

Paper Lbo Examples

Introduction to Paper Lbo Examples: A Practical Guide for Finance Professionals

In the high-stakes world of investment banking and private equity, the ability to perform a leveraged buyout analysis quickly and accurately is a critical skill. Among the various tools used to assess a potential acquisition, the Paper LBO stands out as a cornerstone of the interview process and a fundamental exercise for junior financiers. A Paper LBO is a simplified, back-of-the-envelope calculation that tests a candidate's understanding of cash flows, debt financing, returns, and value creation. It is called a "paper" LBO because it is often done on the spot, without a computer or financial model, using only a pen, paper, and basic arithmetic. Understanding paper LBO examples is essential for anyone looking to break into private equity or investment banking. These examples demonstrate how to structure a deal, estimate returns, and evaluate whether a transaction makes financial sense. This article explores several paper LBO examples in detail, breaking down each step and explaining the logic behind the numbers. By the end, you will have a solid grasp of how to approach a paper LBO and what key metrics to focus on.

What Is a Paper LBO and Why Does It Matter?

A leveraged buyout (LBO) occurs when a company is acquired using a significant amount of borrowed money, with the assets of the target company often serving as collateral for the debt. The goal is to generate a high return on equity by using debt to amplify returns. A Paper LBO is a simplified version of this analysis. It typically involves a set of assumptions about the purchase price, debt financing, interest rates, operating performance, and exit multiple. The candidate must calculate the internal rate of return (IRR) or multiple of money (MoM) over a specified holding period, usually five years.

Paper LBO examples are widely used in interviews because they test several key competencies: financial acumen, mental math, logical reasoning, and the ability to work under pressure. They also reveal whether a candidate understands the drivers of value creation in an LBO, such as EBITDA growth, debt paydown, and multiple expansion. Mastering paper LBO examples is not just about memorizing formulas; it is about developing an intuitive sense for how changes in assumptions affect returns.

Key Components of a Paper LBO

Before diving into specific examples, it is important to understand the core elements that make up a paper LBO. These components are consistent across most paper LBO examples and provide the framework for the analysis.

Purchase Price and Entry Multiple

The first assumption in any paper LBO is the purchase price. This is typically expressed as a multiple of EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization). For example, if a company has an EBITDA of \$100 million and is acquired at a 10x multiple, the purchase price is \$1 billion. The entry multiple is a critical driver of returns, as a higher purchase price requires more debt or equity and can lower potential returns.

Debt Financing and Capital Structure

In a typical LBO, a portion of the purchase price is funded with debt. The most common forms of debt include senior bank debt, mezzanine debt, and high-yield bonds. In a paper LBO, the debt structure is simplified. Common assumptions include a debt-to-EBITDA ratio, an interest rate, and a repayment schedule. For instance, a lender might provide debt at 5x EBITDA with an interest rate of 6% and a 5-year term. Understanding how debt financing works is crucial for constructing paper LBO examples that make sense.

Operating Performance and EBITDA Growth

The target company's operating performance over the holding period is another key input. This includes revenue growth, margin expansion, and ultimately, EBITDA growth. In paper LBO examples, EBITDA growth is often the primary driver of value creation. Simple assumptions, such as a 5% annual growth rate, are used to project future EBITDA.

Exit Multiple and Exit Year

At the end of the holding period, the investor sells the company. The exit multiple is applied to the final year's EBITDA to determine the exit price. In many paper LBO examples, the exit multiple is assumed to be the same as the entry multiple, but it can also be higher (multiple expansion) or lower (multiple contraction). The holding period is typically 5 years.

Return Calculation: IRR and MoM

The ultimate output of any paper LBO is the return to equity investors. This is measured by the internal rate of return (IRR) and the multiple of money (MoM). The IRR represents the annualized return, while the MoM shows how many times the initial equity investment is returned. For example, a 2.5x MoM over 5 years implies an IRR of roughly 20%.

Step-by-Step Paper LBO Example 1: The Standard Case

Let us walk through a simple paper LBO example to illustrate the process. This is a typical scenario you might encounter in an interview or as a training exercise.

Assumptions:

- Target EBITDA: \$50 million
- Purchase Multiple: 8x EBITDA → Purchase Price = \$400 million
- Debt Financing: 4x EBITDA = \$200 million at 5% interest
- Equity Contribution: Purchase Price minus Debt = \$200 million
- EBITDA Growth: 5% per year for 5 years
- Exit Multiple: 8x EBITDA (same as entry)
- Debt Repayment: \$20 million per year (total of \$100 million over 5 years)

Step 1: Project EBITDA

Starting with \$50 million and growing at 5% per year:

- Year 1: \$52.5 million
- Year 2: \$55.1 million
- Year 3: \$57.9 million
- Year 4: \$60.8 million
- Year 5: \$63.8 million

Step 2: Calculate Exit Price in Year 5

Exit Price = Year 5 EBITDA × Exit Multiple = \$63.8 million × 8 = \$510.4 million.

Step 3: Calculate Debt Remaining at Exit

Initial debt was \$200 million. Over 5 years, \$20 million per year is repaid, so total repayment is \$100 million. Debt remaining = \$200 million - \$100 million = \$100 million.

Step 4: Calculate Equity Value at Exit

Equity Value = Exit Price - Remaining Debt = \$510.4 million - \$100 million = \$410.4 million.

Step 5: Calculate Return

Initial equity was \$200 million. Exit equity is \$410.4 million. MoM = \$410.4 / \$200 = 2.05x. IRR over 5 years is approximately 15-16%.

This paper LBO example shows a return of about 2x, which is generally considered acceptable for a mid-market buyout. The key drivers here are EBITDA growth and debt paydown. If the exit multiple had expanded to 9x, the return would be significantly higher.

Paper LBO Example 2: The Effect of Multiple Expansion

Now, let us examine a second paper LBO example where the exit multiple is higher than the entry multiple. This scenario illustrates the power of multiple expansion in boosting returns.

Assumptions:

- Target EBITDA: \$30 million
- Purchase Multiple: 7x EBITDA → Purchase Price = \$210 million
- Debt Financing: 3.5x EBITDA = \$105 million at 6% interest
- Equity Contribution: \$105 million
- EBITDA Growth: 4% per year for 5 years
- Exit Multiple: 9x EBITDA (expansion from 7x to 9x)
- Debt Repayment: \$15 million per year (total of \$75 million over 5 years)

Step 1: Project EBITDA

- Year 1: \$31.2 million
- Year 2: \$32.4 million
- Year 3: \$33.7 million
- Year 4: \$35.1 million
- Year 5: \$36.5 million

Step 2: Calculate Exit Price in Year 5

Exit Price = \$36.5 million × 9 = \$328.5 million.

Step 3: Calculate Debt Remaining at Exit

Initial debt was \$105 million. Total repayment over 5 years is \$75 million. Debt remaining = \$105 million - \$75 million = \$30 million.

Step 4: Calculate Equity Value at Exit

Equity Value = \$328.5 million - \$30 million = \$298.5 million.

Step 5: Calculate Return

Initial equity was \$105 million. Exit equity is \$298.5 million. MoM = $\$298.5 / \$105 = 2.84x$. IRR is roughly 23-24%.

This paper LBO example demonstrates how multiple expansion can significantly enhance returns. The IRR jumps from the low teens to the mid-20s, which is a highly attractive result for most private equity funds. This is why investors often focus on sectors or companies where they believe multiple expansion is possible.

Paper LBO Example 3: Decline in EBITDA and Stressed Debt

Not all paper LBO examples end well. It is equally important to understand scenarios where performance deteriorates. This example examines a situation where EBITDA declines and debt repayment is minimal.

Assumptions:

- Target EBITDA: \$80 million
- Purchase Multiple: 9x EBITDA → Purchase Price = \$720 million
- Debt Financing: 5x EBITDA = \$400 million at 7% interest
- Equity Contribution: \$320 million
- EBITDA Growth: -2% per year for 5 years (decline)
- Exit Multiple: 7x EBITDA (contraction from 9x to 7x)
- Debt Repayment: \$10 million per year (total of \$50 million over 5 years)

Step 1: Project EBITDA

- Year 1: \$78.4 million
- Year 2: \$76.8 million
- Year 3: \$75.3 million
- Year 4: \$73.8 million
- Year 5: \$72.3 million

Step 2: Calculate Exit Price in Year 5

Exit Price = $\$72.3 \text{ million} \times 7 = \506.1 million .

Step 3: Calculate Debt Remaining at Exit

Initial debt was \$400 million. Total repayment is \$50 million. Debt remaining = $\$400 \text{ million} - \$50 \text{ million} = \$350 \text{ million}$.

Step 4: Calculate Equity Value at Exit

Equity Value = $\$506.1 \text{ million} - \$350 \text{ million} = \$156.1 \text{ million}$.

Step 5: Calculate Return

Initial equity was \$320 million. Exit equity is \$156.1 million. MoM = $\$156.1 / \$320 = 0.49x$. This represents a loss of over 50% of the initial equity. The IRR is negative.

This paper LBO example is a cautionary tale. It shows that high leverage combined with declining EBITDA and multiple contraction can destroy value. In real-world LBOs, such outcomes can lead to distressed situations, debt restructuring, or even bankruptcy. This example highlights why thorough due diligence and conservative assumptions are critical.

Common Variations in Paper LBO Examples

Paper LBO examples can vary in complexity. Some interviews include additional factors such as management fees, transaction costs, or earn-outs. More advanced paper