionals who are delegated to a portfolio company on a full-time basis may be relatively junior and lack the strategic insights that are necessary to maximize the value of an investment. Finally, there is concern that in-house consulting teams that are assigned to a portfolio company for the entire holding period may quickly lose knowledge of best practices. However, such concerns may be addressed by rotating in-house consultants more quickly, which would have the additional benefit of ensuring an appropriate degree of objectivity, putting the GP's interests first. As is the case in the functional model, additional checks and balances can be provided by a strong board.

The various models are not necessarily mutually exclusive. For instance, some firms employ operating partners, while maintaining an external roster of senior operating executives that can be brought in as paid consultants in certain situations. Similarly, operating partners or external consultants may further enhance the capabilities of in-house consultancies in the valuation creation process. To be sure, some private equity firms have gone even further. A significant number of GPs utilize a non-LP advisory board or have established a CEO Council. Additionally, many private equity firms hire strategic consultants to help with operating plans.[31] These consultants may be generalists, such as Bain, BCG, or McKinsey, or specialists like turnaround experts Alix Partners and Alvarez & Marsal.[32]

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[30] For more details on Vault Co and the background of their consultants, see https://www.lcatterton.com

[31] Kaplan, Steven N., Paul Gompers, Vladimir Mukharlyamov (2016). "What Do PE Firms Say They Do?" Journal of Financial Economics 121 (3). Table 31.

[32] It is important to note that captive consulting groups and third-party consultants differ in terms of disclosure requirements. In a settled order finding issued on April 22, 2020, the U.S. Securities and Exchange Commission (SEC) found that a private equity fund advisor failed to adequately disclose that costs relating to an internal "Operations Group" would be charged to the portfolio companies of the advisor's fund. private equity fund adviser failed to adequately disclose that costs relating to an internal "Operations Group" would be charged to the portfolio companies of the adviser's fund. While the order provides several facts that distinguishes the "in-house" Operations Group from third-party consultant arrangements – e.g., that it serviced the advisor's entire portfolio as opposed to individual companies – it does not address third-party consultant arrangements. Gibson Dunn interpret this lack as suggesting that external arrangements are viewed as more transparent and hence may receive somewhat less scrutiny. Gibson Dunn (2020). "Operating Partners and/or Captive Consultants: Recent SEC Action and Six Takeaways. April 30, 2020. https://www.gibsondunn.com/operating-partners-and-or-captive-consultants-recent-sec-action-and-six-takeaways/. Accessed 10/10/21.

Finally, several private equity firms have established investment resources in areas such as talent, digital, IT, procurement, ESG and DEI and government affairs. These resources are deployed across the portfolio of companies to exploit synergies and help drive transformative growth in tandem with operating partners, external consultants and internal consultancies. Similarly, portfolio companies, especially those backed by larger private equity firms, often have access to capital markets professionals that are available to address funding needs and help optimize capital structures.

Table 2. Percentage of Deals that Each of the Following Groups Actively Participates in Identifying Pre- and Post-Deal Value

	Pre-Investment				Post-Investment			
			AUM				AUM	
	Mean	Median	Low	High	Mean	Median	Low	High
Deal Team	97.7%	100%	96.9%	98.4%	93.3%	100%	90.6%	95.9%
Operating Partners	45.3%	40.5%	44.9%	45.7%	51.1%	50.0%	46.8%	55.1%
Outside Consultants	36.8%	26.5%	27.9%	45.1%	27.1%	21.0%	22.0%	31.9%
Other	7.2%	0.0%	8.9%	5.5%	8.6%	0.0%	13.0%	4.3%

Source: Kaplan, Steven N., Paul Gompers, Vladimir Mukharlyamov (2016). "What Do PE Firms Say They Do?" Journal of Financial Economics 121 (3). Tables 24 & 26.

Regardless of their particular organizational approach, most private equity firms have put in place substantial resources to enhance their capabilities to create value at their portfolio companies through operational improvements. In the afore-mentioned survey of U.S. private equity firms, GPs were asked who in their organization is involved in identifying the (pre-investment) sources of value creation. Unsurprisingly, deal team members—i.e., the financial partners—are involved in virtually every deal. Perhaps the more interesting result is that operating partners—i.e., those primarily with operating rather than financial experience—are involved in identifying value sources in 45% of the deals (Table 2). In addition to relying on operating partners, GPs employ outside consultants in almost 37% of their deals. These consultants may be from external consulting firms or hired from a roster of former senior executives that is maintained by the private equity firm. Smaller private equity firms are found to be less likely to engage outside consultants in their transactions. Post-investment, the participants are similar to those involved pre-investment. Deal team members are involved in virtually every deal. Operating partners are involved in identifying value sources in 51% of the deals, slightly higher than the 45% pre-deal, while consultants are involved in 27%, somewhat less than the 37% of pre-deal.[33]

[33] Interestingly, there is significant variance in the size and composition of operating groups across private equity firms. According to research by McKinsey, there is virtually no correlation between operating group team size and fund size as measured by assets under management (AUM) and fund number. Across the surveyed firms, one-third of respondents have five or fewer operating group members on their internal teams, and just 37 percent have more than ten professionals.

Further (not reported in Table 2), 38% of survey respondents utilize a non-LP advisory board, while 48% say that they have created a group of senior advisors or a CEO Council. Finally, 32% of private equity firms covered by the survey hire strategic consultants to help with operating plans.[34]

05 Organizational Approaches & Performance

While there is ample research on the importance of operational and strategic improvements as value drivers in leveraged buyouts, there is virtually no evidence as to which organizational form might be particularly conducive to attaining these improvements. The aforementioned GP survey by Kaplan, Gompers and Mukharlyamov (2016) finds that operating partners (including internal consultancies) and external consultants (including networks of senior advisors) have been involved in around 80% of buyout transactions in the pre- and post-investment phases (Table 2). However, there is no information as to the performance of these transactions as a function of the organizational model.

To shed some light on this question, we employ our proprietary *Chronograph* database to examine the performance of a large sample of buyouts. As described in the introduction, our sample includes 3,949 buyouts that were undertaken by 212 funds between 2004 and 2015. These funds are classified into four groups: (I) in-house operating partners who are on the payroll of a private equity firm; (II) external operating executives and senior advisors who are paid as external consultants; (III) internal consultancies; and (IV) partnerships that rely entirely on deal partners. In cases where private equity firms have adopted hybrid approaches, we classify funds according to the main model they have chosen.[35]

We find that the majority of the funds in our sample have adopted the operating partner model (55%). While 14% of the partnerships follow the functional model of external senior advisors, only 4% of the private equity firms have internal consultancies. Finally, a bit more than a quarter of our sample (27%) has followed none of these models, broadly in line with the share of GPs using deal partners only as reported in the GP survey by Kaplan, Gompers and Mukharlyamov (2016).[36]

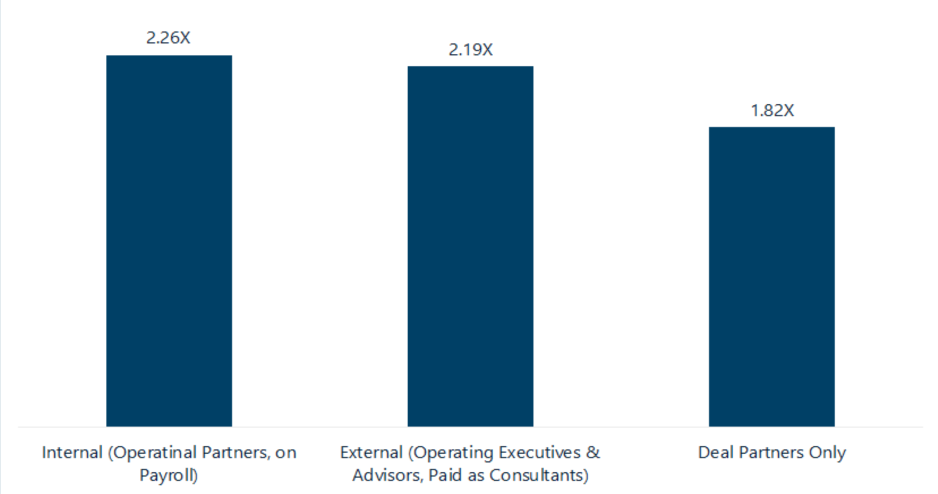
Few firms, even those with more than $25 billion in AUM, have internal operating groups larger than 15 professionals. McKinsey (2018). Private Equity Operating Groups and the Pursuit of Portfolio Alpha. November 6, 2018. https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/private-equity-operating-groups-and-the-pursuit-of-portfolio-alpha.

[34] Kaplan, Steven N., Paul Gompers, Vladimir Mukharlyamov (2016). "What Do PE Firms Say They Do?" Journal of Financial Economics 121 (3). Table 31.

[35] For instance, if a private equity firm lists five internal operating partners and two senior executives as outside consultants, the GP falls into the first category.

[36] Note that our sample is global, whereas the GP survey by Kaplan, Gompers and Mukharlyamov (2016) is confined to U.S. private equity firms. Given that additional operational resources are less common outside of the U.S. and European markets, it is unsurprising that we find in our sample a somewhat higher percentage of firms that rely exclusively on deal partners.

Figure 4. Average Gross MOICs of Buyouts by Funds with Different Approaches to Operational Engineering



Sample includes 221 buyout and distressed debt funds that were raised between 2004 and 2015. For illustrative purposes only. **Past performance is not indicative of future results.** The gross returns do not reflect the impact of fees, carried interest and other expenses incurred by investors in a private equity fund or those incurred by investors in an AlpInvest-managed fund or separate account, which will substantially reduce overall returns realized by investors.
Source: AlpInvest, based on reporting from underlying funds as analyzed via Chronograph. Information is as of 9/30/20.

Across all investment and vintage years, we find that the performance of buyouts of funds in the first two categories are essentially indistinguishable.[37] While the gross MOIC of transactions of funds following the internal operating partner model has averaged 2.26x, partnerships working predominantly with external operating executives have generated an average gross MOIC of 2.19x (Figure 4). Funds with internal consultancies are found to have generated slightly lower gross multiple returns than funds that fall into the other categories. However, given the small number of observations this result should be viewed with caution.

While we can't say with confidence which organizational form appears superior, our results suggest that operating partners, external operating executives and internal consultancies do help create value. Importantly, funds in our sample that have relied entirely on deal partners have on average generated

[37] Note that the classification of funds is based on information as of September 30, 2021. It is conceivable that private equity firms have changed their organizational approach to value creation through operational improvements over time. For instance, some funds that are allocated to categories (I) to (III) might have relied on deal partners only at the time of investing LPs' capital. While the opposite is less likely, in our view, this is an important caveat, which should be considered when interpreting the results reported in Figure 4.

a gross multiple on invested capital (MOIC) of 1.82x. While our analysis does not control for variables such as industries, geographies and deal sizes, the overall performance gap appears to be substantial.

Analyzing our co-investment portfolio leads us to similar conclusions. Importantly, in our homerun sample (described above), we identify only three transactions by GPs that have relied entirely on their deal partners to drive operational improvements. These co-investments represent less than 5% of our homerun sample of 70 transactions, suggesting that particularly successful deals have almost always involved additional support from operating partners, external consultants or internal consultancies. However, as is the case with the larger sample of buyout transactions in our *Chronograph* database, we are unable to say whether any particular model has a higher probability of generating outsized returns. Instead, we conclude that it is the clear focus on operational improvements that is paramount for value creation rather than the organizational mode through which these improvements are engineered.

06 Final Thoughts

As discussed in this paper, the private equity model has undergone profound changes over the past few decades. A key change is the much lesser reliance on leverage as a value driver. Instead of focusing on cash flows, with debt serving as a disciplining device as well as a tax shield, buyouts have become increasingly growth-oriented, requiring strategic and operational engineering. In turn, the increased emphasis on topline growth and margin improvements as key value drivers, in our view, has prompted GPs to build more heterogenous deal teams, whose skills go beyond financial engineering. To accelerate the rebalancing of value creation, GPs have added additional resources by hiring former senior executives as operating partners; creating pools of senior executives and functional experts who serve as consultants across different portfolio companies; and putting in place in-house consultancies. Generally, these measures have been successful, given the reported productivity gains at the portfolio company level and the continued outperformance of private equity as an asset class relative to public benchmarks. While we find that private equity firms that have beefed up their operating firepower have on average outperformed their peers that rely exclusively on deal partners, our research does not identify any organizational form that appears to be associated with consistently higher returns relative to other organizational models.

The increased emphasis on strategic and operational engineering has also meant that GPs target and value investments differently. As long as investment decisions were guided primarily by projected cash flows and potential leverage, the universe of buyouts was relatively homogenous. Today, however, investment strategies are significantly more differentiated, which is mirrored in the valuation of assets by different GPs. One indication is the proliferation of secondary buyouts. In fact, in the past few years sales of portfolio companies to other GPs have accounted for more than 30% of all buyout-backed exits.[38] To the extent that data on secondary buyouts are available, it appears that these transactions have performed just as well as primary buyouts.[39] This suggests that GPs possess heterogenous

[38] Preqin database, accessed 11/1/21.

[39] DeGeorge, F., J. Martin & L. Phalippou (2016). "on Secondary Buyouts." Journal of Financial Economics 120, pp. 124 – 145.

investment skills that are complementary, thus creating even more value over time at a given transaction price.

The private equity industry has responded to the increased heterogeneity of value creation with important innovations in financial intermediation. One innovation is the emergence of long-duration funds, which allows GPs to hold portfolio companies for a considerably longer period than this is possible within the traditional limited partnership framework. This innovation acknowledges that some assets may require more time to maximize the value of an investment. A related innovation are continuation funds that provide LPs with the option of remaining exposed to the underlying portfolio companies of a partnership as opposed to liquidating their holdings. While these innovations are consistent with the clear focus on strategic and operational improvements, they provide LPs with a wider range of investment strategies in private equity.

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