

Ø THETA 45

EQUITY VALUATION



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How does Theta 45 evaluate the equity of a company?

The Theta 45 Valuation Model

Theta 45 uses a discounted cash flow (DCF) model, that values a company by comparing the opportunity cost of investing in an alternative financial security, such as a government bond.

Why would you invest in a company that would provide less return than a government bond?



Price vs Value

A company has a market price, determined by the forces of demand and supply in the stock market. A company also has a value, as determined by either its stockholder equity (total assets - total liabilities), or the free cash flow an investor would receive, adjusted for the time value of money (see below).

Premium vs Discount

When the share price is greater than the share value, the company is said to be trading at a premium. However, when the share price is less than the share value, the company is said to be trading at a discount.

Investors buy shares in the company when its trading at a discount in the short-term, hoping to profit in the long-term when the share price returns to share value.

The Question

What value would you place on a company, that is projected to generate \$10,000,000 in free cash flow, in 10 years?

The Time Value of Money

You have heard of the expression, "time is money". This is because, instead of doing nothing, you could utilize what time you have to work and earn money.

Just as there is a "monetary value to time", there is also a "time value of money". This is because, instead of your cash doing nothing, you could utilize what cash you have to invest in a risk free financial security, such as a high interest bank account, or government bond.

The Opportunity Cost

As a rational investor, why would you invest in another security that would earn you less return than a risk free financial security. In other words, there would be an opportunity cost if you invested in an asset that generated less return than the risk free rate.

The Discount Rate

The discount rate is the minimal return required by the investor, to compensate for the opportunity cost of investing in an alternative financial security.

The Discount Rate Types Used

The Theta 45 DCF model can analyse the opportunity cost between investing in this company and 4 other alternative financial securities:

Risk Free Rate:	Compares this investment to purchasing a government bond that matures in 10 years.
Risk Premium Rate:	Adds a risk premium to the risk free rate, to compare this investment to a corporate bond.
Currently Trading Rate:	Equates the discount rate to the current share price, to compare this investment against another company.
Optional Discount Rate:	Either compares this investment to another bond or equates this discount rate for further analysis.

Cash Flow Projection

The Theta 45 DCF model uses historic data from financial statements to provide a conservative projection of free cash flow for the next 10 years.

The Equation

To calculate the value, V , of the equity in a company, we need to know:

The Investment Horizon, in T years	10
The Total Cash Flow, C, Predicted in T years	\$10,000,000
The Discount Rate, d	2%

$$V = \frac{C}{(1 + d)^T - 1}$$

The Answer

Let's calculate the maximum amount you would pay for a company that is predicted to generate \$10,000,000 in free cash flow in 10 years.

The Value of This Investment, V :
\$45,663,264

The maximum amount you would pay for this company, is calculated by comparing this investment to a risk free investment such as a government bond. In this example, we will assume the discount rate is equal to the 10 US Treasury Bond, 2%

Financial Disclaimer

Theta 45 is not a financial advisor. The information provided by Theta 45 is not financial advice. You must seek the advice of a financial advisor before investing. Your capital is at risk when investing in an equity. Past performance is not an indicator of the future.

Company Information

Company Name	Apple Inc.	Shares Outstanding	16,070,000,000
Ticker Symbol	AAPL	Share Price	156.38
Market	NasdaqGS	Share Price Date	20/09/2022
Currency	USD	Market Capitalization	2,513,026,600
Monetary Units	1000	Investment Horizon (years)	10

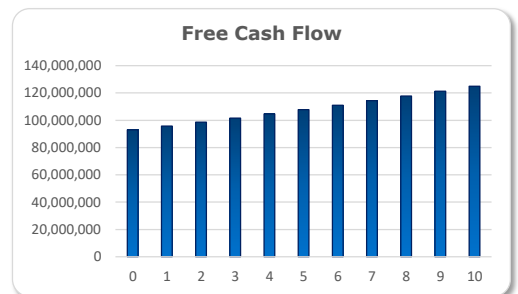
Cash Flow History

Year	29/09/2018	29/09/2019	29/09/2020	29/09/2021
Free Cash Flow	64,121,000	58,896,000	73,365,000	92,953,000
Change		-8%	25%	27%
Change fom Start		-8%	14%	45%
Average Growth		-8%	7%	13%

Latest Quarter	1	2	3	4
Free Cash Flow	44,163,000	25,652,000	20,790,000	0
Projected Cash Flow	120,806,667	based on	3	quarters reported

Cash Flow Projection

Year	Free Cash Flow	Change
0	92,953,000	
1	95,741,590	3%
2	98,613,838	3%
3	101,572,253	3%
4	104,619,420	3%
5	107,758,003	3%
6	110,990,743	3%
7	114,320,465	3%
8	117,750,079	3%
9	121,282,582	3%
10	124,921,059	3%
Total Cash Flow	1,097,570,033	


Discount Rates

Risk Free Rate	3.49%	3.49%	3.49%	3.49%
Risk Free Security	10 Year US Treasury Rate	10 Year US Treasury Rate	10 Year US Treasury Rate	10 Year US Treasury Rate
Rate on Date	20/09/2022	20/09/2022	20/09/2022	20/09/2022
Risk Premium	0.00%	0.94%	0.20%	-0.49%
Risk Premium Type	None	Corporate Bond I	Currently Trading	Average Growth Rate
Discount Rate	3.49%	4.43%	3.69%	3.00%

Equity Valuations

Company Value	2,681,994,768	2,022,804,945	2,513,026,600	3,191,386,333
Share Value	166.89	125.87	156.38	198.59
Share Price	156.38	156.38	156.38	156.38
Difference	-6.30%	24.23%	0.00%	-21.26%
Trading At	Discount	Premium	Discount	Discount

Bond Cash Flow

Year	Risk Free Rate	Corporate Bond I	Currently Trading	Average Growth Rate
0				
1	93,601,617	89,610,259	92,738,567	95,741,590
2	96,868,314	93,579,994	96,160,911	98,613,838
3	100,249,018	97,725,587	99,709,550	101,572,253
4	103,747,709	102,054,831	103,389,146	104,619,420
5	107,368,504	106,575,860	107,204,530	107,758,003
6	111,115,665	111,297,170	111,160,713	110,990,743
7	114,993,601	116,227,635	115,262,892	114,320,465
8	119,006,878	121,376,519	119,516,455	117,750,079
9	123,160,218	126,753,499	123,926,987	121,282,582
10	127,458,510	132,368,679	128,500,282	124,921,059
Total Cash Flow	1,097,570,033	1,097,570,033	1,097,570,033	1,097,570,033

Notes

Corporate Bond I
 Apple Inc. 3,25% 22/29
 ISIN: US037833EN61



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