DISCOUNTED CASH FLOW MODELLING

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Discounted Cash Flow (DCF) Modelling

Problem statement:

Your objective is to assess financial data to project future cash flows, calculate their current value, estimate the company's worth at a future point, and determine the present value of both future cash flows and the company's future worth to establish its overall valuation.

What is Discounted Cash Flow (DCF) Modelling?
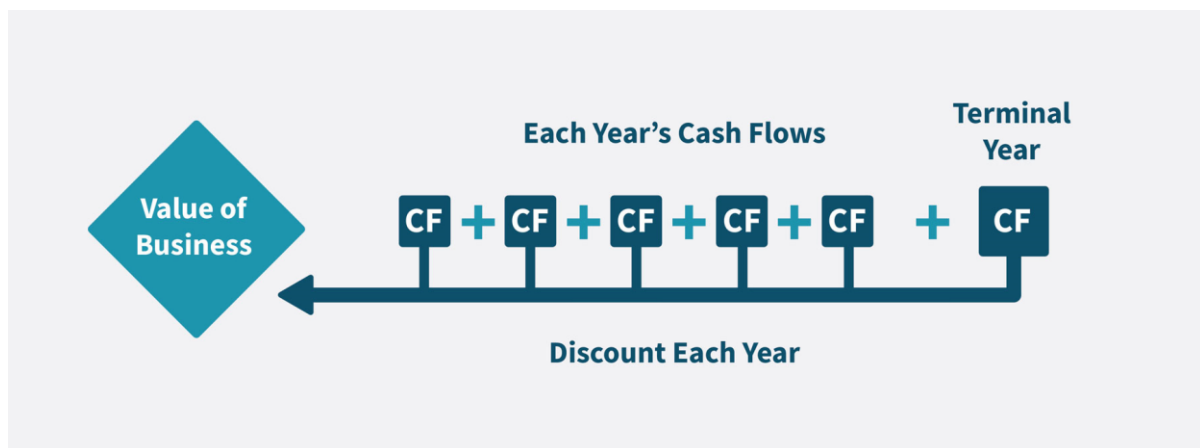
Discounted Cash Flow (DCF) modelling is a financial model that **estimates the value of an asset by forecasting its future cash flows and discounting them to the present value.** The present value is the amount investors should be willing to pay for the asset. DCF models are used to value companies, projects, investments, and anything else that has a series of cash flows.

DCF models are considered a fundamental analysis technique, meaning they are both quantitative and qualitative in nature. They require detailed assumptions that are used to forecast future cash flows, which can be affected by a variety of factors, such as market demand, the economy, technology, competition, and unforeseen threats or opportunities. These factors can't be quantified reliably, so investors should understand this drawback and consider other factors as well.

DCF models are based on the idea that a company's value is determined by its ability to generate cash flows for its investors in the future, rather than by supply and demand for its stock

For data set → **Please click here**

1. What factors can affect the composition of a company's current assets vs. long-term assets?

The composition of a company's current assets versus long-term assets is influenced by several factors related to its business operations, financial strategy, and industry type. Companies in industries with high liquidity needs, such as retail or manufacturing, tend to have a higher proportion of current assets, like cash, accounts receivable, and inventory, to meet short-term operational demands. On the other hand, capital-intensive industries, such as real estate or heavy machinery, typically maintain a larger proportion of long-term assets, including property, equipment, and intangible assets like patents, to support long-term growth and production.

Another key factor is the company's financial strategy. A company focusing on aggressive expansion may invest more in long-term assets to secure future growth, while a company prioritizing liquidity and risk management might hold more current assets to cover immediate obligations. Additionally, market conditions and economic cycles can also influence asset composition; during uncertain times, companies may shift towards more liquid assets to safeguard against potential downturns, whereas in stable periods, they may allocate more resources towards long-term investments that promise higher returns over time.

2. How can a company's debt-to-equity ratio impact its creditworthiness and access to capital?

A company's debt-to-equity ratio is a critical measure of its financial leverage, and it plays a significant role in determining its creditworthiness and access to capital. A high debt-to-equity ratio indicates that a company relies heavily on borrowed funds compared to its equity. This can raise concerns among lenders and investors about the company's ability to meet its debt obligations, especially during economic downturns or periods of reduced revenue. Higher leverage increases the risk of default, leading to lower credit ratings, higher borrowing costs, and more restrictive loan terms, which can limit the company's ability to access additional capital.

On the other hand, a lower debt-to-equity ratio suggests that a company is financing its operations more conservatively through equity rather than debt. This can enhance the company's creditworthiness, as it signals financial stability and a lower risk of default. With a strong equity base, companies are more likely to attract investors and secure favourable financing terms from lenders, including lower interest rates and larger credit lines. However, excessively low leverage might also indicate underutilization of debt financing, potentially limiting growth opportunities if the company is overly cautious about taking on new debt.

3. **Debt-to-Equity Ratio: How has the debt-to-equity ratio changed over the four years? (take in consideration total liabilities and total equity). Is the company relying more on debt financing or equity financing?**
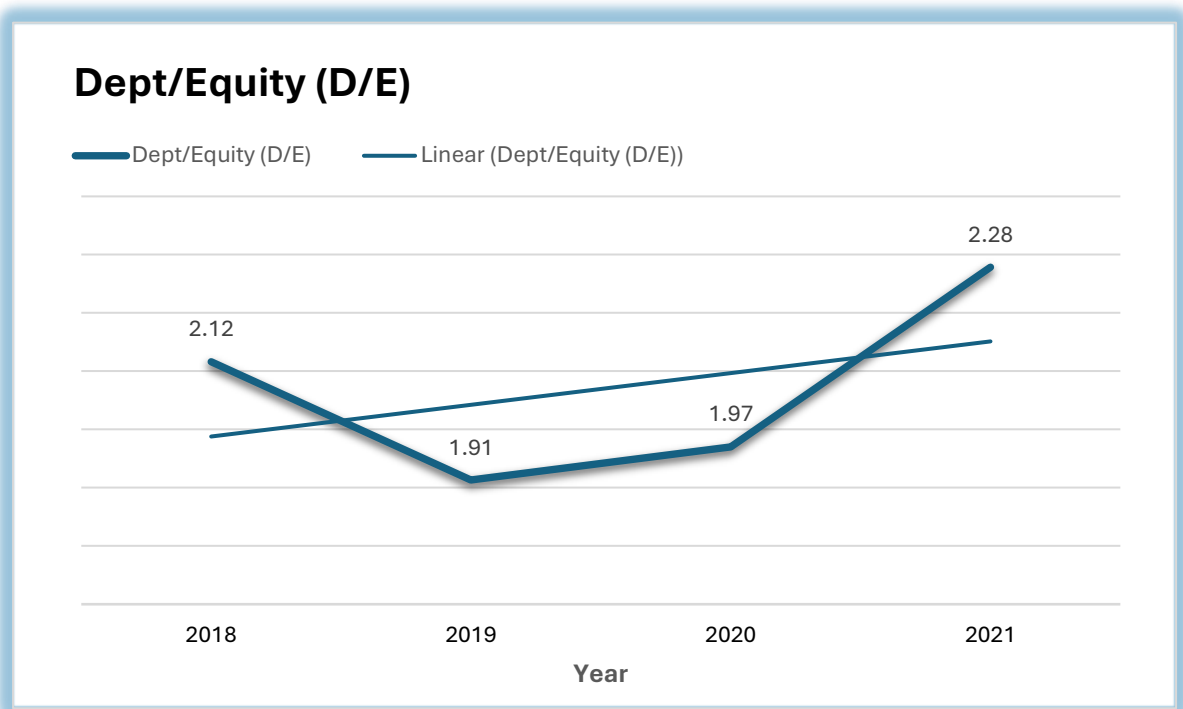
Observations:

- In 2018, the debt-to-equity ratio was 2.12, indicating that the company was utilizing more debt relative to its equity.

- By 2019, the debt-to-equity ratio decreased to 1.91, showing a reduction in the company's reliance on debt financing.

- In 2020, the debt-to-equity ratio increased slightly to 1.97, signalling a gradual shift towards more debt usage.

- By 2021, the debt-to-equity ratio jumped significantly to 2.28, marking a substantial increase in the company's dependence on debt financing.

Conclusion:

The company initially reduced its reliance on debt financing from 2018 to 2019. However, from 2019 onward, the company began to increase its use of debt, with the most notable rise in 2021. This trend suggests that the company is increasingly relying on **debt financing over equity financing in recent years, potentially increasing its financial risk**

4. Revenue Growth: How has the company total revenue grown over the three years? What segments are driving this growth (merchandise sales, membership fees)?
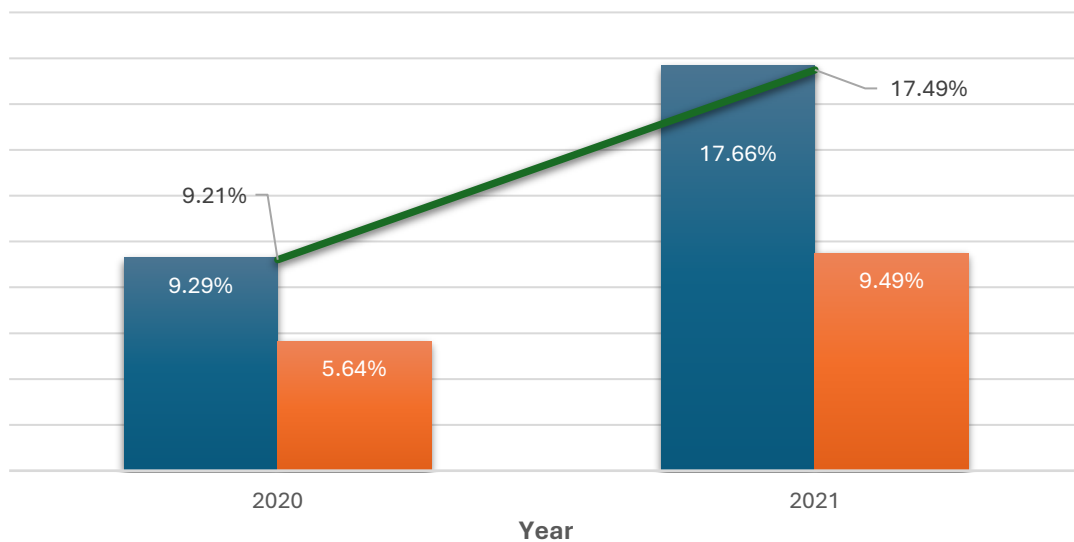
Revenue Growth

- Merchandise Sales Revenue
- Membership Fee Revenue

$149 K $163 K $192 K

$153 K $167 K $196 K

$03 K $04 K $04 K

2019   2020   2021

Year
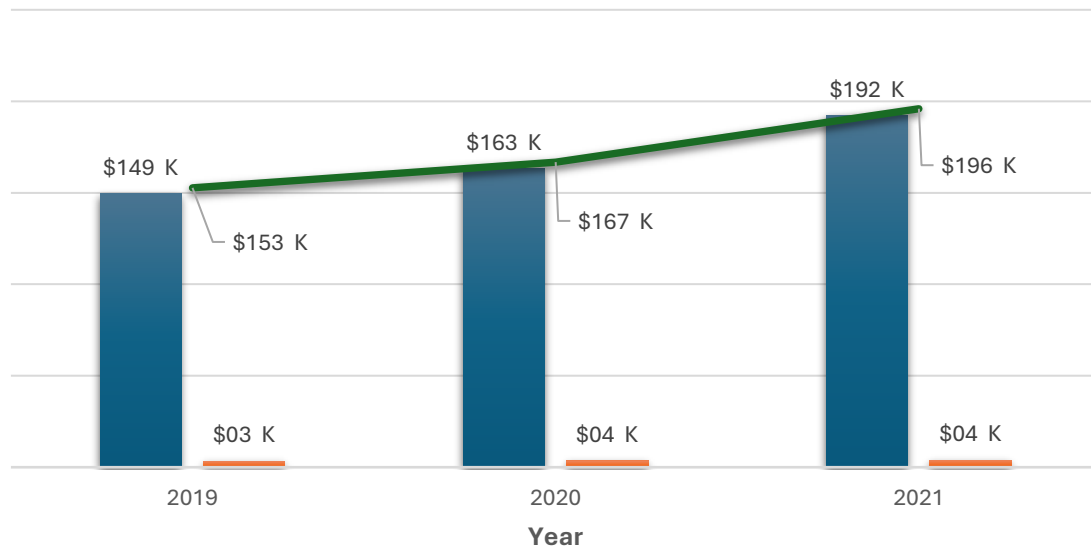
Revenue Growth Rate

- Merchandise Sales Revenue Growth rate
- Membership Fee Revenue Growth rate
- Total revenue Growth rate

9.21%   17.49%

17.66%

9.29%   9.49%

5.64%

2020   2021

Year

Observations:
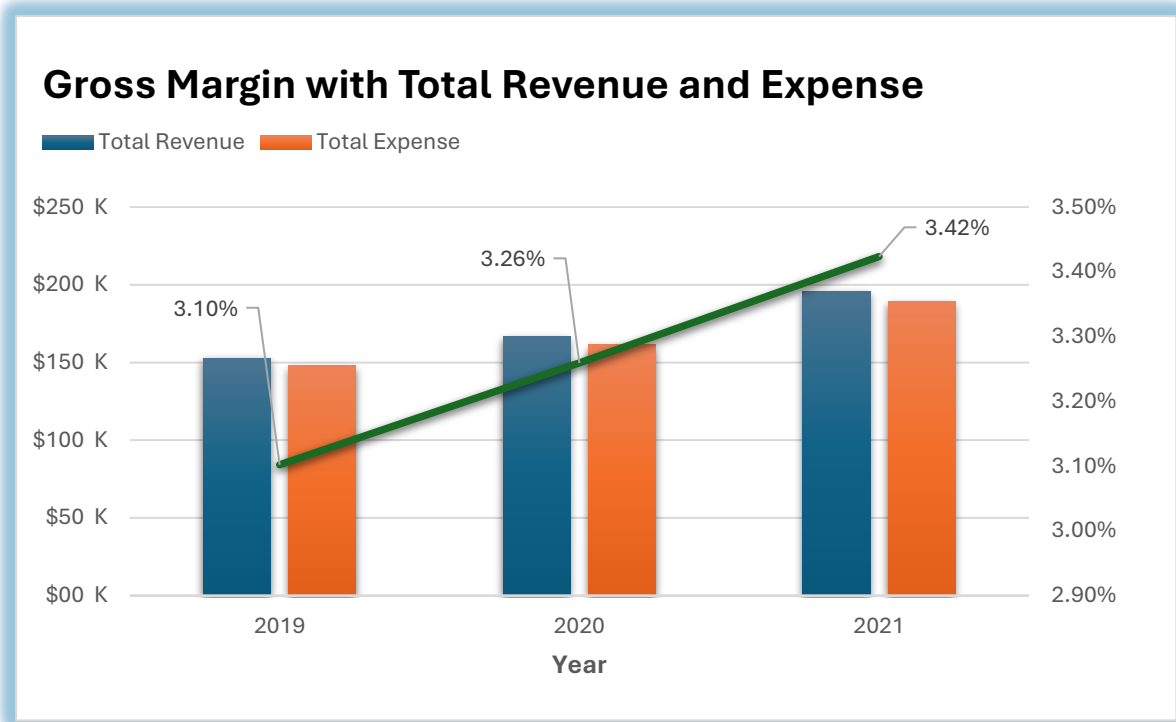
- Total Revenue Growth: The company's total revenue increased by 9.21% from 2019 to 2020 and further accelerated to 17.49% from 2020 to 2021.

- Merchandise Sales Growth: Merchandise sales, the major contributor to total revenue, grew by 9.29% between 2019 and 2020 and by 17.66% between 2020 and 2021.

- Membership Fee Growth: Membership fee revenue saw a more modest growth, increasing by 5.64% from 2019 to 2020 and 9.49% from 2020 to 2021, but it contributed much less to overall revenue compared to merchandise sales.

Conclusion:

The company's total revenue has shown **consistent growth over the three-year period**, with **merchandise sales being the primary driver of this growth**. The sharp rise in merchandise sales, especially in the 2020-2021 period, indicates a strong performance in this segment. Although membership fees have grown steadily, their contribution remains relatively small compared to merchandise sales. **Overall, the company's revenue growth is predominantly fuelled by its success in merchandise sales.**

5. **Gross Margin: Calculate and compare the gross margin (consider total revenue and total expense) across the three years. Is the company able to maintain or improve its margins?**

Gross Margin with Total Revenue and Expense

■ Total Revenue   ■ Total Expense
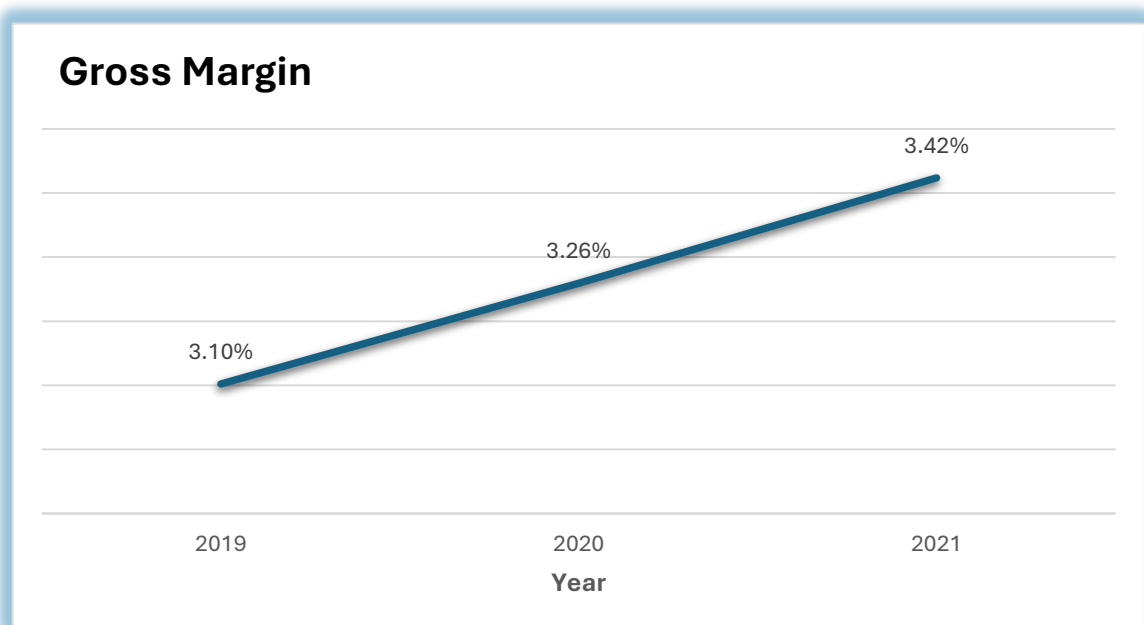
Observations:

- **Revenue Growth**: The company's total revenue increased steadily over the three years, from $153K in 2019 to $196K in 2021, reflecting consistent growth.

- **Expense Growth**: Total expenses also increased each year, rising from $148K in 2019 to $189K in 2021. Despite the rise in expenses, revenue growth outpaced expense growth.

- **Gross Margin Improvement**: The company's gross margin improved each year:

    o 2019: 3.10%

    o 2020: 3.26%

    o 2021: 3.42% The incremental rise in gross margin indicates the company is improving its operational efficiency and generating more profit from each dollar of revenue.

Conclusion:

The company has been able to **improve its gross margin consistently** over the three years, which suggests better management of operational expenses relative to revenue growth. Despite rising expenses, the company's ability to expand its revenue at a higher rate than its expenses have led to increased profitability at the gross margin level. **This trend demonstrates a positive outlook for the company's operational efficiency and financial health.**

6. How can investors utilize free cash flow analysis to compare different companies in the same industry?

Investors can utilize Free Cash Flow (FCF) analysis to compare different companies within the same industry by assessing the companies' ability to generate cash from their core operations after accounting for capital expenditures. Here's how:

- **Financial Health and Stability:** FCF analysis reveals the financial health of a company by showing how much cash is available after reinvesting in the business. A higher FCF indicates that a company has more liquidity, which can be used to pay dividends, reduce debt, or pursue growth opportunities. When comparing companies, investors can favour those with stronger FCF, as it suggests better operational efficiency and financial flexibility.

- **Valuation and Growth Potential:** FCF is a critical metric for valuation, especially when using valuation models like Discounted Cash Flow (DCF). Comparing FCF across companies allows investors to determine which companies are more likely to sustain growth or return capital to shareholders. Companies with stable or growing FCF are often seen as more attractive investments because they are better positioned to capitalize on growth opportunities, weather economic downturns, and provide returns to investors.