Valuation and Discounted Cash Flow (DCF) Analysis Case Study: Jazz Pharmaceuticals [JAZZ] and its Drug Pipeline

Key Franchises

SLEEP  HEMATOLOGY/ONCOLOGY  PAIN  PSYCHIATRY

XYREM®
JZP-110
JZP-386

Erwinaze®
PRIALT®
Fazaclo®
Versacloz®

Asparec™
Leukotac™

In this case study, you’ll complete an extensive analysis of Jazz Pharmaceuticals [JAZZ], a leading US-based specialty pharmaceuticals company with a direct sales presence in North America and Europe, and distribution via partners in the rest of the world.

You will build a flexible valuation model for the company, including a 3-statement projection model with revenue and expense assumptions based on the company’s current drugs and future drug pipeline.

You will also select appropriate sets of comparable public companies and precedent transactions, calculate valuation multiples for them, and then build a 10-year discounted cash flow (DCF) analysis; you will combine all of these methods to determine the company’s implied share price.

Finally, in the last module of this case study, you will interpret the output of the model and make recommendations from 3 different perspectives:

1. An investment analyst at a long/short equity hedge fund or asset management firm that is considering JAZZ as a potential investment.

http://breakingintowallstreet.com
http://www.mergersandinquisitions.com
2. An **equity research associate** at a bulge bracket investment bank that is writing a report on JAZZ and needs to make a “Buy,” “Sell,” or “Hold” recommendation.

3. An **investment banker** that is pitching JAZZ on a potential sale of the company, and must present his thoughts on the company’s valuation and the price that potential acquirers might pay.

For each perspective, you will write a document that sums up your recommendations: a stock pitch, an equity research report, and an investment banking client advisory presentation.

**Company and Opportunity Overview**

JAZZ is a rapidly growing “specialty” pharmaceutical company. Unlike standard pharmaceutical companies, specialty firms focus on niche diseases and chronic conditions; often, there are fewer than 200,000 patients suffering from these diseases.

The company recorded $923 million in revenue and $423 million in EBITDA in the last twelve months (LTM) as of this case study, and currently trades at LTM revenue and EBITDA multiples of 10x and 22x, respectively.

Its stock price has increased dramatically over the past year, rising from $60 per share to over $170 per share before it fell back down to the $130-$140 range recently.

The company’s growth has been driven by strong sales of its key product, Xyrem, a patent-protected “orphan drug” for treating cataplexy and excessive daytime sleepiness (EDS) in patients with narcolepsy. As of the end of the company’s most recent fiscal year, Xyrem was treating 11,250 patients.

The company also sells and develops other drugs, but Xyrem comprises 66% of its sales.

The key risk factor is that the company’s patents on Xyrem expire in 5-6 years’ time and it is unable to make up lost revenue by discovering or acquiring other viable drugs; generics may come to the market even sooner than that due to several pending lawsuits.

The “Bull Case” for JAZZ is that Xyrem continues to grow rapidly in both pricing and volume; once the patents expire, it is able to make up the difference by shifting into other products.

The “Bear Case” is that the company is not able to replenish its drug pipeline, or that Xyrem sales fall rapidly due to earlier-than-expected generics.

Your job is to decide which of these views, if any, is correct, and to then make an investment recommendation (for the hedge fund / asset management and equity research cases), or a client recommendation on the company’s best options going forward (for the investment banking case).

http://breakingintowallstreet.com
http://www.mergersandinquisitions.com
Part 1: Reviewing the Data and the Process

In Part 1 of this case study, you will review relevant documents and presentations for the company, including:

- Its most recent annual (10-K) and interim (10-Q) reports.
- Its recent investor presentations and earnings call transcripts.
- Industry data and research from 3rd parties.
- Its drug pipeline and the status of each drug it is selling or developing.
- Equity research reports on the company.
- The results of your own “channel checks” related to JAZZ’s products, including the potential market size, number of patients, and pricing changes.

In this segment of the case study, you will also learn the purpose of a valuation, the overall process and strategy you should use when valuing any company, and how the business model of biotech/pharmaceutical companies affects the valuation.

Part 2: Building a 3-Statement Model for JAZZ

Once you’ve done the initial data gathering, you will build a 3-statement model for JAZZ, paying particular attention to its revenue and expenses and how its current and future drugs contribute to those.

Since we have already covered several 3-statement models in the course, we will NOT go through every last detail in this set of lessons – instead, we will focus on the aspects that are interesting and different, such as how to project revenue for a pharmaceutical company.

Technically, you do not need a full 3-statement projection model to value a company; you just need estimates for its revenue, EBITDA, and Free Cash Flow figures.

However, we will complete this exercise anyway so that you have an additional 3-statement model template for your own reference.

Please make sure your model reflects the following points:

- **Time Period:** You should project the company’s 3 financial statements **10 years into the future** because several of its key patents expire within that time frame.
- **Revenue Projections:** Instead of assuming a simple percentage growth rate for revenue, split it up into the company’s main product lines and potential future products.
  - **Existing Products:** At the minimum, you should project sales of Xyrem, Erwinaze, and Defitelio separately. Less significant revenue streams can be consolidated into an “Other” category.

http://breakingintowallstreet.com
http://www.mergersandinquisitions.com
Pipeline Drugs: You should consider JZP-110 and JZP-386 since the company mentions both products in its filings and investor presentations; treatment for other pipeline drugs is up to you. Make sure you risk-adjust revenue from pipeline drugs!

Method of Projection: Estimate future revenue from each product line based on the number of patients and the average price per patient, and/or based on total market size and JAZZ’s market share.

Channel Checks: Your estimates for revenue should be informed by the channel checks you’ve conducted, commentary in industry research, and equity research projections.

- Expense Projections: You can use simple % of revenue estimates for many of the expenses, but make sure you link SG&A to the number of sales reps the company employs.
- Toggles / Sensitivities: Make sure your model handles allows for Xyrem generic competition in different years, and at different prices. You should also build in sensitivity toggles for key assumptions such as pricing and volume growth.
- Level of Detail: You do not need a separate debt schedule, PP&E schedule, or any other separate schedules except for the revenue/expense schedules detailed above and a separate area for key Balance Sheet and Cash Flow Statement projections.

Part 3: Selecting Public Comps and Precedent Transactions and Running the Numbers

Once you have the 10-year financial statement projections for JAZZ, you will begin the valuation process by selecting comparable public companies and precedent transactions and calculating median valuation multiples for both sets.

Please use the following guidelines when you complete this exercise:

- Selection Criteria: The exact criteria is up to you, but make sure you consider the industry classifications, size (e.g., revenue or EBITDA), geography, and time period (only relevant for precedent transactions).
- Required Metrics and Multiples: This is up to your discretion, but at the minimum you should include Last Twelve Months (LTM) and 1-year forward revenue and EBITDA multiples. If you think something else is relevant, include it. For precedent transactions, only worry about historical multiples.
- Level of Detail: Do not agonize over finding every last non-recurring charge and making your calculations “perfect” – if you see a justifiable add-back, add it back, but don’t spend hours analyzing every single company in your set. For precedent transactions, focus on picking the right set of transactions in the first place and do not worry about “scrubbing” each transaction. If you find solid data in 3rd party sources, use it.

http://breakingintowallstreet.com
http://www.mergersandinquisitions.com
• **Calendarization:** The metrics and multiples for the precedent transactions should be based on the most recent Last Twelve Months (LTM) period from just before the deal was announced. For example, if the deal was announced on April 10th and the seller’s Q1 numbers were not yet available, use its most recent fiscal year numbers from December 31st the year before. On the other hand, if the deal was announced on May 15th and the Q1 numbers were available by then, use the twelve months between April 1st last year and March 31st this year for the numbers.

For the public comps, make sure each comparable company matches JAZZ’s fiscal year end of December 31st.

**Part 4: Building a Discounted Cash Flow (DCF) Analysis for JAZZ**

In this part of the case study, you’ll build a discounted cash flow analysis for JAZZ, based on your 3-statement operating model, public comps, and precedent transactions.

In addition to building the model itself, you will also master the concepts behind the DCF, including:

- The **theory** behind a DCF, and what makes it tricky to use in practice.
- The step-by-step **process** required to build any DCF.
- How to **project** important items such as Unlevered Free Cash Flow, Working Capital, Capital Expenditures, and more.
- Why we favor **Unlevered Free Cash Flow** over Levered Free Cash Flow.
- How to calculate the **discount rate**, and alternate approaches when data is scarce.
- How to calculate the **Terminal Value**, what it means, and the intuition and theory behind the formulas.
- An overview of more advanced items and special cases (e.g., multiple stages, stub periods, acquisitions, and private companies).

Please follow these guidelines in your analysis:

- **Financial Projections:** These should flow in from the 3-statement model you built for JAZZ, and you should be able to adjust the key assumptions via the sensitivity toggles you set up in the beginning. You should show 10 full years of cash flow projections in the analysis, since some of JAZZ’s key patents expire in the middle of that period.
- **Type of Analysis:** You will complete an **Unlevered** DCF here because it is more standard and because Unlevered FCF easier to forecast. This means that you will also use WACC for the discount rate, and that you’ll have to “back into” the implied Equity Value and implied Share Price at the end.

http://breakingintowallstreet.com
http://www.mergersandinquisitions.com
• **Terminal Value:** Your model should support calculating Terminal Value via *both* the Multiples Method and the Gordon Growth Method, and you should be able to justify the baseline figures you use for each method.

• **Sensitivity Tables:** Your sensitivities from this analysis should show the company’s implied valuation under a wide range of different scenarios: Xyrem generics entering the market sooner or later than expected, future revenue/expense differing from your projections, and a range of different discount rates, terminal growth rates, and/or terminal multiples.

**Part 5: Interpreting the Output of the Valuation and Making Client/Investment Recommendations**

In this last segment of the case study, **you’ll learn how financiers and bankers use valuations in real life** – to make investment recommendations, and to advise clients on their options.

You’ll begin by linking together the output from all 3 methodologies we used in this course – public comps, precedent transactions, and the DCF – and creating the “football field” graph so you can get an overview of the company’s implied value.

Then, you’ll learn how an investment banker, equity research associate, and hedge fund / asset management analyst, would interpret the numbers differently.

To do that, you will create 3 key documents that might be based on this type of valuation:

1. **Stock Pitch for Hedge Fund and Asset Management Roles:** You’ll learn how to structure your investment thesis, how to determine catalysts and risk factors, and how to use the output of this valuation to make an investment recommendation grounded in reality.

2. **Equity Research Report:** While this is similar to the stock pitch above, the format, writing style, and conclusions will be different because you’ll be writing this report about a company that your bank might be doing business with. As a result, “Buy” recommendations tend to be heavily favored.

3. **Investment Banking Client Recommendation:** Finally, you’ll learn how a banker would advise JAZZ on the price to expect in a sell-side M&A process, where the Board of Directors decides to sell the company. You’ll also learn how a bank might structure and present its recommendations in a concise presentation.

By the end of this module, you’ll understand **valuation** – perhaps the most important concept in financial modeling – in incredible depth, from the perspective of both buy-side and sell-side professionals.

http://breakingintowallstreet.com
http://www.mergersandinquisitions.com
More importantly, you’ll out-perform other candidates in interviews and on the job because you’ll understand not only the “What” and the “How,” but also the “Why” and what “What Next” better than anyone else.

http://breakingintowallstreet.com
http://www.mergersandinquisitions.com