

Investment valuations in private equity buyouts

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Introduction

Buyout investment math (or mathematics) is the means by which investment sponsors formally analyse the assumptions they make about the past and future of a target firm. These assumptions are the output of a process designed to carefully scrutinise the target in a comprehensive way and arrive at an investment decision. Specific calculations vary by deal. Most equity sponsors, however, will use a standard set of math to identify the elements of the investment ranging from enterprise price, to equity requirements, to expected returns. Equity sponsors, basing these calculations on well-vetted assumptions, then apply their judgment to make informed decisions about their investment. For the best private equity firms, the ultimate result is a carefully assembled portfolio poised to provide consistently positive returns over time.

Investing in private equity involves the constant interplay between quantitative, mathematical concepts and qualitative factors. The best leveraged buyout sponsors are very capable of analysing the mathematics of an individual investment. This mathematics include the determination of a reasonable purchase price, devising a capital structure that supports an investment during various business cycles and projecting the future growth and performance of a company based on extensive research, due diligence and careful consideration of the company's industry and competitive dynamics. Of course, private equity returns are ultimately achieved by human beings operating in a complicated, ever-changing domestic and global business landscape. The very best private equity sponsors are qualified at sourcing and structuring transactions; they are also adept at finding the right management teams, identifying and executing on the right acquisitions, exploiting competitive opportunities and anticipating all relevant threats.

While the quantitative and qualitative aspects of private equity investing matter equally, this chapter addresses the quantitative aspects of investing, highlighting common buyout math in the context of the buyout process. A hypothetical company, HoldCo, will be used throughout to illustrate how a sponsor would evaluate the company as an investment target. HoldCo is intended to represent a mature, stable company in a mature industry. While the specific figures and magnitudes used in each example will vary by industry and company, the examples provided are intended to clearly highlight relevant concepts.

The buyout process

Deal generation

The buyout process (see Figure 11.1) begins with deal generation. Deal opportunities come from a variety of sources including financial sponsors, corporate owners, and a network of contacts. Sponsors may be invited to evaluate and bid on a deal in the context of an auction or, less frequently, through a more proprietary arrangement. Should the deal look promising, the context provided by these situations influences how much sponsors would be willing to pay to acquire a target firm. Deal context feeds other components of the buyout process and plays a role in how the calculations done in the diligence process are later used as part of deal negotiation. In the example, HoldCo engaged an investment bank to advise it on its proposed sale. HoldCo is modestly levered at 2.0x total debt to EBITDA (earnings before interest, taxes, depreciation and amortisation) and has consistently strong cash flow characteristics of \$40 million per year. The company also has low capital expenditure requirements and an experienced management team. Through modest revenue improvement and some improved control over working capital, management believes that HoldCo is poised to increase its earnings modestly over time despite increasingly competitive market conditions. Further, HoldCo believes the sponsor's operating team has the potential to add value to the business and use its prior branding experience to protect its margins.

Due diligence

After an initial screening, the sponsor begins its formal evaluation of HoldCo by beginning its due diligence process. This process involves a detailed analysis of the company both historically and then into the future. Common diligence items range from investigation into the company's competitive environment; its strategy; its management team; elements such as analysis of revenue and earnings growth over time; and its ability to generate cash to service debt under a variety of scenarios. Most private equity firms approach the relative merits and risks of a deal using some form of SWOT analysis (i.e., Strengths, Weaknesses, Oppositions and Threats) to understand better the specific capabilities of the firm. In addition to these qualitative analyses, the sponsor will conduct a public company and trading comparables analysis to understand HoldCo's standing in terms of EBITDA margin and enterprise value among its competitors. See Table 11.1 for this analysis.

The trading comparables analysis, calculating enterprise value as a multiple of EBITDA, provides a means for identifying where HoldCo falls in its competitive set.

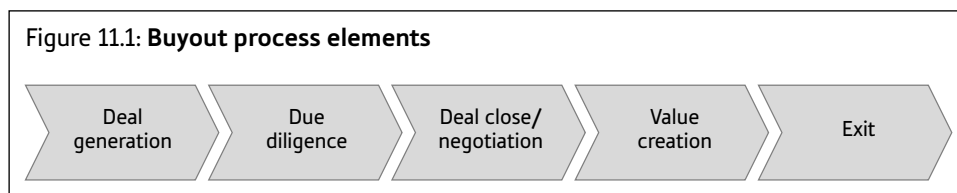


Table 11.1: HoldCo comparables analysis

	EV (\$)	TTM EBITDA (\$)	EBITDA margin (%)	EV/EBITDA
HoldCo	320	40	12.5	8.0x
Public Company 1	230	30	13.0	7.7x
Public Company 2	300	35	11.7	8.6x
...				
Public Company X	700	70	10.0	10.0x
High	700	70	13.0	10.0x
Median	310	38	12.1	8.3x
Low	230	30	10.0	7.7x

This information is then used as part of the rationale for the purchase price the sponsor would be willing to offer. In determining a purchase price, the sponsor must also identify the debt capacity the business is capable of sustaining under various pro forma scenarios. Debt capacity is also limited by the amount of debt that can be secured, depending on market conditions. In robust economies, debt multiples can range between five and six times EBITDA or more; in recessionary environments, lenders will generally offer debt multiples of four times or less. Qualitative factors also weigh heavily on a sponsor's decision of what a company is worth. For instance, a company with an excellent, well-recognised brand name, a leading market position and tremendous competitive advantages will be worth much more than most of its peers.

In the HoldCo case the sponsor determines that a multiple of approximately 8.0x trailing 12-month (TTM) EBITDA, or \$320 million, appears to be the market valuation of enterprise value for comparable companies. The sponsor ultimately wins the auction for the company using this valuation and elects to fund the purchase of the company with \$200 million of senior debt and \$120 million of equity. The debt multiple (total debt/EBITDA) is 5.0x, which for most mature, stable deals is a reasonable and supportable debt load. It is important to note that other methods also exist for conducting enterprise valuation including several types of discounted cash flow analysis. While these methods are also employed, use of comparables is prevalent due to the capability to capture market sentiment about a particular business. Recognising that current market valuations is generally the best gauge of fair value is an important part of understanding the true entrance and exit value of a buyout investment.

It is well accepted in the leveraged buyout industry and throughout private equity that there is virtually nothing more important than buying a company for the right price. If an investor pays too much for the company, it is extremely difficult to make

Table 11.2: Effect of purchase multiples on investment returns

Exit year 5

Purchase multiple	7.0x	8.0x	9.0x
Exit multiple		8.0x	
Equity purchase price	\$80	\$120	\$160
Exit enterprise value	\$371	\$371	\$371
Less debt	(\$30)	(\$30)	(\$30)
Exit equity value	\$341	\$341	\$341
IRR	34%	23%	16%
Multiple of money	4.3x	2.8x	2.1x

Table 11.3: The effect of debt on a sample investment

	Year 1			Year 5			IRR (%)	Multiple of money
	EV (\$)	Debt used (\$)	Equity used (\$)	EV (\$)	Debt value (\$)	Equity value (\$)		
No debt	100	0	100	150	0	150	8	1.5x
Debt, upside	100	50	50	150	50	100	25	2.0x
Debt, downside	100	50	50	50	50	0	0	0.0x

acceptable returns. Table 11.2 shows the difference in returns across modest differences in purchase price multiples.

As due diligence continues, the sponsor continues to seek increasingly detailed information about the business and to resolve or mitigate the impact of risks inherent in the investment. The sponsor will use this information to develop a pro forma model of HoldCo that captures its anticipated performance, including value that would be created through earnings improvement and debt reduction. Equity sponsors rarely underwrite or assume a larger purchase price multiple upon exit, but the reality is that a well-executed investment often results in a larger, more valuable company and, consequently, significant multiple expansion. The sponsor continually vets these assumptions about the future against management estimates and other resources. It is important to note that the use of debt allows the sponsor to achieve greater returns with lower equity commitments. Debt, however, also subjects the investment to risk should the company lose value over time. In the worst case, the sponsor's equity, as the residual claim, can be wiped out.

Table 11.3 illustrates how debt can help and hurt returns. In the first two examples, the company experiences modest growth, prior to an exit in the fifth year. The cal-

culations described show how debt is used to lever equity returns. In the last case, debt eliminates the value of the equity as the value of the company decreases by year five. The analyses conducted by the sponsor are intended to provide confidence that such downside cases are minimised.

Managing the investment

During the course of managing the investment, the sponsor must be vigilant in monitoring the company's performance relative to projections. Very importantly, the sponsor must pay close attention to performance statistics beyond simply revenue and earnings growth. Key working capital statistics like Days Receivables Outstanding, Days Payables Outstanding, among many others, must be monitored closely. Ultimately, because the investment is levered, the sponsor needs to ensure that the performance of the company is constantly within the debt covenants.

If the investment models call for acquisitions, all of the concepts outlined in this chapter must be considered. Acquisitions can be very accretive if done at a reasonable purchase price and properly integrated. Poorly priced and/or poorly integrated acquisitions can actually be very damaging to the ultimate performance of the investment. Throughout the management of the investment, the sponsor and management are constantly working together to address all of the issues attendant to ensuring a successful investment.

Value creation

Value creation in a leveraged buyout can come in three forms: earnings growth, debt reduction, and multiple expansion. Earnings growth is typically the most common method to increase the value of the company. Debt reduction, especially for mature

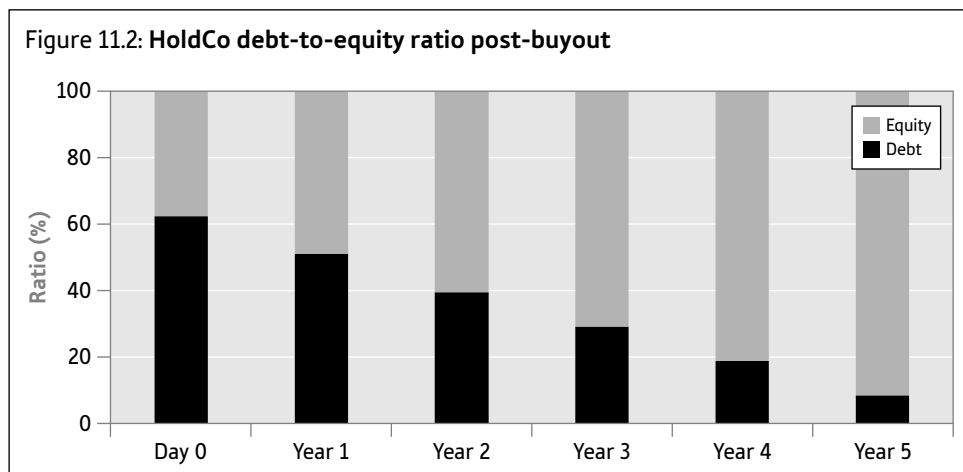


Table 11.4: Increasing value of equity post-LBO – revenue growth and debt paydown

	Pre-deal	Day 0	Year 1	Year 2	Year 3	Year 4	Year 5
EV	\$320	\$320	\$330	\$339	\$350	\$360	\$371
TTM EBITDA	\$40	\$40	\$41	\$42	\$44	\$45	\$46
Cash for debt paydown	\$32	\$32	\$32	\$33	\$34	\$35	\$36
Net debt	\$20	\$200	\$168	\$135	\$101	\$66	\$30
Value of equity	\$300	\$120	\$162	\$204	\$249	\$294	\$341
Exit IRR			35%	31%	27%	25%	23%
Multiple of money			1.3x	1.7x	2.1x	2.5x	2.8x

companies that generate significant cash flow, can also be a meaningful value contributor. Figure 11.2 shows how simple debt reduction can drive equity appreciation over time.

For private equity sponsors, the most favourable result occurs when a company can simultaneously grow earnings and reduce debt over the investment horizon. Table 11.4 outlines the tremendous growth in equity value achieved through this dynamic. Finally, sponsors rarely model multiple expansion, but it is often the case that financial sponsors and strategic acquirers will pay a much higher multiple for a company that has achieved the sponsor’s goals over the investment period.

Exiting the investment

The sponsor will carefully consider the optimal time to exit the investment based on the performance of the investment, market conditions and the sponsor’s assessment of future prospects for the company. In most cases, equity sponsors prefer to hold an investment for four to six years. The hold period for buyout investments is driven in large part by the terms of most buyout funds, which call for a five-to-six-year investment period and overall fund life of approximately 12 years. It is not uncommon for an exit to occur before the sponsor planned if a strategic or financial acquirer approaches the sponsor with an offer for the company that is too compelling to refuse. Absent a pre-emptive purchase, the sponsor will typically engage an investment bank or broker to either take the company public or sell to another buyer, where the investment process begins anew.

Conclusion

Private equity investing is an industry in which mathematical concepts are constantly intertwined with qualitative decisions by the sponsor and management

team. Optimal results can only occur when both the quantitative and qualitative decisions over the course of the investment are properly considered and effectively implemented. Success in leveraged buyout investing is driven by the successful application of key mathematical concepts; however, outstanding performance can ultimately only be achieved by the investment professionals executing on these mathematical concepts. □

Brian Gallagher is a managing partner of Twin Bridge Capital Partners. Based in Chicago, Twin Bridge focuses on investing in mid-market buyout funds and co-investments in North America. Twin Bridge currently manages over \$1 billion in separate accounts. Brian has spent most of his career in the middle-market buyout industry, having previously worked at UIB Capital, PPM America and Arthur Andersen. He received his MBA at Northwestern University's Kellogg Graduate School of Management, and a BA in Accounting from the University of Notre Dame. He holds the Chartered Financial Analyst designation and is a Certified Public Accountant. Brian is a member of the CFA Institute and AICPA.