# Value Creation in Private Equity

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The last 18 months have been characterized by an unprecedented financial crisis. The subprime crisis has led to a change in the banking sector that has never been seen before. In particular, debt issuance has decreased substantially—while leverage seemed to be available in abundance in early 2007, debt volumes have come down by two thirds since then. These developments question the business model of private equity and raise crucial questions:

- To what extent is private equity value creation driven by operational improvements and what is the dependency on leverage?
- How did value creation happen in the past?
- What is private equity value creation likely to look like in the next cycle?

To answer these questions, Capital Dynamics teamed up with Prof. Dr. Dr. Ann-Kristin Achleitner, Co-Director of the Center for Entrepreneurial and Financial Studies at the Technical University of Munich (CEFS), and her research team1 in a joint study to cover this topic. The study screened a comprehensive data set of private equity transactions for its value drivers, offering in-depth insight into private equity value creation during the last 20 years. In addition, the methodological framework for calculating the value drivers was further improved.

Overall, the results of the study draw a bright picture for private equity. Two thirds of the value creation were attributed to operational enhancements at the respective portfolio companies and to an increase in market multiples. The leverage effect (i.e. increasing the return on equity by deploying debt) accounted for one third of value creation. Furthermore, the study offers evidence that operational improvements were higher at private equity portfolio companies compared to their listed counterparts.

The underlying study examines value creation and cash flow data — enterprise value, equity value, sales, EBITDA, net debt at entry and exit, and interim cash flows2 — of 241 firms from 1989 until 20063. Transaction volumes at company level covered a broad spectrum, ranging from EUR 1 million to EUR 4.3 billion. 85% of all transactions were European. The data not only covered successful deals but also transactions which failed to pay back the total initial invested capital. The average debt-to-equity ratio of portfolio companies amounted to 1.7x at investment entry and was lowered to 0.8x on average over an average holding period of 3.5 years.

[1] Dr. Reiner Braun, Nico Engel, Christian Figge and Florian Tappeiner.

[2] Cash flows between portfolio company and fund during the holding period of the investment.

[3] Members of the CEFS only received fully anonymized data without any reference to company, fund or manager.

In contrast to earlier research, the study not only accounts for the free cash flow effect (hence also for the de-leverage effect), but also for the leverage effect taking a company's financial risk into consideration. Furthermore, the operational component distinguishes between sales growth and improved operational margins, giving a detailed picture as illustrated in Figure 1.

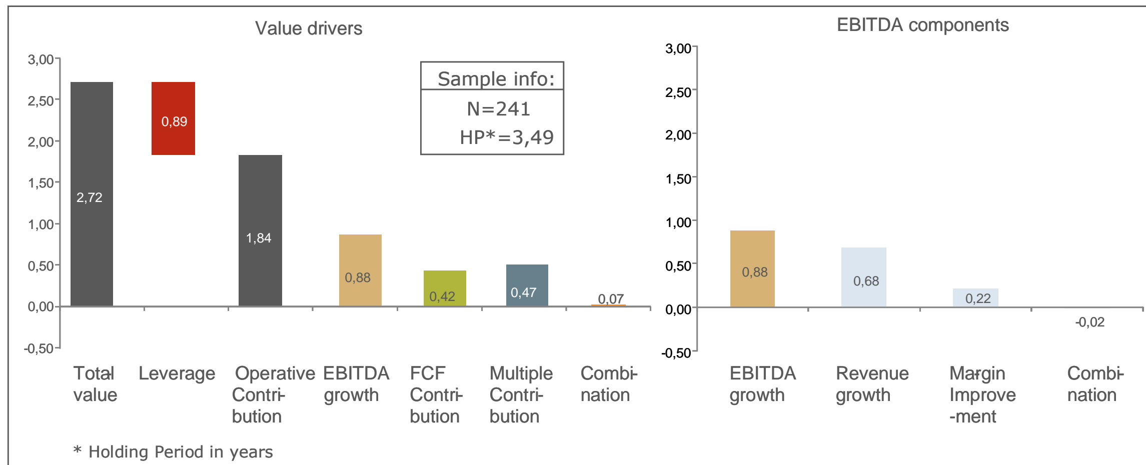


Figure 1: Value creation in private equity

Figure 1 shows that out of a total value increase of 2.72x of the equity invested by the PE general partner, 0.89x is accounted for by the use of leverage, while a further 0.88x resulted from positive EBITDA growth. The remainder was almost equally split by free cash flow improvements and multiples growth, with 0.42x and 0.47x respectively. The combination components4 were largely negligible. A closer examination of the EBITDA growth shows that almost 80% is accounted for by sales growth, while only 20% resulted from improved margins. These results indicate that (a) leverage accounted for one third of value creation, and (b) value creation without the use of leverage was considerable at 1.84x over an average holding period of 3.5 years.

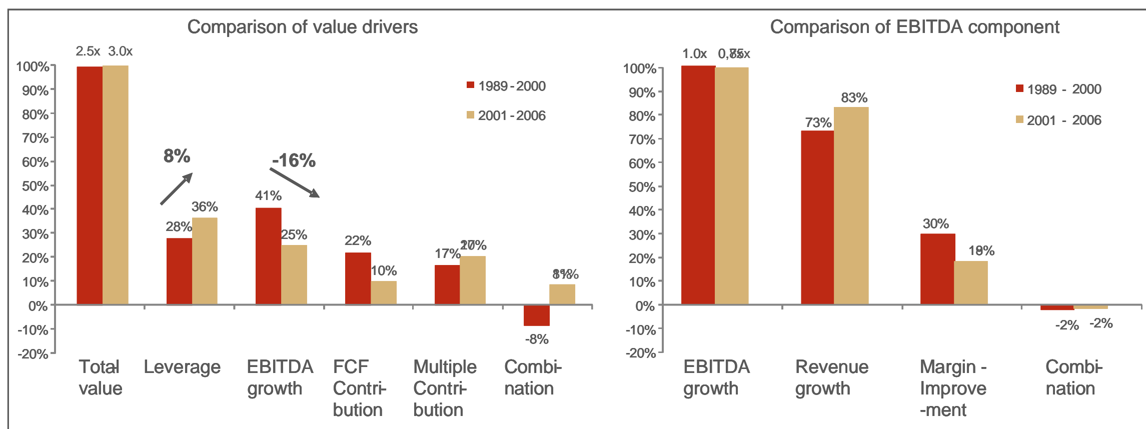


Figure 2: Value creation in private equity over different time horizons

4 The combination components are correction factors to capture the combined effects of EBITDA and multiples.

Figure 2 shows that the share of value creation through the use of leverage was 8% higher during the period between 2001 and 2006 than during the period between 1989 and 2000. Furthermore, it shows that the leverage component – as expected - has been of increasing importance during the last years, while EBITDA growth decreased by 16% during the same span. During both periods, EBITDA growth was generated by sales growth, whereas the relative share of EBITDA margin improvements dropped considerably by 11%. In summary, it can be said that private equity portfolio companies have used the friendly capital markets environment since 2001 to use the abundant leverage to drive sales growth, amongst other things.

The analysis of transactions from the last two recessions (defined as the deals that took place between 1990 and 1993, and between 2000 and 2003 respectively) yields even more distinct results. Figure 3 confirms that both the use of leverage and the share of sales growth played an important role in those transactions. In particular, sales growth had a strong impact and was 34% higher than in non-recession years. This shows that firms acquired in recession years offered substantial potential for value creation.

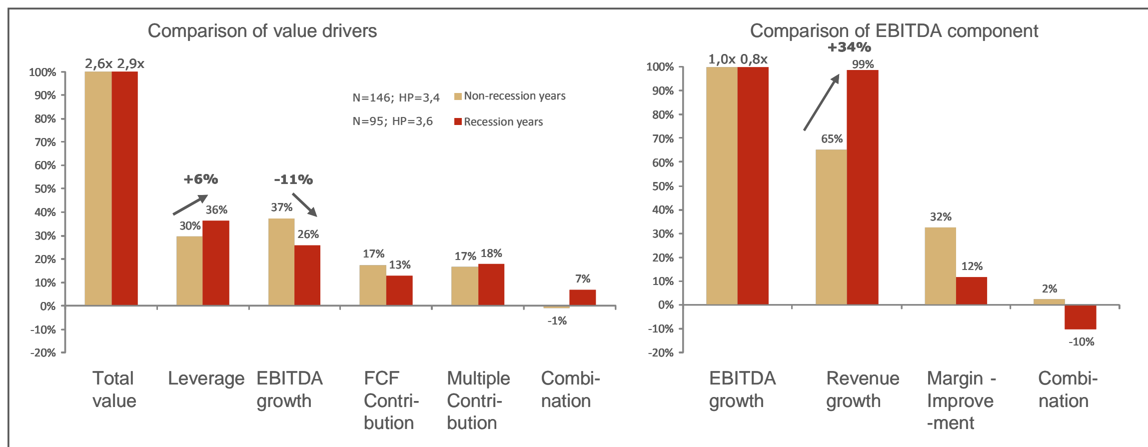


Figure 3: Value creation in private equity during boom and recession years

A comparative analysis of value drivers was conducted for firms of different sizes. The analysis reveals that the increase in enterprise value shifted to a higher leverage effect (12%) for firms with a transaction size of more than EUR 100 million. In addition, EBITDA growth was much more driven (+27%) by margin improvements when compared to smaller transaction sizes. Therefore, the study refutes the general perception that private equity creates value for smaller firms predominantly by means of efficiency gains.

In spite of this, bigger firms appear more often in the media, suggesting that private equity only outperforms public markets by using more leverage. In order to investigate this claim, both asset classes were then compared to each other by two fundamental questions:

Does private equity create value for its portfolio companies in comparison to publicly traded companies? If this is the case, what is the extent of the operational alpha created by private equity?

To answer this question, each of the 241 companies was matched to a comparable publicly traded counterpart (with respect to geography, industry, sales and EBITDA) in such a way as to minimize the differences at the time of investment. The unlevered, equity-only (unlevered) IRR was then calculated for both data sets, and the difference gives the operational alpha in private equity. Figure 4 reveals a positive alpha of 6% in private equity on an unlevered basis. Furthermore, the figure shows that, within the given sample, the higher use of leverage in private equity increased the absolute return of private equity by 21% compared to the public market.

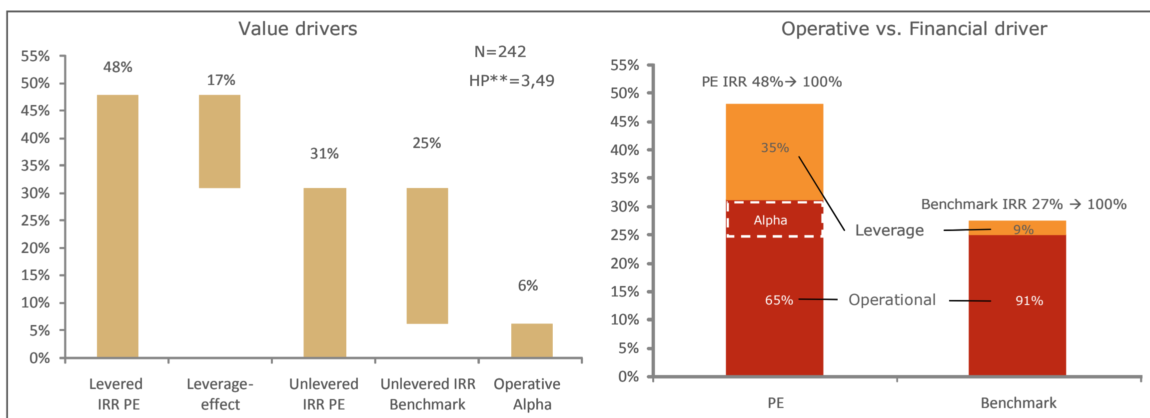


Figure. 4: Operational private equity alpha

In conclusion, the underlying study reveals that private equity has been able to create value even with reduced levels of leverage as well as an operational alpha. Two thirds of the value was created by operational enhancements, which in turn were mainly due to sales growth instead of margin improvements. Furthermore, the study shows that firms acquired in recession times not only yielded superior returns but also achieved that by increasing sales. However, increasing EBITDA margins and using higher leverage gained in importance for larger companies.

The study presented here helps to draw a clearer picture of how value is created in private equity, and serves as a basis for an informed discussion about private equity. From Capital Dynamics point of view, the study marks a big step forward for due diligence, as it improves the framework to analyze private equity value creation and makes it comparable. Until now benchmarking was only possible with respect to IRRs and multiples, but these figures do not permit conclusions to be drawn on future performance. A deeper understanding of the value creation potential of a private equity manager as well as the manager's success relative to a benchmark enables the formation of an opinion of how far a manager can be successful in the future.

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## Center for Entrepreneurial and Financial Studies (CEFS) at the Technischen Universität München

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Since 2001, **Prof. Dr. Dr. Ann-Kristin Achleitner** holds the KfW Endowed Chair in Entrepreneurial Finance and is Scientific Co-Director at the Center for Entrepreneurial and Financial Studies (CEFS) at Technische Universität München (TUM). Her research focus is in the areas of venture capital, private equity and social entrepreneurship. She also worked as an expert for the Federal Ministry of Finance on the legal and tax environment of private equity in Germany and contributed to "The Global Economic Impact of Private Equity Report 2008" as part of the World Economic Forum 2008. Prof. Achleitner earned several awards for both research and teaching including the Order of Merit of the Federal Republic of Germany in 2007.

**Katharina Lichtner** is a Managing Director and heads Research at Capital Dynamics. She has been instrumental in developing the investment and post-investment monitoring skills of Capital Dynamics. Katharina is a member of the board of directors of Capital Dynamics as well as a member of the Executive Committee. She is also member of the board of the IPEV (International Private Equity and Venture Capital Valuation Guidelines) being one of the representative of the EVCA. Previously, she was a consultant at McKinsey & Company. From 1992 through 1996, Katharina worked in a research position at the Basle Institute for Immunology. Katharina holds a PhD in Immunology and an MSc in Molecular Biology and Biochemistry from the Biocenter Basle.

**Christian Diller** is a Director and heads the Solutions team including Capital Dynamics' Portfolio & Risk Management and Structuring activities. Christian has more than six years experience in analyzing and structuring private equity portfolios. He gained his professional experience in traditional asset management divisions at Allianz Group and Pioneer Investments (UniCredit) and worked on various advisory projects for the European Private Equity and Venture Capital Association (EVCA) and Standard & Poor's. Before joining Capital Dynamics he was a research assistant at the Technical University of Munich where he received his PhD in finance specializing on risk-/return characteristics of Private Equity Funds.