Technical Interview Preparation

Keep in mind that this guide by no means is everything you must know to go into an interview, but this is a good starting point for you to learn specific concepts and terms before performing your own research on the internet.

Technical finance interviews assess a candidate's knowledge of financial concepts, analytical skills, and problem-solving abilities. These interviews require a strong foundation in financial theory and the ability to apply these concepts to real-world scenarios. This guide will help you prepare for the technical side of finance interviews and understand the key areas to study.

What is a Technical Finance Interview?

Technical interviews in finance are designed to evaluate your understanding of financial principles, your ability to perform calculations, and your comprehension of industry-specific knowledge. You'll be expected to answer questions on topics such as valuation, financial modeling, accounting principles, and market analysis. The purpose of these interviews is to test your proficiency in finance-related technical skills, your ability to analyze financial statements, and your knowledge of economic indicators, market trends, and company performance.

Common Technical Questions:
These questions often revolve around financial modeling, accounting, market analysis, and valuation methods like DCF (Discounted Cash Flow) or comparable companies.

Key Areas/Concepts

1. Equity Value and Enterprise Value

- **Equity Value:** Represents the value of a company's shareholders' equity. It's the market value of all shares outstanding and is often referred to as "market capitalization."
- **Enterprise Value (EV):** EV is the total value of a company, including debt and excluding cash. It provides a more accurate valuation as it considers the capital structure and allows comparison between companies with varying levels of debt.
- **Key Interview Questions and Sample Answers:**

1. Why do we consider both Enterprise value and Equity Value when valuing a company?

   Answer: Enterprise Value represents the total value of the company, accounting for both debt and equity, making it relevant to all stakeholders, including lenders and shareholders. Equity Value only reflects the portion attributable to shareholders. In acquisitions, Enterprise Value is considered because it includes debt that may need to be repaid.

2. What's the formula for calculating Enterprise Value?

   Answer: The basic formula is **Enterprise Value = Equity Value + Debt + Preferred Stock + Minority Interest - Cash**. This formula ensures that all relevant stakeholders are accounted for when determining the company's total value.

3. How do you calculate fully diluted shares for Equity Value?

   Answer: Fully diluted shares are calculated by taking the basic number of shares outstanding and adding in any dilutive securities like stock options or convertible bonds. Using the Treasury Stock Method, the impact of options is accounted for by assuming the proceeds from option exercises are used to repurchase shares at the current market price.

4. Why is cash subtracted from Enterprise Value?

   Answer: Cash is subtracted because it is a non-operating asset. In most cases, cash can be used to pay off a portion of the debt, reducing the net cost of acquiring the company.

2. Accounting

- **Key Concepts:**
  Understanding financial statements (Income Statement, Balance Sheet, and Cash Flow Statement) and how they are interconnected is crucial. You should also know how to adjust financial statements based on various scenarios (e.g., depreciation, changes in working capital).
- **Key Interview Questions and Sample Answers:**

1. Walk me through the three main financial statements and their purpose.

   Answer: The three key financial statements are the Income Statement, Balance Sheet, and Cash Flow Statement. The Income Statement details the company's revenues and expenses, culminating in Net Income. The Balance Sheet provides a snapshot of the company's Assets, Liabilities, and Equity at a given point in time. Lastly, the Cash Flow Statement explains cash inflows and outflows, separated into operations, investing, and financing activities.

2. If depreciation increases by $10, how does it affect the financial statements?

   Answer: A $10 increase in depreciation would reduce Net Income by $6, assuming a 40% tax rate, as depreciation is a non-cash expense that lowers taxable income. On the Cash Flow Statement, Net Income decreases by $6, but depreciation is added back as a non-cash expense, resulting in a net increase in cash flow from operations by $4. On the Balance Sheet, the asset value of PP&E decreases by $10 due to depreciation, while retained earnings fall by $6, keeping the Balance Sheet balanced.

3. If a company issues $100 of new debt, how does this affect the three financial statements?

   Answer: On the Balance Sheet, debt increases by $100, and cash increases by the same amount, keeping it balanced. On the Income Statement, there is no immediate impact. On the Cash Flow Statement, the $100 inflow will show up under cash from financing activities.

4. What's the difference between accounts payable and accrued expenses?

   Answer: Both represent liabilities, but accounts payable is typically related to payments for goods or services the company has received and will pay for in the short term. Accrued expenses represent costs incurred but not yet paid, such as wages or utilities.

3. Valuation

- **Key Concepts:**
  Valuation methods like Comparable Companies Analysis (Comps), Precedent Transactions, and Discounted Cash Flow (DCF) are central to technical finance interviews. Knowing when to apply each method and the assumptions behind them is critical.
- **Valuation Methods:**
  - **Comps:** Finding similar companies to assess valuation based on multiples.
  - **Precedent Transactions:** Looking at historical M&A transactions for valuation benchmarks.
  - **DCF:** Valuing a company based on the present value of future cash flows.
- **Key Interview Questions and Sample Answers:**

1. What are some methods used to value a company?

   Answer: The three most common methods are Comparable Company Analysis (Comps), Precedent Transactions, and Discounted Cash Flow (DCF). Comps involve comparing the company to similar companies using multiples like EV/EBITDA. Precedent Transactions look at past M&A deals for similar companies. DCF estimates future cash flows and discounts them back to present value using the company's cost of capital.

2. When would you use an LBO valuation over a DCF valuation?

   Answer: An LBO valuation is typically used when assessing a company that is a potential leveraged buyout target, often in private equity. A DCF is better suited for companies with stable cash flows where future projections are more reliable. LBOs focus more on returns generated through financial leverage.

3. Which valuation method typically gives the highest valuation, and why?

   Answer: Precedent Transactions usually give the highest valuation because they reflect the premiums paid in M&A deals, especially when buyers are motivated by synergies, strategic acquisitions, or competitive bidding.

4. Discounted Cash Flow (DCF)

- **Key Concepts:**
  The DCF model values a company based on the present value of its projected future cash flows. Candidates need to know how to calculate free cash flow, determine the discount rate (WACC), and assess the terminal value (either through the perpetuity growth method or exit multiple method).
- **Key Interview Questions and Sample Answers:**

1. Walk me through a basic DCF model.

   Answer: In a DCF model, the first step is to project a company's free cash flows over a specific forecast period, typically 5-10 years. Free cash flow is calculated from the company's financial statements. Next, these projected free cash flows are discounted back to the present value using the company's Weighted Average Cost of Capital (WACC), which represents the company's cost of debt and equity. After the forecast period, a terminal value is calculated to account for the cash flows beyond the forecast horizon. The terminal value is discounted back to the present and added to the sum of the present value of the free cash flows. Finally, the total value is the enterprise value of the company, and subtracting debt and adding cash gives the equity value. Dividing this by the number of shares outstanding provides the implied stock price.

2. How do you calculate free cash flow?

   Answer: Free cash flow is calculated by starting with EBIT (Earnings Before Interest and Taxes), then subtracting taxes to get EBIAT (Earnings Before Interest After Taxes). You then add back depreciation and amortization (non-cash expenses), subtract capital expenditures (CapEx), and account for changes in working capital. The formula is typically: **Free Cash Flow = EBIT × (1 - Tax Rate) + Depreciation & Amortization - CapEx - Change in Working Capital**. This represents the cash available to the company after accounting for all operational expenses and investments in its business.

3. How do you calculate the terminal value in a DCF model?

   Answer: There are two common methods. The first is the **Perpetuity Growth Model**, where you assume the company grows perpetually at a constant rate. The formula is: **Terminal Value = Final Year Free Cash Flow × (1 + Growth Rate) / (Discount Rate - Growth Rate)**. The second is the **Exit Multiple Method**, where you apply a market multiple to the company's financial metrics, like EBITDA, at the end of the projection period.

4. Why do you subtract changes in working capital when calculating free cash flow?

   Answer: Changes in working capital represent operational cash flows tied up in short-term assets and liabilities. If working capital increases, the company is using cash (e.g., to build inventory), which reduces free cash flow. If working capital decreases, cash is freed up, increasing free cash flow.

5. Leveraged Buyout (LBO) Model

- **Key Concepts:**
  LBOs involve purchasing a company primarily through debt and using the company's cash flow to pay down the debt over time. Private equity professionals commonly use this model to assess acquisition opportunities. You should understand the structure, how to calculate returns (IRR), and how leverage affects the deal.
- **Key Interview Questions and Sample Answers:**

1. Walk me through a basic LBO model.

   Answer: In an LBO model, you assume a company is acquired using a significant amount of debt. The company's cash flow is used to pay down the debt over time, with the goal of eventually selling the company or going public to achieve a return on equity. Key drivers of returns in an LBO include the purchase price, exit price, debt repayment, and operational improvements.

2. What are the key drivers of returns in an LBO model?

   Answer: The primary drivers are the purchase price, the exit price, the amount of leverage used, and operational improvements. Lowering the purchase price or increasing the exit multiple typically increases returns, as does increasing leverage, which amplifies equity returns.

3. How does an LBO model differ from a typical DCF model?

   Answer: An LBO model focuses on how debt is used to finance a purchase and how the debt is paid off over time using the company's cash flows. Unlike a DCF, which values a company based on cash flows and intrinsic value, the LBO model prioritizes returns to the equity investors based on leverage and exit strategies.

6. Merger Model

- **Key Concepts:**
  A merger model analyzes the financial impact of a merger or acquisition. It's used to determine if a deal will be accretive or dilutive to the acquiring company's earnings per share (EPS). Key components include purchase price, synergy analysis, and funding sources.
- **Key Interview Questions and Sample Answers:**

1. What is accretion and dilution in the context of M&A?

   Answer: Accretion occurs when the buyer's Earnings Per Share (EPS) increases after the acquisition, while dilution occurs when EPS decreases. Whether a deal is accretive or dilutive depends on the price paid for the target, the financing structure (cash, debt, stock), and the relative EPS of the buyer and seller.

2. What are the main synergies in a merger and how do they affect the valuation?

   Answer: Synergies are the financial benefits that arise when two companies merge, often including cost reductions (e.g., eliminating redundant operations) and revenue increases (e.g., cross-selling opportunities). Synergies make the deal more accretive by increasing future cash flows and justifying a higher purchase price.

3. How does the purchase method (cash, stock, debt) affect a merger's accretion/dilution analysis?

   Answer: If cash is used, the deal is more likely to be accretive due to the lower cost of capital for cash. If stock is used, the deal could be dilutive, especially if the buyer's P/E ratio is higher than the seller's. Debt can also impact dilution depending on the cost of borrowing.

Areas of Focus by Career

In the follow finance career paths, there will be a lot of overlap between different fields as general knowledge will be necessary going into interviews. For example, an Investment Banking interview might still ask you questions about a leveraged buyout (LBO) even though that is a more prominent concept in Private Equity.

1. Investment Banking

- **Valuation:**
  Master various valuation techniques like Comparable Company Analysis (Comps), Precedent Transactions, and Discounted Cash Flow (DCF). You need to understand how each method is applied, the assumptions that drive them, and their limitations. Additionally, be comfortable with calculating multiples (P/E, EV/EBITDA, etc.).
- **Mergers & Acquisitions (M&A):**
  Know the entire M&A process, from deal origination and due diligence to valuation and post-merger integration. Key areas to study include synergy estimation, deal structuring (cash vs. stock vs. debt), and accretion/dilution analysis.
- **Financial Modeling:**
  Build strong proficiency in financial modeling, particularly around creating dynamic models in Excel that project financial statements and cash flows. You should be able to build models from scratch, including three-statement models, and understand the sensitivity analysis for different scenarios.
- **Capital Structure:**
  Learn how different financing decisions (debt vs. equity) affect a company's capital structure, its cost of capital, and overall valuation. Understand leverage, the trade-off between debt and equity, and how these decisions impact risk and return.

Preparation Focus:
Deep understanding of how valuation methods link with real-world transactions, proficiency in financial modeling, and the M&A process.

2. Sales & Trading

- **Market Trends & Macroeconomics:**
  Sales and trading professionals must stay updated on market trends and macroeconomic indicators such as GDP, inflation, and interest rates. Understanding how these factors affect asset prices is critical.
- **Securities Trading:**
  Knowledge of different securities (equities, bonds, commodities) and how they are traded in the market is fundamental. You should also understand key concepts like bid-ask spreads, market liquidity, and order flow.
- **Risk Analysis:**
  Sales and trading roles require a deep understanding of how to manage market risk, credit risk, and liquidity risk. Techniques like hedging, stop-loss orders, and diversification are frequently employed.
- **Derivatives and Hedging:**
  Derivatives, including futures, options, and swaps, are crucial for hedging positions or speculating on market movements. Understanding how to price and trade these instruments is key.

Preparation Focus:
Proficiency in market analysis, securities trading, and risk management, with a focus on macroeconomic impact.

3. Private Equity

- **Leveraged Buyouts (LBO):**
  LBO modeling is the cornerstone of private equity. You should know how to build an LBO model, focusing on debt structuring, equity returns, and sensitivity analysis. Key drivers include purchase price, exit price, debt paydown, and operational improvements.
- **Valuation and Due Diligence:**
  Beyond LBOs, private equity deals involve extensive valuation work. You need to understand how to value companies, especially those that require operational improvements, and how to conduct thorough due diligence.
- **Portfolio Management:**
  Private equity is not only about acquisitions but also managing portfolio companies to generate returns. Learn how PE firms implement strategies to improve efficiency, increase revenues, and optimize costs post-acquisition.
- **Exit Strategies:**
  Understand the different ways private equity firms exit their investments, whether through IPOs, strategic sales, or secondary buyouts. Learn about the timing and factors that influence exit decisions, including market conditions and company performance.

Preparation Focus:
Mastering LBO modeling, valuation for high-leverage transactions, and strategies for improving portfolio companies.

4. Asset Management

- **Portfolio Diversification:**
  Asset managers aim to create a well-diversified portfolio to manage risk and optimize returns. Understanding asset allocation across various asset classes (stocks, bonds, real estate, etc.) is critical for managing risk.
- **Investment Strategy:**
  You must be familiar with different investment strategies (growth vs. value investing, active vs. passive management) and how to implement them based on a client's risk tolerance and financial goals.
- **Client Risk Profiles:**
  Asset managers tailor portfolios based on client risk profiles, whether they are conservative, moderate, or aggressive investors. Know how to assess risk profiles and adjust portfolios accordingly.
- **Asset Allocation and Rebalancing:**
  The process of distributing investments across different asset classes to balance risk and reward is key. Regular rebalancing ensures that the portfolio remains aligned with the client's goals and risk tolerance.

Preparation Focus:
Solid understanding of portfolio diversification, risk profiling, and investment strategy execution.

5. Corporate Finance

- **Capital Budgeting:**
  Corporate finance professionals evaluate long-term investment projects, so be comfortable with techniques like Net Present Value (NPV) and Internal Rate of Return (IRR). You should also understand payback periods, profitability index, and other project appraisal methods.
- **Financial Planning & Analysis (FP&A):**
  You will focus on budgeting, forecasting, and variance analysis. Be prepared to work with financial statements to create detailed forecasts, track performance against budgets, and analyze operational metrics.
- **Capital Structure & Cost of Capital:**
  Corporate finance involves balancing equity, debt, and other funding sources. Understand the implications of different financing choices, how to calculate WACC, and how capital structure decisions affect a company's risk and valuation.
- **Working Capital Management:**
  Managing working capital—cash, inventory, accounts receivable, and accounts payable—is essential for maintaining liquidity. Know the strategies for optimizing working capital to support day-to-day operations.

Preparation Focus:
Strong grasp of capital budgeting, cost of capital analysis, and financial planning tools for decision-making.

6. Hedge Funds

- **Portfolio Management:**
  Hedge funds manage a portfolio of various securities. Understand how portfolio managers assess risk and returns, make decisions on asset allocation, and rebalance portfolios to maximize alpha (excess returns over the benchmark).
- **Risk Management:**
  Hedge funds employ sophisticated risk management strategies to limit downside risk. This includes using derivatives like options and futures for hedging, as well as implementing value-at-risk (VaR) measures and stress tests.
- **Long/Short Strategies:**
  Many hedge funds use long/short strategies, meaning they buy undervalued securities (long positions) while simultaneously selling overvalued securities (short positions). You should understand how to evaluate securities for both long and short positions.
- **Leverage and Liquidity:**
  Hedge funds often use leverage to amplify returns. Understand the risks associated with leverage and liquidity management, especially in volatile markets.

Preparation Focus:
Familiarity with portfolio management techniques, risk management strategies, and long/short investment strategies.

Other Useful Concepts

Accounting

- **Financial Reporting:**
  Accounting involves preparing accurate financial reports, adhering to regulatory standards like GAAP or IFRS. You should be well-versed in creating and interpreting Income Statements, Balance Sheets, and Cash Flow Statements.
- **Auditing and Compliance:**
  Auditors ensure that financial statements are free from material misstatement. You should understand the basics of both internal and external auditing and how compliance with accounting standards is maintained.
- **Reconciliation and Adjustments:**
  Reconciling accounts is fundamental in accounting. Be comfortable with making adjustments for accruals, deferrals, and other accounting entries that affect the financial statements.
- **Accounting Principles (GAAP/IFRS):**
  Understanding GAAP (Generally Accepted Accounting Principles) or IFRS (International Financial Reporting Standards) is critical, especially regarding revenue recognition, asset valuation, and depreciation methods.

Preparation Focus:
Master financial reporting and compliance principles, with an emphasis on real-world application and audits.

Venture Capital

- **Startup Valuation:**
  Venture capital involves investing in early-stage companies, often pre-revenue. Understand how to value startups using non-traditional methods like comparable companies and market sizing, as well as more speculative factors like market potential and scalability.
- **Funding Rounds and Equity:**
  VC investors participate in various funding rounds (seed, Series A, B, etc.). Learn the structure of these rounds, how equity dilution works, and how venture capitalists assess valuations across different stages.
- **Market Potential & Scalability:**
  Venture capitalists invest in companies with high growth potential. You need to assess the scalability of business models, market penetration strategies, and the ability to expand into new markets or geographies.
- **Exit Strategies:**
  Venture capital investments are typically exited through IPOs or acquisitions. Learn about the factors influencing exit timing, including market conditions, company maturity, and potential acquirers.

Preparation Focus:
Expertise in startup valuation, funding round structures, and high-growth market potential.

Common Financial Ratios and Metrics

Understanding key financial ratios is essential for technical interviews. Some ratios and metrics you may be asked about include:

- **Profitability Ratios:**
  - Return on Equity (ROE), Return on Assets (ROA), Gross Profit Margin
- **Liquidity Ratios:**
  - Current Ratio, Quick Ratio
- **Leverage Ratios:**
  - Debt-to-Equity Ratio, Interest Coverage Ratio
- **Efficiency Ratios:**
  - Inventory Turnover, Asset Turnover
- **Valuation Metrics:**
  - Price-to-Earnings (P/E), EV/EBITDA, Price-to-Book (P/B)

Interview Preparation Tips

1. **Know Your Financial Statements Inside and Out:**
   Understand how the balance sheet, income statement, and cash flow statement are connected. Be prepared to explain how specific changes (e.g., depreciation, inventory, capital expenditures) affect all three.
2. **Practice Valuation Methods:**
   Be comfortable walking through a DCF, explaining key assumptions, and comparing it to other valuation methods like Comps and Precedent Transactions.
3. **Stay Updated on Market Trends:**
   Employers want candidates who are in tune with the financial markets. Be ready to discuss current economic conditions, interest rate trends, and their impact on investments.
4. **Review Financial Models:**
   If you've built financial models before, make sure you can explain your process clearly and answer questions about assumptions and key inputs.
5. **Practice with Mock Interviews:**
   Probably the most important step in your preparation. Simulate the interview environment by practicing with a mentor or peer. Get comfortable explaining your thought process out loud because you may know the concepts top to bottom, but explaining them in a real context may be difficult.

FAQs about Technical Interviews

- **How detailed should my answers be?**
  Be concise but thorough. Explain your logic clearly, and if the interviewer wants more details, they will ask follow-up questions.
- **What if I don’t know the answer to a question?**
  If you’re unsure, explain your thought process or how you would approach finding the answer. Don’t guess; honesty is better than incorrect information.
- **How much financial modeling will I need to know?**
  For some roles like investment banking, financial modeling is critical, and you may need to perform an on-the-spot case study. For others, a general understanding may be sufficient.
- **Why do I need to know all this information?**
  Mastering these concepts will take time, and much of the material may not directly apply to your day-to-day work. However, it's crucial to understand this information to demonstrate to recruiters and interviewers your genuine interest in finance and your commitment to learning. Finance is an incredibly competitive industry, and employers want to see that you're willing to put in the effort to develop your skills ahead of time.

Use the space below to brainstorm and craft out some answers to some of the questions: