Equity valuation report

Lululemon DCF Valuation Pipeline

A five-year discounted cash flow valuation of Lululemon Athletica built as a data pipeline: SEC EDGAR filings ingested to S3, normalized through bronze, silver, and gold layers, analyzed with SQL window functions, and valued under bear, base, and bull cases. A reverse DCF backs out the assumptions implied by the market price.

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Introduction

This report presents a discounted cash flow valuation of Lululemon Athletica and the data pipeline that produces it. The valuation could be built in a spreadsheet; the purpose of the project is the pipeline: automated ingest from SEC filings, a reusable normalization layer, SQL analytics, and a valuation model with every assumption listed.

Figures are from the run dated on the cover, at a market price of $117.32. Financial data is from SEC EDGAR XBRL company facts; price and share count are from Yahoo Finance.

This is a personal research project on public filings. It is not investment advice.

1. Executive summary

At $117.32, the market price implies an 18.0% discount rate against an 11.9% cost of equity from CAPM, and five years of revenue decline at 9.2% a year with margin compression. Lululemon carries no long-term debt, so the model is an equity-only valuation with operating leases as the only material obligation.

> **What the price implies**
> The gap between the implied and modeled discount rate is consistent with a distressed-company risk premium. To justify the current price, an investor has to believe in revenue contraction, margin compression, and a materially higher required return at the same time.

Key findings

18.0%	**Implied discount rate** that reproduces the market price, against an 11.9% cost of equity from CAPM.
-9.2%	**Implied revenue growth** per year for five years. The market is pricing a decline, with operating margin compressing from current levels.
$0	**No long-term debt.** The balance sheet is net cash, so the valuation is equity-only and operating leases are the only material obligation.
16	**Fiscal years normalized** from SEC XBRL, 25 line items, through a parser that runs unchanged on Nike, Adidas, and Under Armour.

2. Background and objective

Every SEC filing is tagged in XBRL, and the EDGAR company facts endpoint returns every fact a company has ever reported in a single structured response. That makes it possible to build a valuation that refreshes itself from filings rather than from a hand-maintained spreadsheet.

The objective was a five-year DCF with explicit, inspectable assumptions, a reverse DCF that solves for what the current price implies, and bear, base, and bull cases through the same model, all produced by a pipeline that can be scheduled and pointed at a peer with no code changes.

Lululemon is a useful subject because its capital structure is simple. With no long-term debt, the cost of equity is the discount rate, and the only material off-balance-sheet obligation is operating leases.

3. Data and method

Pipeline

Table 1. Pipeline stages

Stage	What happens	Output
Bronze	Python pulls every XBRL fact Lululemon has reported from SEC EDGAR in one API call, filters to the 25 line items the model needs, and lands them in S3. Shaped to run as a scheduled Lambda.	Raw XBRL JSON
Silver	A pandas parser normalizes tag variants across old and new accounting standards into typed columns, one row per fiscal year. The same parser runs on Nike, Adidas, and Under Armour without edits.	16 years of financials, Parquet
Gold	DuckDB runs SQL window functions over the silver table: year-over-year growth, five-year rolling CAGR, margin compression versus peak, and free cash flow conversion. Portable to a Databricks SQL warehouse with a connection change.	Trend tables
Valuation	Five-year free cash flow projection discounted at the cost of equity with a Gordon growth terminal value. The reverse DCF solves for implied growth, margin, and discount rate. Bear, base, and bull assumptions run through the same model.	Intrinsic value, implied assumptions, scenarios

Valuation method

- **Cash flow.** Free cash flow to the firm projected for five years from revenue growth, operating margin, tax, capital expenditure, and working capital assumptions.
- **Discount rate.** Cost of equity from CAPM, 11.9% at the run date. With no debt, this is the weighted average cost of capital.
- **Terminal value.** Gordon growth on the year-five cash flow.
- **Reverse DCF.** A root-finding routine (scipy.optimize) solves for the revenue growth, operating margin, and discount rate that reproduce the market price, one at a time with the others held at base case.
- **Scenarios.** Bear, base, and bull assumption sets run through the identical model so the cases differ only in inputs.

Why XBRL company facts

Each line item in a filing carries a tag such as us-gaap:Revenues. Companies change tags as standards change, so the silver layer carries a concept map that resolves variants to one column. No PDF parsing and no per-filing iteration are needed, and the same map works across apparel peers.

4. Results

Figure 1 places the base-case projection against post-COVID revenue history. Figures 2 and 3 show the reverse DCF and the three scenarios.

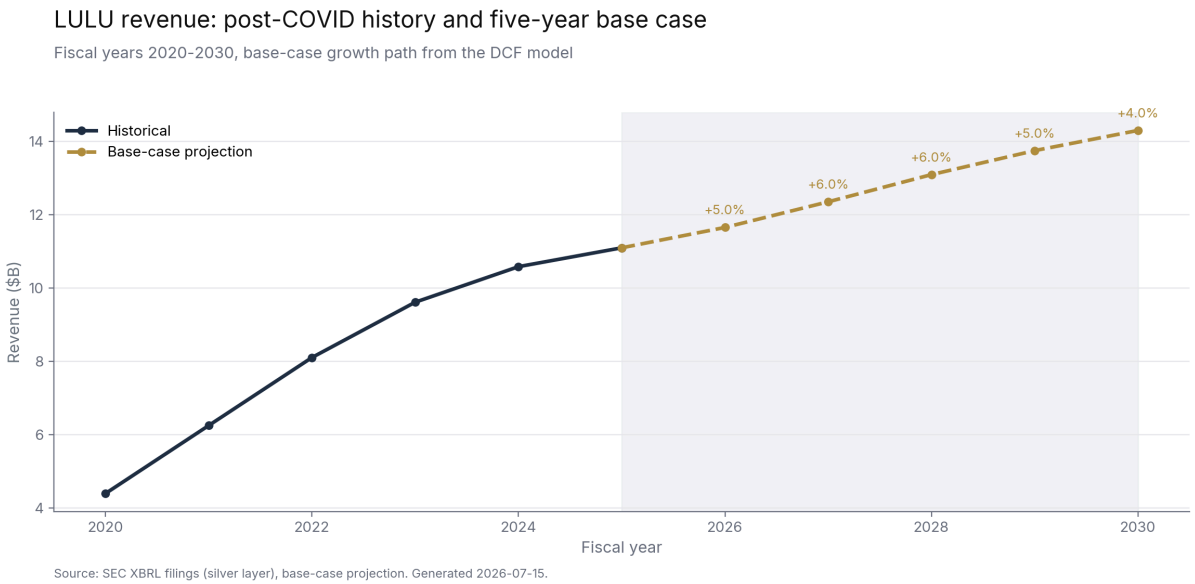


Figure 1. Revenue history and five-year base case

Source: SEC EDGAR XBRL company facts. Base case from the DCF model.

Table 2. Reverse DCF: what the market price implies

Assumption	Implied by $117.32	Model
Discount rate	18.0%	11.9% cost of equity (CAPM)
Revenue growth, five years	-9.2% a year	Base case growth
Operating margin	Compression from current level	Base case margin

Each assumption solved with the others held at base case.

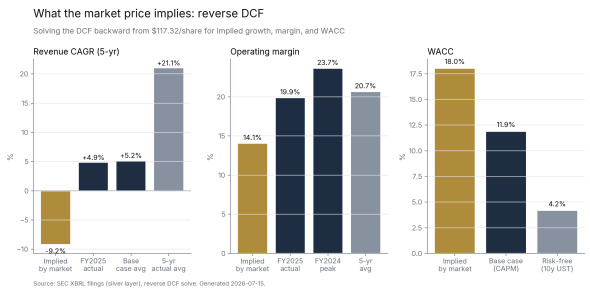


Figure 2. Reverse DCF, implied versus historical

Source: SEC EDGAR XBRL; market price from Yahoo Finance at run date.

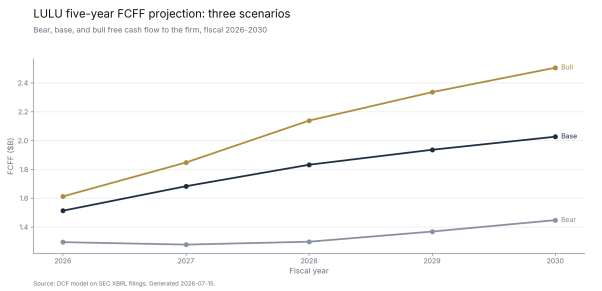


Figure 3. Free cash flow to the firm, bear, base, and bull

Source: DCF model output.

The implied discount rate is the striking number. A 6.1-point gap over the CAPM cost of equity is the kind of premium applied to companies in financial distress, which does not describe a net-cash balance sheet. The market's view, as encoded in the price, is of a shrinking business with lower margins and higher risk, all at once.

5. Limitations

- **Pre-2020 fiscal labels.** XBRL fiscal-year labels misalign for Lululemon before 2020, so charts and SQL that need clean year alignment filter to fiscal 2020 and later.
- **Snapshot inputs.** Cash and beta are hardcoded snapshots in this version rather than pulled live.
- **Leases.** Operating leases (ASC 842) are treated as operating rather than as debt in the discount rate, defensible for Lululemon because traditional debt is essentially zero.
- **Point estimate at one price.** Results are tied to the run-date price of $117.32. A different price changes every implied figure.
- **Not investment advice.** The project demonstrates a pipeline and a method.

6. Next steps

1. Deploy the ingest as a scheduled Lambda so the bronze layer refreshes after each filing.
2. Run the pipeline on Nike, Adidas, and Under Armour for a peer comparison on the same assumptions.
3. Point the gold SQL at a Databricks SQL warehouse and publish the trend tables.
4. Pull cash and beta live and add a sensitivity grid over growth and discount rate.

Appendix A. Technical stack and repository

Table 3. Stack

Layer	Tool
Ingest	Python standard library, shaped to run as an AWS Lambda on a schedule
Storage	Parquet locally; S3 or Delta Lake on Databricks in production
Transform	DuckDB SQL window functions (LAG, AVG OVER, MAX OVER, RANK)
Modeling	numpy, pandas, scipy.optimize
Live data	yfinance for current price and diluted shares
Charts	matplotlib

Repository layout

```
ingest.py          SEC EDGAR -> bronze
silver.py          XBRL -> year-indexed Parquet
gold.py            SQL window functions -> trends
dcf.py             base-case valuation, sensitivity, charts
reverse_dcf.py     what the market price implies
scenarios.py       bear / base / bull
viz.py             rebuild all charts
view_data.py       inspect any layer
```

Appendix B. Glossary

CAGR	Compound annual growth rate over a period.
CAPM	Capital asset pricing model: cost of equity from the risk-free rate, beta, and the equity risk premium.
DCF	Discounted cash flow: value as the present value of projected cash flows plus a terminal value.
EDGAR	The SEC's filing system; company facts is its structured XBRL endpoint.
FCFF	Free cash flow to the firm: operating cash flow after tax and reinvestment, before financing.
Gordon growth	Terminal value as the final-year cash flow grown at a constant rate and capitalized at the discount rate minus that rate.
Reverse DCF	Solving the DCF backwards for the assumptions that reproduce the market price.
XBRL	The tagged financial reporting format required for SEC filings.

About the author

Leah Hall is a data and analytics professional based in Seal Beach, California. She builds data pipelines, forecasting models, and financial analyses for ecommerce, finance, and hospitality, and publishes the work at leahkatinsights.com.

Project page	leahkatinsights.com/projects.html#project-03
Source code	github.com/leahkatinsights/lululemon-dcf-pipeline
Email	leah@leahkatinsights.com
Website	leahkatinsights.com
LinkedIn	linkedin.com/in/leah-hall
GitHub	github.com/leahkatinsights

Personal research project on public filings. Not investment advice. Figures are from the run dated on the cover at a market price of $117.32. Code is on GitHub.