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Investment Publications Highlights

Oil Price Movements and Risks of Energy Investments

Gregory Brown et al., *The Journal of Alternative Investments*, vol 19, no 4 (Spring 2017): 24–38

The authors analyze historical risk/return relationships between energy prices, energy-focused public investments, and energy-focused private equity from June 1986 to June 2015. Their results show that, though investors should not turn a blind eye to the lack of liquidity and longer investment horizon, energy private equity (PE) funds offer more upside potential in the long term than both energy commodities and energy public equities.

The authors construct a public market equivalent (PME) benchmark that mimics the dates and proportional amounts of cash flows of energy-focused PE funds, based on a value-weighted index of US energy stocks ("public benchmark"). While both energy PE funds and the public benchmark are positively correlated with oil prices, as well as broader energy prices, energy PE funds are less so. This fact remains true even when running simulations using portfolio company level data, suggesting that an allocation to energy PE offers more diversification benefits than an allocation to public energy equities.

Using regression analysis, the authors test whether oil price movements and broader energy price movements drive public energy and energy PE returns. Their results show that, although both oil price and broad energy price movements are helpful in explaining return variations, oil price returns are particularly helpful when those returns are high—suggesting that both energy PE and energy equities have the ability to capture upside potential in oil prices. The authors, however, find that a 1 percentage point (ppt) increase in oil price returns over a three-year rolling period is associated with approximately a 0.8 ppt increase in energy PE returns, but a slightly lower percentage point increase in public energy returns.

During periods of low oil prices, the authors observe that the relationship between oil price returns and both energy PE and the public benchmark is less strong. The authors argue that this is the case, in part, because energy companies have a high ratio of fixed costs relative to variable ones, making their returns less correlated on oil price downturns and more correlated to oil price upturns. This is particularly prominent in energy PE because of managers' flexibility to time capital deployment and exits compared with their public counterparts.

Based on these relationships, the authors argue that a portfolio allocation to energy PE could offer more diversification benefits and upside potential than other energy investments if investors have a long-term investment horizon and are willing to tolerate lower liquidity. If investors have liquidity needs or a shorter time horizon, then investments in hard commodities and public equity markets may be more appropriate.

Corporate Raiders at the Gates of Germany? Value Drivers in Buyout Transactions

Fabian Söffge and Reiner Braun, *The Journal of Private Equity*, vol 20, no 2 (Spring 2017): 28–45

This study compares PE investments in the DACH region (Germany, Austria, and Switzerland) to a constructed public market benchmark. The authors find that buyouts outperform the public market benchmark by a level that is statistically significant.

To measure value creation, this study looks at a sample of 123 buyout transactions initiated between 1995 and 2010. The authors focus on buyouts in particular, as they have become a more significant percentage of PE investments in the region, increasing from 20% of activity in 1995 to 79% in 2014. The authors review internal rates of returns (IRR), times money multiples, and drivers of EBITDA (earnings before interest, tax, depreciation, and amortization) growth to assess value creation. Leverage is also considered in this analysis as one way PE firms bolster returns.

On average, the authors find that the buyout sample has a gross equity IRR of 43.1%, which represents 25.3 ppts of outperformance relative to a constructed public market benchmark. Even after accounting for leverage, the average buyout IRR (28%) still exceeds the benchmark return by 11.6 ppts. The remaining level of IRR outperformance is attributable to EBITDA growth, excess cash generation, and multiple expansion.

Looking at money multiples, the authors find that the buyout sample generated an average multiple of 3.83 times money compared to the benchmark's 1.88 times. Though leverage contributed more to the buyout sample's performance (33%) than the benchmark's (16%), nearly one-fourth of the value created by the buyout sample is linked to increases in free cash flow, as buyouts delever during the holding period. The authors highlight that this pattern is not seen among companies in the public market benchmark.

The authors note that although buyout performance dropped during and immediately following the financial crisis (2008–10), the average buyout performed better than the average benchmark company on an unlevered basis. The authors attribute this outperformance to larger declines in public markets compared to private markets and PE firms' strategy of exiting investments not heavily impacted by the downturn. Overall, the authors find PE firms add significant operational value in the DACH region.

Synthetic Peer Benchmarking for Diversified Private Equity Program

Jeroen Cornel, *The Journal of Alternative Investments*, vol 19, no 4 (Spring 2017): 53–66

The author explores issues with benchmarking diversified PE programs. To address these issues, a new benchmarking technique based on Monte Carlo simulations of randomly selected PE funds is proposed. The author argues that the new method increases comparability of data, eliminates a major benchmark aggregation issue, and provides transparency into performance drivers.

Private equity is often a standard component of institutional investment portfolios. Depending on institution-specific goals, limitations, and other factors, exposure to a well-diversified PE program can help achieve long-term investment objectives. Due to the nature of PE investing—cash inflows and outflows to and from individual PE funds are determined by the

fund manager, not the investor—benchmarking a PE program is more complex than benchmarking public counterparts. For a single fund, cash inflows and outflows can be recreated using a public index to benchmark the fund, but when this is done for a collection of funds in a typical PE program, the author argues that data, such as the IRR, can become distorted and lose relevance. This is because of a statistical issue known as Jensen's inequality, which in this case means the IRR calculated from all the underlying cash flows in a PE program will be different from the expected IRR of that program. One way to address this is to compare returns for a PE fund to a benchmark composed of other PE funds.

The author highlights three common, publicly available peer benchmarking techniques (each with variations) used across the industry. One method is for each of the program's funds to be assigned a quartile rank based on its performance relative to peers of the same vintage (inception year), strategy, and geographic focus. All rankings are then aggregated by a weighting scheme to determine the full program's quartile rank. This is widely used, but does not quantify the performance. Another method is to compare the performance of the total program to quartiles for individual vintage years. For example, the IRR for a PE program consisting of funds from three different vintage years would be assigned a percentile rank relative to all PE fund IRRs from each individual vintage year. This method is not apples-to-apples and does not address cash flow issues related to IRR calculations. A third technique weighs the underlying peer group benchmarks to calculate a weighted performance figure, but this approach also does not address the IRR cash flow calculation issue.

To improve PE benchmarking, the author proposes a method to simulate a diversified bottom-up portfolio by randomly composing a PE program, reconstructing the theoretical cash flows, and then calculating the program's IRR and other relevant metrics. This process is then run thousands of times, each with a different randomly selected PE program composition. The resulting mean is used as the program's benchmark. The results provide a quantitatively driven benchmark that allows attribution to be assigned to vintage, strategy, geographic focus, and manager skill. The author believes this method improves upon publicly available PE program peer benchmarks. They also propose this method could be used for other illiquid investments, such as direct real estate and infrastructure investments. ■

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