DISCOUNTED CASH FLOW CHEAT SHEET

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STEPS

Purpose

DCF is used to estimate the intrinsic value of an investment or business by discounting future cash flows to their present value. It helps determine whether an investment opportunity is undervalued or overvalued.

1 HISTORICAL FINANCIAL ANALYSIS

The discount rate is the minimum rate of return acceptable to the investor.

The absolute value of the discount rate depends on the definition of the discount rate. Namely, for cash flow after debt servicing, a simple discount rate is used, while for cash flow before debt servicing, a weighted average cost of capital (WACC) is used.

2 INCOME STATEMENT FORECAST

Projections of revenue, COGS, OPEX, salareis, amortization, depreciation, interest etc..

3 CAPEX and NWC forecast

Forecasting capital expenditures (capex) is an important part of the valuation modeling process, as it allows businesses to plan for and manage their investment in long-term assets.

4 DEFINE PERIOD AND FORECASTING CF

5 DISCOUNT RATE DETERMINATION

The cost of equity is the expected rate of return that shareholders require to invest in a company's common equity. In other words, it is the return that investors expect to receive on their investment in the form of dividends and capital gains.

When conducting a valuation, the cost of equity is an important factor to consider as it reflects the investors' perception of risk associated with the company's future earnings. A higher risk perception means a higher cost of equity, and vice versa.

6 LONG TERM GROWHT RATE

7 TERMINAL VALUE CALCULATION

8 DISCOUNITNG CF

9 FINAL ADJUSTMENT AND SENSITIVITY

Pros

Takes earning potential into account

Flexible method that can be tailored to different types of assets or businesses

Future oreientated

Enables sensitivity analysis by allowing the modification of assumptions

Provides a quantitative basis for comparing different investment opportunities

Cons

DCF heavily depends on accurate and reliable projections

Subjectivity of these assumptions can introduce biases and uncertainty

A slight change in projected cash flows or discount rates can result in significant variations in the estimated present value

Difficulty in Determining the Discount Rate

CF FORECAST SUMMARY

	Year 1	Year 2	Year 3	Year 4	Year 5
EBITDA	5,500	5,885	6,297	6,738	7,209
Depreciation	(200)	(214)	(229)	(245)	(262)
Interest	(300)	(321)	(343)	(368)	(393)
Corporate tax	(750)	(803)	(859)	(919)	(983)
CAPEX adjustments	**(700)**	**(500)**	**(500)**	**(500)**	**(500)**
Change in NWC	**(500)**	**(600)**	**(600)**	**(600)**	**(600)**
Free Cash flow	3,050	3,448	3,766	4,106	4,471

DCF based valuation

	Valuation
Discounted FCF	12,540
Discounted CF Terminal	7,250
Total DCF	**19,790**
Cash	250
Financial Debts	(4,500)
Net financial position	(4,250)
NWC adjustments	(1,000)
Valuation before marketability discount	14,540
Discount for marketability	35%
Final valuation	**9,451**

Sensitivity analysis example (long term rate + WACC

	Discount rate				
	11.8%	12.3%	12.8%	13.3%	13.8%
2.6%	3,548.4	3,348.2	3,167.8	3,004.2	2,855.3
2.8%	3,592.3	3,385.9	3,200.2	3,032.3	2,879.8
3.1%	3,638.8	3,425.6	**3,234.3**	3,061.8	2,905.4
3.3%	3,688.1	3,467.5	3,270.3	3,092.8	2,932.3
3.6%	3,740.3	3,511.9	3,308.2	3,125.4	2,960.4

WACC

- Risk-free rate
- Equity risk premium
- Relevered industry beta
- Sub-total
- Specific risk premium
- Cost of equity
- Industry - database
- Cost of debt
- Corporate tax rate
- Cost of Debt after tax
- (ND / EV)
- WACC
- Local inflation
- WACC result

Revenue forecast
- Identify key drivers
- Gather data
- Analyze trends
- Develop assumptions
- Create a forecast

COGS forecast
- Identify the components of COGS
- Collect data on historical COGS
- most important metric is % of cogs in Revenue
- Analyze trends
- Develop assumptions

OPEX forecast
- Use historical share in total revenues
- Adjusted for some assumptions

Depreciation forecast
- Start by identifying the assets that will be depreciated
- Determine useful life
- Choose a depreciation method
- Calculate depreciation expense

NWC

+ AR = Sales / DSO
+ Inevnotirs (I = Cogs / DIO)
- Payables (AP = Costs / DPO)

DCF Formula

$$DCF = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_n}{(1+r)^n}$$

CF_1 = Cash flow for the first period
CF_2 = Cash flow for the second period
CF_n = Cash flow for "n" period
n = Number of periods
r = Discount rate

Terminal Value (TV)

TV = (FCFn x (1 + g)) / (WACC – g)

FCF = free cash flow.
n = year 1 of terminal period or final year.
g = perpetual growth rate of FCF.
WACC = weighted average cost of capital.