Wall Street Prep

The Paper LBO

Practical Guide for Private Equity Recruiting

What is the Paper LBO?

The Paper LBO is an interview exercise frequently encountered in the earlier rounds of the private equity recruiting cycle.

The structure of a paper LBO is essentially a simplified full-form LBO model, wherein the core modeling mechanics and return drivers are the same.

In practice, the exercise is designed to confirm potential candidates can demonstrate a conceptual understanding of the fundamentals of LBO modeling under timed pressure.

Interview Question Format

The exercise is completed using only a pen (or pencil) and paper, with no access to Excel or a calculator

The interviewer verbally states the prompt that details a hypothetical LBO scenario and the operating assumptions

The interviewee must describe each step in computing the implied internal rate of return (IRR) and multiple on invested capital (MOIC)

The standard time frame to complete the exercise ranges between 10 to 15 minutes

Paper LBO Model Build

Step 1 — Purchase Price

- The purchase enterprise value (TEV) can be determined by multiplying the entry multiple by the LTM EBITDA of the acquisition target
- The implicit assumption is the transaction was structured on a "cash-free, debt-free basis" (CFDF), i.e. Purchase Price = Enterprise Value

Purchase Enterprise Value (TEV) = Entry Multiple × LTM EBITDA

Step 2 — Sources and Uses of Funds

- The Sources and Uses of Funds section quantifies the total cost of completing the LBO on the "Uses" side, whereas the financing sources, such as debt and equity, that'll fund the acquisition are outlined on the "Sources" side
- The critical piece of information obtained here is the "Sponsor Equity" – the initial equity contribution by the financial sponsor to fund the purchase – which ultimately determines the returns earned on the investment

Initial LBO Debt = Initial Leverage Ratio × LTM EBITDA
Sponsor Equity = Total Uses - Initial LBO Debt

Step 3 — Financial Forecast

- The post-LBO financial performance of the target company is forecasted using the operating assumptions stated in the prompt
- The standard projection period in a paper LBO test is a five-year time horizon

Revenue = Prior Period Revenue × (1 + Revenue Growth Rate %)
EBITDA = EBITDA Margin (%) × Current Period Revenue
D&A = D&A % of Revenue × Current Period Revenue
EBIT = EBITDA – D&A
Interest Expense = LBO Debt × Interest Rate (%)
EBT = EBIT – Interest Expense
Taxes = EBT × Tax Rate (%)
Net Income = EBT – Taxes

Step 4 — Free Cash Flow Projection (FCF)

- The free cash flows (FCFs) generated by the LBO target over the course of the holding period are utilized to paydown the initial LBO debt raised to fund the purchase
- The majority of paper LBO tests assume no mandatory principal amortization until exit, or that the FCF remaining each period is entirely allocated toward the repayment of debt ("full cash sweep")

Capex = Capex % of Revenue × Current Period Revenue
Δ in Net Working Capital (NWC) = Δ in NWC % of Revenue × Current Period Revenue
Free Cash Flow (FCF) = Net Income + D&A – Capex – Δ in NWC
Cumulative Free Cash Flow = Σ Free Cash Flows (FCFs)

Step 5 — Exit Analysis

- The implied returns on an LBO are measured via the internal rate of return (IRR) and the multiple on invested capital (MOIC)
- The MOIC is calculated by dividing the exit equity value by the initial sponsor equity contribution
- The IRR can be approximated using the Rule of 72, which estimates the number of years required for an investment to double in value by dividing 72 by the rate of return

Exit Enterprise Value (TEV) = Exit Multiple × Exit EBITDA
Ending Net Debt = Initial LBO Debt – Cumulative Free Cash Flow
Exit Equity Value = Exit Enterprise Value (TEV) – Ending Net Debt
Multiple on Invested Capital (MOIC) = Exit Equity Value ÷ Initial Sponsor Equity

Quick Tips

- Be attentive to the details stated in the prompt and write down each operating assumption
- Simplify the assumptions and recognize the implied return profile is expected to be an approximation, rather than decimal precision
- Ensure the shorthand, mental math calculations are easier to compute by rounding numerical values to the nearest multiple of five or ten
- Consistent practice under timed pressure is necessary to become comfortable and perform well with the actual testing conditions
- Memorize the most common MOIC to IRR approximations per the Rule of 72
  (Five-Year Hold: 1.5× = ~10%, 2.0× = ~15%, 2.5× = ~20%, 3.0× = ~25%, 3.5× = ~30%)