Private Equity Is Growth Sensitive

Where is the Illiquidity Premium?

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Why This Matters?

This paper applies our models to a proxy private equity portfolio to evaluate its expected long-term return relative to the public equity market. Today's premium has decreased by as much as 50% in the last two decades, driven by a reduction in long-term trend economic growth and, more recently, a decrease in macroeconomic uncertainty. Private equity investors should review the structure of their private equity and total portfolios in the context of changes in macro uncertainty.

Who Should Read This Paper?

The issues in this paper are important for assessing long-term returns on public and private equity assets, and should be of interest to risk and investment strategists, and asset allocators.

01. Introduction

Over the past 20 years, institutional investors have increased their allocations to private equity, partly driven by inflexible portfolio return targets. The increased allocations to private equity have been justified by appealing to an "illiquidity premium"- the premise is that infrequent trading of private equity makes it hard to observe private equity returns and thus hard to estimate private equity risk. Consequently, long-term investors should be rewarded for illiquidity. Our research, summarized in this paper, takes a contrary point of view. Long-term private equity returns can be understood through the application of well-known principles of financial economics. Expected private equity returns reflect exposure to standard public equity factors such as size, style and sectors, and leverage. Since size, style and sectors vary in their exposure to macroeconomic factors such as long-term trend growth and uncertainty, it stands to reason that the private equity premium is itself also sensitive to these same macroeconomic factors.

Applying our models to a proxy private equity portfolio suggests that today's private equity premium has decreased by as much as 50% from the level of two decades ago. According to our models, the decline has been driven by a reduction in long-term trend growth AND, more recently, a decrease in macroeconomic uncertainty. Our work suggests that investors with private equity investments should pay close attention to both long-term macroeconomic conditions and the structure of their private equity portfolios.

02. Evaluating Long-Term Risk and Return in Private Equity

Performance and risk of private equity investments are notoriously hard to measure[1]. To overcome these measurement challenges, we suggest going back to a basic principle of finance: the competitive value of a firm does not depend on how the firm is being financed. On the basis of this principle, the only difference between private and a comparable public equity investment is the difference in financial leverage. Thus, after accounting for the difference in leverage, private equity returns are driven by the same factors that drive public equity returns: size, style and sectors.

The questions then for investors interested in long-term private equity returns are:

- What are the sources of long-term return premia in public markets?
- What are the exposures of specific private equity investments to these premia?
- How should leverage be treated?

The primary driver of public equity return premia is the cap-weighted market portfolio. In addition, our previous papers identified alternative sources of premia as growth-sensitive or growth defensive factors. Growth-sensitive factors exhibit greater sensitivity than the market to shocks to economic trend growth. These include portfolios tilted on size (small market capitalization), value (high book-to-market), and sectors such as information technology, materials, industrials, financials and consumer discretionary. Conversely, defensive portfolios exhibit lower sensitivity to shocks to economic trend growth. These include portfolios tilted on profitability, and healthcare, utilities, and consumer staples sectors.

Exhibit 1 describes an illustrative private equity buy-out fund, biased towards the growth-sensitive size factors and sectors. In terms of size, the average equity value of portfolio companies is about 700 USD million. By contrast, the average market cap of a publicly traded firm is about 38 USD billion. Turning to sectors, while the illustrative fund is slightly underweight financials and information technology relative

[1] Among other reasons, timely and accurate information are hard to come by, reported appraisals by managers typically lag public markets, and there is a fragmented secondary market.

to the overall public equity market, it is also significantly overweight consumer discretionary and industrials. And while being overweight healthcare, it is significantly underweight consumer staples and utilities. Finally, the illustrative fund is assumed to employ a higher level of financial leverage, with a debt/equity ratio of about 70%, compared to 10% for the average publicly traded firm.

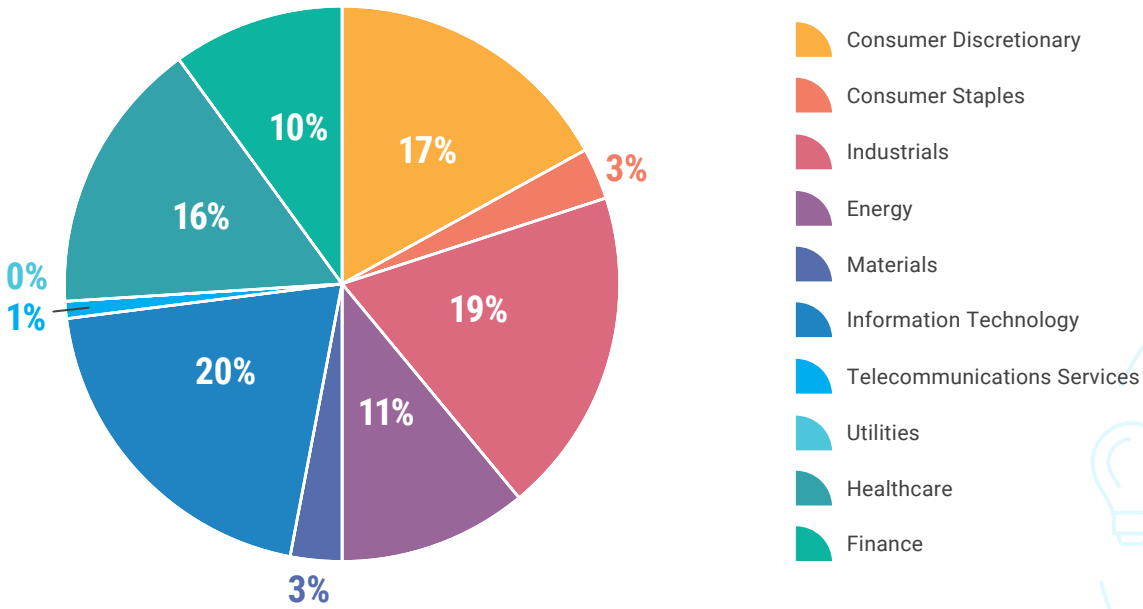
Exhibit 1 A - Private and Public Equity Size, Leverage, and Sector Biases

	Illustrative Private Equity Fund	Public Equity Market
Average Firm Size (USD Million)	700	38,297
Growth-Sensitive Sector Exposure	80%	75%
Defensive Sector Exposure	19%	24%
Debt/Equity Ratio	70%	10%

The portfolio is illustrative of aggregate allocations to private equity buyout funds and does not reflect the characteristics of any specific private equity fund.

SOURCE: NAVEGA STRATEGIES LLC RESEARCH, LANDMARK PARTNERS

Exhibit 1 B - Private Equity Fund Sector Decomposition



The portfolio is illustrative of aggregate allocations to private equity buyout funds and does not reflect the characteristics of any specific private equity fund.

SOURCE: NAVEGA STRATEGIES LLC RESEARCH, LANDMARK PARTNERS

What are the implications for private equity risk and returns? Our models use information about private equity size, sectors and leverage to determine exposures to public equity growth-sensitive and growth-defensive factors. As a result, we can now measure private equity long-term risk and return premia - the main drivers are exactly the same as those for public equity.

Exhibit 2 shows the factor exposures, long-term risk and risk contributions from real GDP growth and inflation, for the public equity market and our illustrative private equity fund (with and without the impact of leverage). Beyond leverage, the only difference between private and public equity is the net positive exposure to growth-sensitive factors and sectors, and the net negative exposure to growth-defensive sectors. The differences in exposure to real growth results in a higher long-term risk of 19.4% for unlevered private equity, compared to 15.2% for public equity. And like public equity, private equity long-term risk is also primarily driven by long-term trend economic growth. Accounting for the impact of leverage scales up all factor exposures, enhancing the private equity fund's sensitivity to macro uncertainty. As a result, long-term risk is significantly increased to about 30%.

Exhibit 2 - Private Equity Long-Term Risk Is Driven By Long-Term Trend Growth

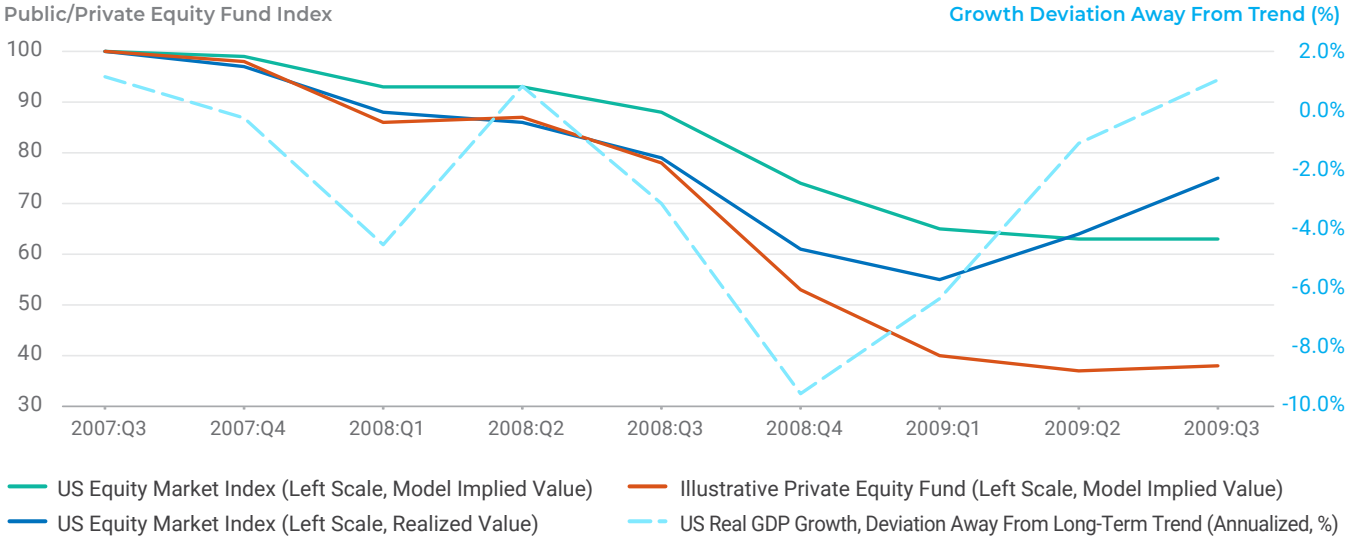
	Public Equity Market	Private Equity Fund (Excluding Leverage)	Private Equity Fund (Including Leverage)
Factor Exposures			
Market	1.0	1.0	1.5
Growth-Sensitive (Net of Market)	0.0	0.6	0.9
Defensive (Net of Market)	0.0	0.0	-0.1
Long-Term Risk (Annualized, %)	15.2%	19.4%	30.0%
Contributions to Long-Term Risk (%)			
Real GDP Growth	93.3%	93.3%	93.3%
Inflation	0.1%	0.1%	0.1%

SOURCE: NAVEGA STRATEGIES LLC RESEARCH, LANDMARK PARTNERS

03. Growth Sensitivity and Leverage Matter

To illustrate why this growth sensitivity matters, for both investors and managers, we simulate the impact on public and private equity of a large, negative and persistent shock to US real GDP growth, similar to the 2008 global financial crisis (GFC) experience. The starting point is a baseline against which we evaluate the scenario: our forecast for long-term trend growth. Exhibit 3 shows how realized GDP growth deviated from our baseline from 2007Q3 to 2009Q3. According to our models, persistent declines in growth up to annualized -10% (relative to our baseline) significantly increased investors' perception of long-term macro uncertainty, and led the strong decline in equity market value. The nearly -40% peak-to-trough drop in US equity market value implied by the model (green line) is well aligned with actual experience (blue line). Our simulations indicate that our illustrative private equity fund (red line) would suffer a much larger loss in value, up to -60%, which resonates well with some practitioners' actual experience. At the time, the common interpretation for larger loss was the illiquidity of private markets. By contrast, our models suggest the incremental loss relative to public equity market was likely to be driven by the combination of higher leverage, and inherent growth-sensitive small cap and sector biases.

Exhibit 3 - 2008 Global Financial Crisis Scenario Impact on Public and Private Equity



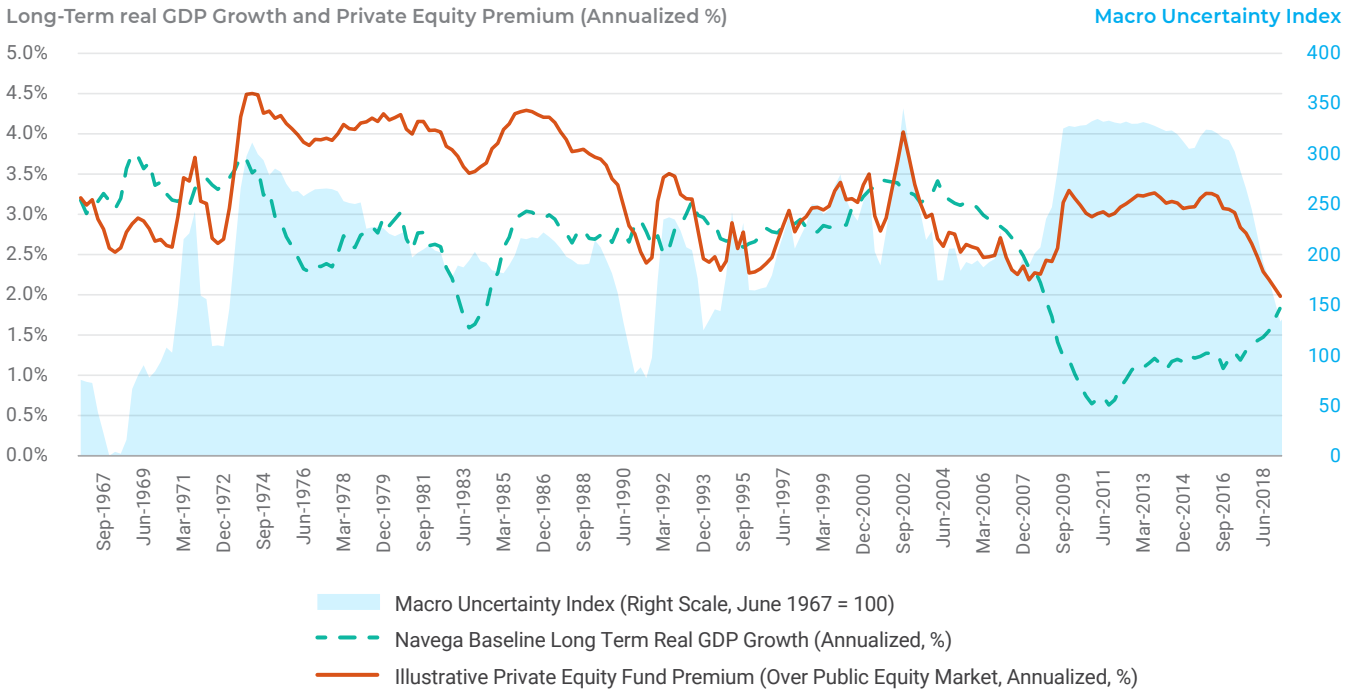
SOURCE: NAVEGA STRATEGIES LLC RESEARCH, LANDMARK PARTNERS

04. Lower Trend Growth and Uncertainty Imply Lower Premiums

The flip side of enhanced growth sensitivity is higher long-term expected returns to private equity relative to public equity. According to our models, the premium reflects compensation for potential larger losses due to persistent, negative shocks to trend economic growth. Moreover, the premium for growth-sensitivity is likely to vary over time, with changes in the macro environment.

As shown in Exhibit 4, our models indicate that long-term trend growth and uncertainty have varied over the last 50 years. And, the long-term return premium to our illustrative private equity fund increased with both long-term trend growth and uncertainty. Until 2008, when long-term trend growth remained relatively high (at about 3%), the private equity premium averaged about 3.3% according to our models. And

Exhibit 4 - Lower Uncertainty around Lower Growth, and Lower Private Equity Premium



SOURCE: NAVEGA STRATEGIES LLC RESEARCH, LANDMARK PARTNERS

ranged from 2.5% in periods of low uncertainty (1960s) to 4% in periods of high uncertainty (1970s).

Around the GFC, long-term trend growth experienced a significant decline, down to 1.6%, and has been stagnating since. As for macro uncertainty, it remained at its highest level for nearly 8 years. Taken together, lower trend growth with high uncertainty resulted in a private equity premium of about 3%, nearly the same as the pre-GFC historical average. Since 2016 however, macro uncertainty has receded. According to our models, today's macroeconomic environment is consistent with private equity premiums that are up to 50% lower than historical experience.

05. Conclusions

Going forward, investors focused on long-term portfolio solutions should expect a continuation of low uncertainty around a stagnant, low long-term growth. This observation has implications for all asset class returns, including private equity. In our view, investors have an opportunity to review total portfolio strategy, including the impact on spending and contribution decisions. More narrowly, investors have an opportunity to re-examine their private equity portfolio allocations -could this be the time to adopt more growth defensive strategies in private equity? We will explore the implications for portfolio strategy in future papers.

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