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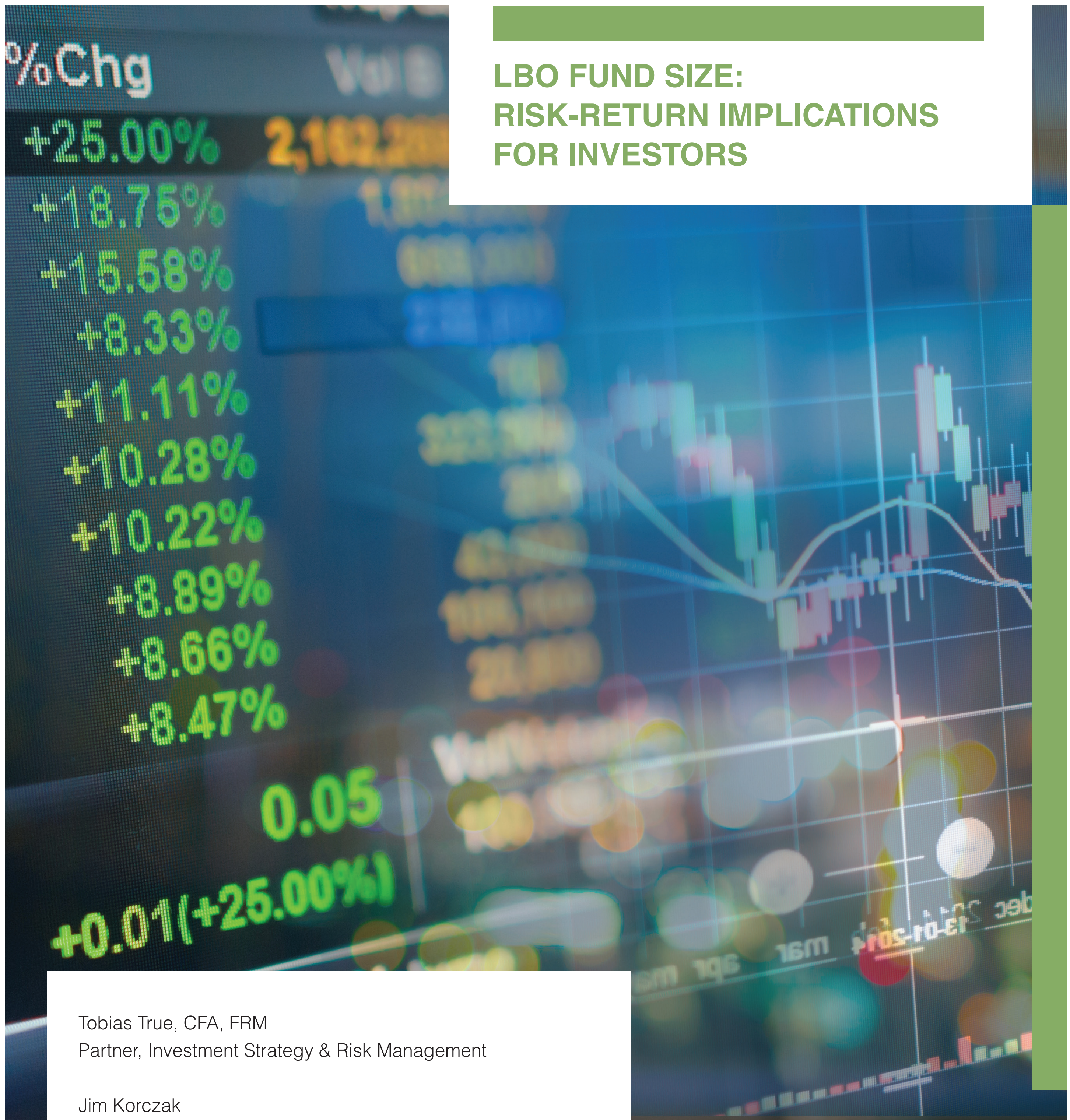
LBO FUND SIZE: RISK-RETURN IMPLICATIONS FOR INVESTORS



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Investors in Private Equity (PE) funds commonly think about portfolio construction in terms of factors like subclass (buyout vs. growth vs. venture), investment strategy (primary vs. secondary), and geography. While each is relevant in assessing a fund's performance characteristics, Adams Street believes that investors should consider another factor as well: total size of the PE fund.

In this analysis we focus on fund size within the leveraged buyout (LBO) market. Based on our experience investing in LBO funds and accumulating data for more than 45 years, we highlight four observations regarding fund size as a determinant in the risk-return profile of LBO funds:

1) **Dispersion of returns:** smaller funds have greater dispersion and asymmetry in their return profiles relative to larger funds.
2) **Leverage value creation:** smaller funds are less reliant on leverage relative to larger funds.
3) **Income statement value creation:** revenue expansion tends to be a larger driver of value creation for smaller funds, whereas larger funds rely more on cost reduction.
4) **Exit value creation:** smaller funds have a wider array of types of exit opportunities, including selling to their larger fund peers.

To explore the impact of fund size on risk and return, we first look to public markets as a helpful proxy to private markets where data is more limited and provided less frequently. In their initial three factor model, Fama and French famously identified company size as one factor that can explain return across public equity portfolios.[1] While the study identified smaller companies as having greater investment risk,[2] it also identified a corresponding risk premium, enabling investors with a long time horizon and a diversified portfolio of small cap stocks to be compensated for investing in smaller companies.

If a similar small-cap premium exists in private markets, it is more challenging for investors to capture. First, private markets lack an investible market index or ETF with which an investor can effectively buy the market portfolio. Second, high quality smaller funds can be more difficult to access than their larger peers. Third, the illiquid, blind pool, closed end fund structure of private markets forces investors to live with the consequences of their investment decisions with limited opportunity to sell or rebalance.[3] For these reasons it is critical for investors to understand the degree to which an LBO fund's expected risk-return profile is dependent on the size of the fund.[4]

Fund-Level Returns: Empirical Analysis

Our analysis focuses on U.S.-based LBO funds in an effort to isolate fund size and minimize the impact of geography.[5] While we focus on data for U.S. funds we believe the same observations exist on a global scale. Furthermore, although the market lacks consensus as to precise fund size classifications, for our analysis we use a commonly cited classification:[6]

	Small	Mid	Large
Fund Size (USD)	**< $750M**	**$750M - $1.5B**	**> $1.5B**

1 "The Cross-Section of Expected Stock Returns." Eugene Fama and Kenneth French. The Journal of Finance. June 1992.

2 The study defined risk as the volatility of prices over time. In this analysis we measure risk using additional metrics such as loss rates and dispersion of returns.

3 The secondary market for private equity investments continues to grow and become more liquid, however investors have no assurance that a portfolio can be sold efficiently for an acceptable price and without significant transaction costs.

4 Because the analysis is from the perspective of investors in LBO funds rather than single LBO companies, we use fund size as a proxy for underlying company size. This is a valid representation based on our experience, as smaller funds tend to invest in smaller targets. By definition small and mid-market LBO funds cannot invest in the large deals that are seen in mega LBO funds (i.e. $5 billion and larger).

5 While we believe fund size is relevant on a global scale as well, for the purposes of the study including additional geographic regions would make it more challenging to isolate fund size as a factor.

6 A number of widely used market databases use this classification. Preqin: "The Private Equity Mid-Market in Focus," 2018. https://docs.preqin.com/reports/Preqin-Private-Equity-Mid-Market-April-2018.pdf

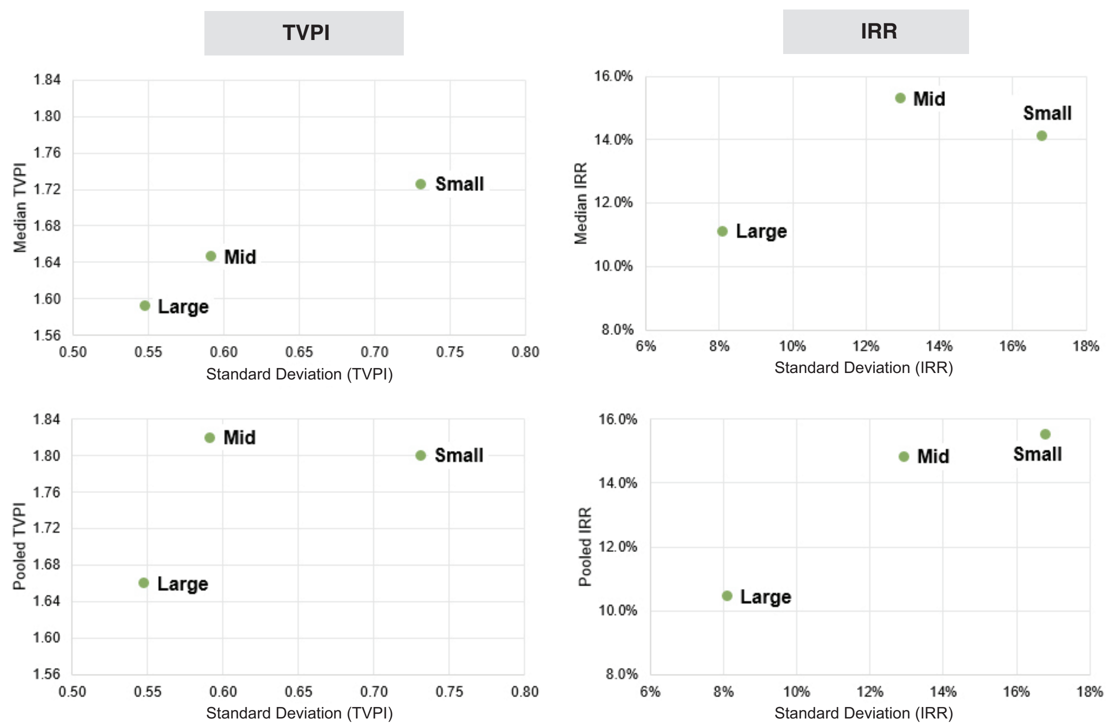
We examined U.S. buyout funds from vintage years 1982-2015[7] in terms of TVPI[8] and Internal Rate of Return (IRR) across the three size categories. While different investors have different definitions of risk, we represent risk with the distribution of fund returns and capital weighted loss rates (CWLR).[9]

This fund level analysis provides three noteworthy observations. First, risk is inversely proportional to fund size. Whether risk is defined as the standard deviation, inter-quartile range, or CWLR, smaller funds demonstrate greater variability in returns relative to larger funds.

Second, returns for smaller funds are more influenced by positive outliers. This positive asymmetry is visible in Figure 1 and has important portfolio construction ramifications which we will address. Finally, and perhaps most importantly, we find evidence of a market risk premium for fund size across all measures of risk and return (Figures 2 and 3). Smaller funds may come with more risk, but as a whole the market appears to compensate investors for underwriting this additional risk.

Figure 1: Return Distribution by Fund Size[10]

Figure 2: Fund Returns vs Dispersion, Grouped by Fund Size



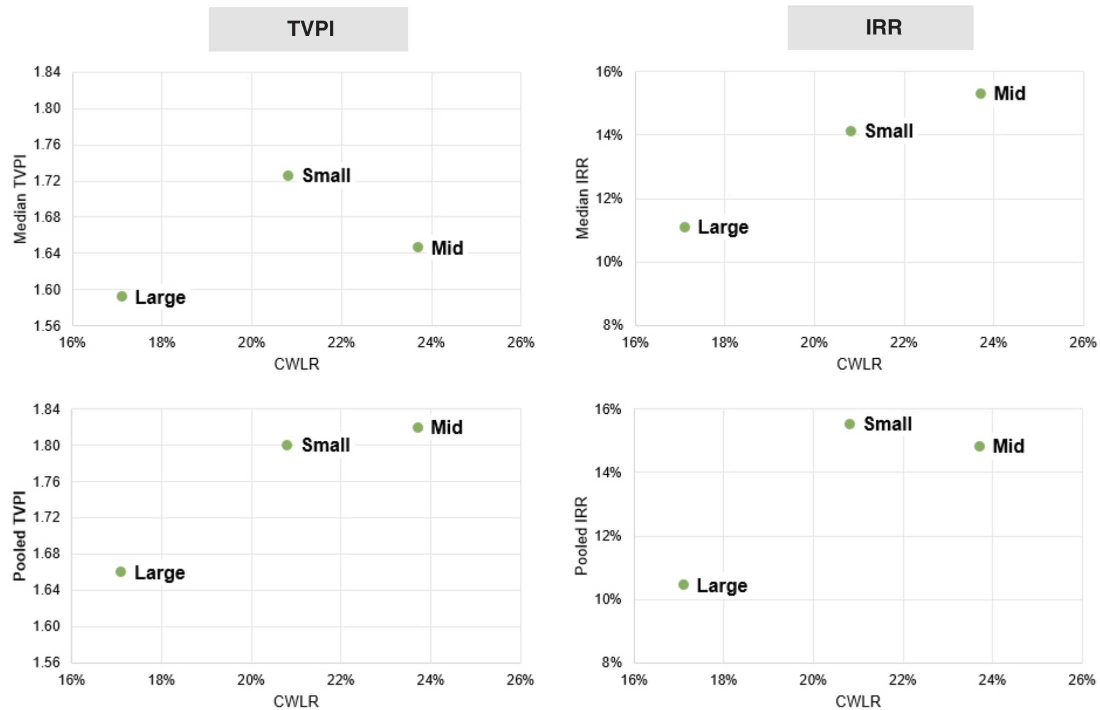
7 Data set is comprised of 173 total funds from 1982-2015. The data is as of December 31, 2018.

8 Total Value to Paid In (TVPI) represents the sum of distributions and net asset value divided by total paid-in capital.

9 Capital weighted loss rate is calculated as, for a given fund, the total magnitude of losses for all investments having negative returns divided by the total cost of all investments in the fund.

10 Returns are net of General Partner fees, carried interest and expenses.

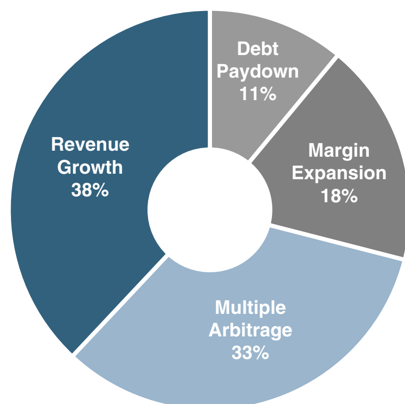
Figure 3: Fund Returns vs. Loss Rates, by Fund Size



Fund Selection and Value Creation

Differences in the dispersion of returns for LBO funds highlight the importance of fund selection and access in determining the returns that investors will ultimately realize. But as much as this may be a commonly held notion, the process and methods for selecting and accessing funds can vary greatly from one investor to the next.

Figure 4: Sources of Value Creation for US LBO Funds[11]



Adams Street Partners believes that effective manager selection begins with an identification of the factors, qualitative as well as quantitative, that drive returns. From a quantitative perspective we typically attribute company value creation to a set of four factors: revenue growth, multiple arbitrage, margin expansion, and debt paydown. At the fund level, returns can also be influenced by fund management decisions such as the extent to which capital is recycled, whether committed capital is fully invested, and the use of a line of credit. Figure 4 shows the company value creation framework applied to US LBO funds smaller than 1.5 billion in total fund size.

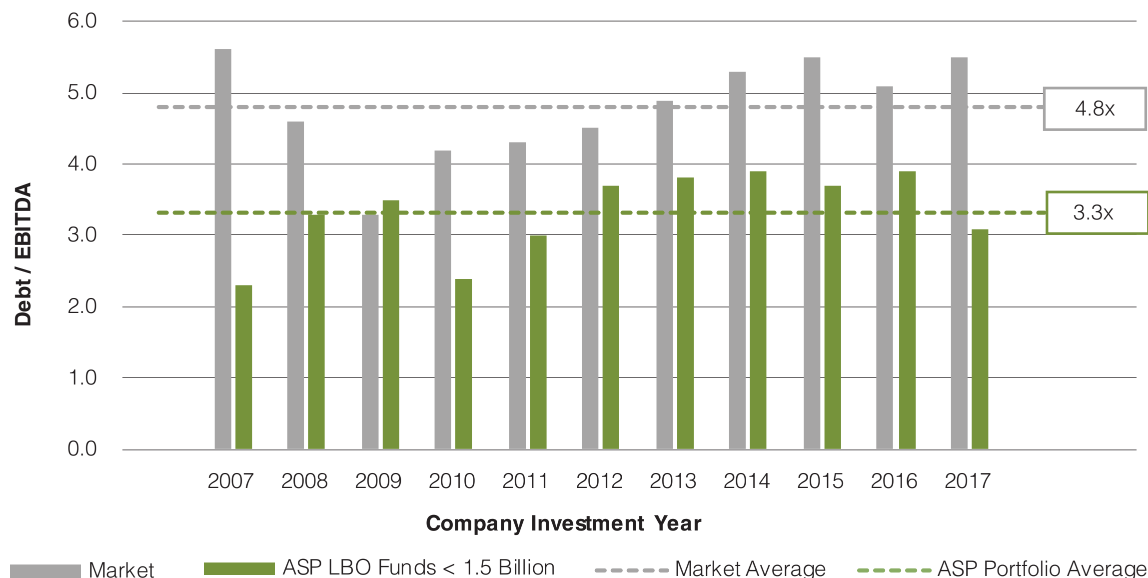
By design, these four factors can be applied to any fund or investment strategy. What differs is the significance of a particular factor relative to others. Investment insights are generated by first forming expectations around sources of value creation *(ex-ante)*. Expectations are generally based on a fund's underlying strategy, with fund size being a key consideration. Qualitative assessments, including extensive conversations with fund management teams, off-list reference calls, tracking actual versus expected events, firm culture and strategy are an important part of forming expectations. Performance can then be evaluated *ex-post* relative to expectations.

11 Source: Adams Street Partners. Based on data from 426 portfolio companies across 36 partnership funds. Adams Street Partners is or was an investor in some but not all of the partnership funds.

For example, as illustrated in Figure 4, we have found that more than 70% of added value for small US LBO funds has come from revenue growth and multiple expansion. We have found this total contribution to be lower for larger funds, which is consistent with fundamental expectations for smaller companies relative to larger companies.

Managers can grow revenue in several ways. Through their own experiences as well as leveraging their professional networks, managers implement organic growth plans by investing in sales and marketing talent, strategically reviewing pricing strategies, or implementing best practices in new product development. Targeted acquisitions can also expand a company's product offering and reduce customer concentration. Simply stated, smaller companies typically face a longer potential growth runway but with greater risk in execution along the way.

Figure 5: Leverage Varies by Fund Size[12]



While larger private equity managers employ similar strategies, the impact of these strategies on smaller companies can drive significantly more value by unlocking potential the company could not otherwise achieve without professional assistance and governance. By contrast, the use of leverage tends to be both higher and a greater contributor to overall value creation for larger funds (Figure 5). While both scenarios can produce good capital appreciation for investors, value creation from leverage can be more dependent upon and benefited from a climate of rising valuation multiples. Company level attribution is valuable in helping to ascertain different sources of return for different types of funds.

Manager Relationships

Managers who deliver on revenue growth and margin expansion tend to do so across more than a single fund. Prior research from Adams Street Partners has found evidence that prior fund performance has meaningful predictive power for a manager's future fund performance. While this may help identify small and mid-market funds which are likely to outperform, these top tier funds can

12 Source: S&P Capital IQ Transaction Statistics as of August 2018 and Adams Street Partners. Represents underlying portfolio company data from historical track records of general partners in whose US LBO funds under $1.5 billion in fund size Adams Street Core Portfolios invested from 1999 to 2017. "Core Portfolios" are funds and separate accounts (excluding special mandate funds and non-discretionary separate accounts) of which Adams Street Partners is the general partner, manager or investment adviser (as applicable) and for which Adams Street Partners makes discretionary investments in private equity funds. Core Portfolios include separate accounts no longer with Adams Street Partners. Represents the average leverage ratios (Debt / EBITDA) for Adams Street Portfolio companies over the past 11 years as available.

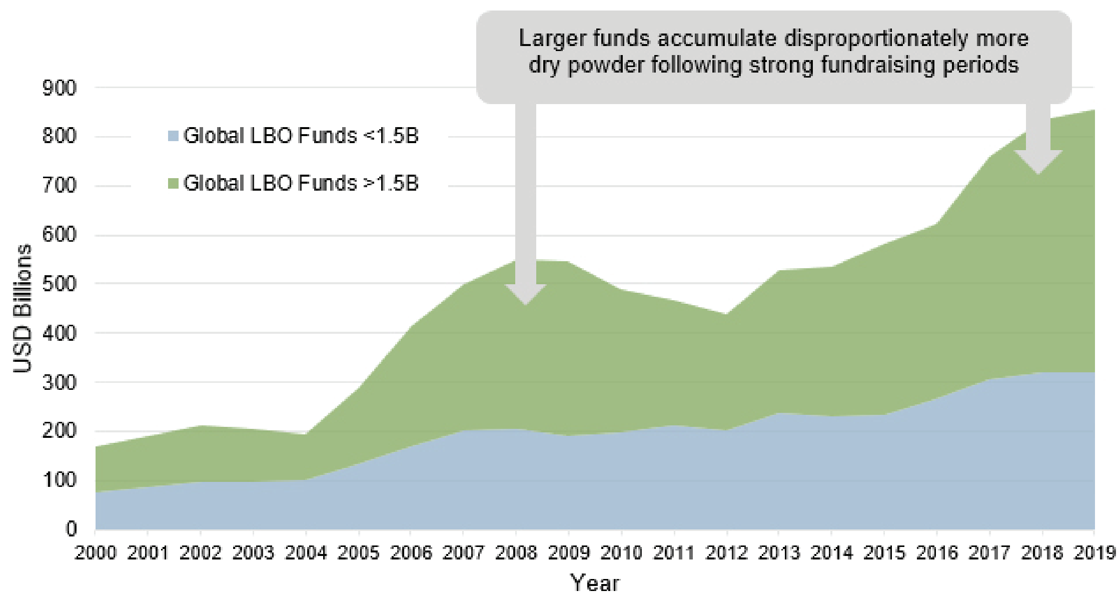
be difficult for investors to access. In addition, managers with good performance track records can sometimes attempt to parlay past success into a much bigger fund size which can threaten return persistence. Having access to persistently successful managers through prior relationships is key to developing insight and gaining exposure to their funds. The importance of relationships also applies to new funds formed by entrepreneurial managers starting their own firm. In today's competitive environment, these funds can be well oversubscribed. LPs staffed with dedicated fund selection professionals with the pattern recognition and resources to conduct extensive research on the drivers of success will have a leg up on their peers.

Exit Opportunities and Market Environment

Presently, buyout funds of all sizes find themselves in a virtuous cycle of performance and fundraising. LBO funds as a whole have experienced a post-GFC decade of delivering strong net performance to investors, which has attracted record amounts of capital to the market. A common concern among investors is that as this new capital competes for deals it will force valuations higher, which could ultimately compromise future returns.

While this concern is justifiable given the behavior of past market cycles, it is important to understand where this new capital is being committed. Data from Preqin shows us that a disproportionate amount of this new capital is being committed to funds greater than $1.5 billion in fund size, in a similar pattern (but in greater magnitude) to what occurred on the heels of strong performance in 2005-2008.

Figure 6: LBO Uninvested Capital ("Dry Powder") by Fund Size, Global LBO Funds



Presently, large funds have over $200 billion more in dry powder relative to small and mid-market funds (Figure 6).[13] For buyout investors, this is both a risk and an opportunity. The risk is that increased pressure to invest this dry powder will heighten competition for deals and raise valuations to a point that compromises future returns. At the same time, the dry powder represents a significant market into which managers can sell existing investments. Small and mid-market buyout funds are well positioned in this regard. They have a more stable supply of capital to invest, and have a larger universe of buyers available as investments are exited.

13 Source: Preqin, as of 3/31/2019.

Summary

As investors look to include LBO funds as part of a larger portfolio, they should consider fund size as one of the factors in the portfolio construction process. Data spanning multiple market cycles suggests that smaller LBO funds do come with more risk attached. The same data also demonstrates that investors are compensated for accepting this additional risk. Fundamental differences between funds in different size brackets supports this hypothesis as well, as fund size tends to drive not only the degree of risk and return but also the *types of and sources of* risk and return.

The onus is on investors to determine whether this risk premium is adequate enough, and if so, how best to access it. Returns are ultimately generated by effective manager selection, but an important first step is to use fund size as a framework for determining what questions to ask and what risks to take.

Founded in 1972, Adams Street Partners is one of the most respected and experienced private markets investment managers in the industry. With 195+ staff in ten offices – Beijing, Boston, Chicago, London, Menlo Park, Munich, New York, Seoul, Singapore, and Tokyo – our deep industry experience and global outlook provide clients with customized access to the spectrum of private markets strategies. Adams Street is 100% employee-owned and independent, and manages more than $36 billion in assets for more than 400 institutional investors, including corporate and public pensions, foundations, family offices, and endowments.

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