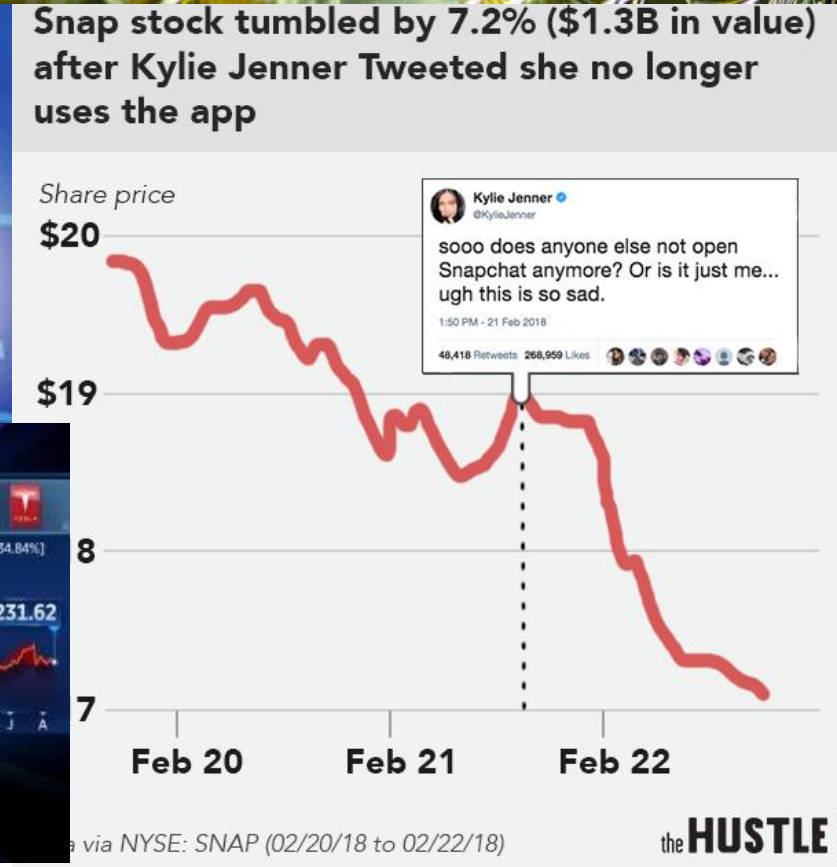

560
0.9%
0.12%
1.286
2.286
.156


currency wowmuch coin many money so crypto
WOW


r/wallstreetbets
r/wallstreetbets
Joined
7,652,681 Degenerates • 374,487 Buying FDs
Like 4chan found a bloomberg terminal. The Official Mods Twitter is @wsbmod
Finance & Business
Related communities
r/stocks
r/dogecoin
660k members


TESLA (TSLA)
231.62 -3.39 [-1.44%]
1-YR [-34.84%]
231.62
ETF EDGE
BULL CASE FOR TESLA


Snap stock tumbled by 7.2% ($1.3B in value) after Kylie Jenner Tweeted she no longer uses the app
Share price
$20
$19
8
7
Feb 20
Feb 21
Feb 22
Kylie Jenner
@KylieJenner
sooo does anyone else not open Snapchat anymore? Or is it just me... ugh this is so sad.
1:50 PM - 21 Feb 2018
48,418 Retweets 268,959 Likes
via NYSE: SNAP (02/20/18 to 02/22/18)
the HUSTLE

The DCF Model: The Complete Guide… to a Historical Relic?

Do Discounted Cash Flows Matter When Stocks Are Valued Based on Memes and Tweets?

This Lesson: Back to the Basics

We've published many tutorials on the **Discounted Cash Flow (DCF) Analysis** and related topics, like Unlevered FCF, Terminal Value, etc.

…but nothing on *the entire* analysis from start to finish, including whether or not it's still valid.

This Lesson: Back to the Basics

Goal is to not just “walk through” the analysis but also give you the tools to **do it quickly with limited resources** (read: no paid subscription services).

And we’ll also point you to a few example DCF models from previous coverage.

This Lesson: Back to the Basics

If you want this entire tutorial in writing, as well as the Excel file and example DCFs from previous tutorials, go to:

https://www.mergersandinquisitions.com/dcf-model/

The DCF Model: Lesson Overview

- **Part 1:** The Big Idea Behind a DCF **2:29**
- **Part 2:** Company/Industry Research **5:21**
- **Part 3:** DCF, Step 1: Unlevered Free Cash Flow **8:36**
- **Part 4:** DCF, Step 2: The Discount Rate **21:46**
- **Part 5:** DCF, Step 3: The Terminal Value **28:46**
- **Part 6:** Common Criticisms of the DCF – and Responses **34:15**

Part 1: The Big Idea Behind a DCF

- You can use this formula to value any company or asset:

- **Company Value** =

$$\frac{\text{Cash Flow}}{(\text{Discount Rate} - \text{Cash Flow Growth Rate})}$$

  Where the Cash Flow Growth Rate Must Be **<** Discount Rate

- **"Discount Rate":** Measures risk and potential annualized returns; higher rate means more risk but also higher *potential* returns

- **Intuition:** Company is worth more when its cash flow or growth are higher, and worth less when it's riskier or expectations are higher

Part 1: The Big Idea Behind a DCF

- If a company's Discount Rate and Cash Flow Growth Rate stay same *forever*, this formula works!

- But… when does that ever happen?

- **Companies:** Tend to grow quickly early on, but then slow down as they reach maturity – higher risk/potential returns, then lower

- **Valuation is more than this simple formula because we must project *changes* in the Discount Rate and Cash Flow Growth Rate**

- To fix that, we divide the DCF into two periods…

Part 1: The Big Idea Behind a DCF

- **Period #1:** Project a company's Cash Flows until it *reaches* maturity over a 5, 10, or 15-year period

- **Explicit Forecast Period:** In these 5, 10, or 15 years, the company's Cash Flows, Cash Flow Growth Rate, and Discount Rate could all be changing

- **Period #2:** Assume that the Discount Rate and Cash Flow Growth Rate stay the same after that

- **Terminal Period:** The company's *Cash Flow* will change each year, but the Growth Rate and Discount Rate will not

Part 2: Industry/Company Research

- **Truth:** If you just open Excel and start entering numbers, you're going to waste *a lot* of time

- **Better:** Before doing anything in Excel, you need to get a sense of the company's **key drivers** and how they've trended over time, along with overall industry growth rates

- **EX:** Sales per Store and Sales per Square Foot? # Customers and Revenue per Customer? Available Seat Miles/Kilometers and Revenue per ASM / ASK?

- **Sources:** Company's annual report and investor presentations


UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

Walmart

WALMART INC.

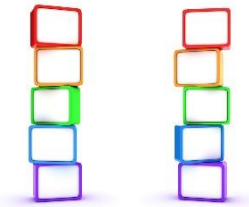
Part 2: Industry/Company Research

- **Sources:** You can also look at peer companies in the same industry and check their growth rates, margins, etc.

- **Detail / Time Required:** Depends on how you're using this DCF… quick valuation? Short case study? Comprehensive client presentation?

- **Most Cases:** You want more than simple percentage growth rates for revenue, but not *too much more*

- **Think:** Maybe 5-10 key drivers for revenue, expenses, and cash flows, but not 50 or 100



Part 3: Unlevered Free Cash Flow

- We start the DCF Analysis by projecting the company's Cash Flows over 5-10 years (or sometimes more than that)

- Many different types of "Cash Flow"….

- But in a DCF, you **almost always use Unlevered FCF** because it gets you the most consistent results – items must be:

1) Related to or "available" to **all** investor groups in the company – think of it as "Free Cash Flow to ALL Investors"




2) Recurring for the company's core-business operations

Part 3: Unlevered Free Cash Flow

- In practice, that means that Unlevered FCF includes:

1) Revenue
2) COGS and Operating Expenses
3) Taxes
4) Depreciation & Amortization (and *sometimes* other non-cash charges)
5) Change in Working Capital
6) Capital Expenditures

- **IGNORE:** Net Interest Expense, Other Income / (Expense), most non-cash adjustments, most of the CFI section, and the CFF section on the CFS

Part 3: Unlevered Free Cash Flow

- **Revenue** for a retailer depends on the # of square feet and the sales per square foot, as well as other sales channels (e-comm)

- **More Complex Model:** Might break it into regions or segments, such as U.S. vs. non-U.S.

- **Expenses** could also be based on a $ per square foot figure, or just a simple percentage of revenue

- We always assume **gradual changes** over time and keep in mind the company's move toward "stabilization"

Part 3: Unlevered Free Cash Flow

- **Lease Expense:** Not an issue under U.S. GAAP since Rent is a standard Operating Expense on the Income Statement; under IFRS, you should deduct *all* components of the Lease Expense (Amortization/Depreciation and Interest)… and don't add back Lease D&A!

- **Capital Expenditures (CapEx)** represent purchases of *long-term* items that will last for more than 1 year and benefit the business for many years to come

- **Here:** Split into "Growth CapEx" for new stores and "Maintenance CapEx" for maintaining and upgrading existing stores; we assume increased spending over time on both

Part 3: Unlevered Free Cash Flow

- **NOPAT** = EBIT * (1 – Tax Rate) and represents the company's earnings from core business after taxes, ignoring capital structure

- **Depreciation & Amortization** represents recognition of previous CapEx spending over many years; make sure it stays slightly under CapEx since the company is growing

- **Deferred Income Taxes** represent the difference between taxes on the Income Statement and what the company pays in cash

- **Other Items:** If there are other, recurring operating activities on the company's statements, you could also include them here

Part 3: Unlevered Free Cash Flow

- The **Change in Working Capital** relates to *timing differences* between recording revenue and receiving it in cash, and recording expenses and paying for them in cash

- **EX:** If a customer pays, but not in cash right away, but still gets the product, the company lists it as "revenue," even though its cash balance has not gone up

- **So:** This tends to *reduce* cash flow for retailers that must order products before selling them (Inventory), but it often *increases* cash flow for companies that *collect* cash in advance

- **Positive** historically (unusual for a retailer), so we'll use that

Part 3: Unlevered Free Cash Flow

- **Unlevered FCF** = NOPAT + Non-Op-Lease D&A +/- Deferred Income Taxes +/- Change in Working Capital – CapEx

- **And:** The EBIT used to calculate NOPAT should deduct the full Lease Expense (careful under IFRS)

- **Checks:** Growth should slow down over time, and by the end of 10 years, it should be around GDP growth or the inflation rate in the region (e.g., low-single-digits percentages for developed countries; a bit higher for emerging markets)

Part 4: The Discount Rate (WACC)

- **WACC:** Cost of Equity * % Equity + Cost of Debt * (1 – Tax Rate) * % Debt + Cost of Preferred Stock * % Preferred Stock



- **"Costs":** To the company, these represent how much it's **paying** to use this capital (e.g., 6% interest rate on Debt → 6% Cost of Debt)

- **"Costs":** To investors, these represent **how much they could earn** on different forms of capital (6% Cost of Debt → 6% Yield on Debt)

- **Cost of Equity:** Potential returns from the company's common stock price increasing and Dividend issuances, or how much it "costs" the company to issue shares

Part 4: The Discount Rate (WACC)

- **Cost of Equity Example:** Company issues Dividends representing 3% of its current share price, and its stock price has increased by an average of 6% to 8% historically → Cost of Equity = ~9% to 11%

- **Cost of Debt Example:** Company is paying 6% interest on its Debt, and similar companies are as well, so the Debt's market value is close to what's shown on the Balance Sheet → Cost of Debt = ~6%

- **Also:** Multiply by (1 – Tax Rate) since Interest is tax-deductible

- **So:** If the company's tax rate is ~25%, the After-Tax Cost of Debt = 6% * (1 – 25%) = 4.5%

Part 4: The Discount Rate (WACC)

- **WACC:** You invest *proportionally* in the company's entire capital structure → Your expected long-term annualized return

- **EX:** Company uses 80% Equity and 20% Debt and has a 25% Tax Rate; you invest $1,000 → $800 in its Equity and $200 in its Debt

- **Equity:** Similar companies' stock prices have increased by 8% per year, on average, and an additional 2% has come from Dividends

- **Debt:** Effective yield is 6%, and similar companies are also ~6%

- **WACC:** 10% * 80% + 20% * 6% * (1 – 25%) = 8.9% → $89 per year (???)

Part 4: The Discount Rate (WACC)

- **WACC of 8.9%:** This does *not* mean that you'll earn $89 per year in cash on a $1,000 investment

- **Reality:** If you count everything – interest, dividends, and selling the shares at a higher price in the future – then the *long-term annualized average* might be *roughly* $89

- **Interpretation:** The *approximate range* (e.g., 10% to 12% vs. 5% to 7%) is more important than the exact Discount Rate

- **Traditional Approach:** Requires you to find peer companies, look at their capital structures, un-lever and re-lever Beta…

Part 4: The Discount Rate Made Easy

- **Cost of Debt:** Use the company's current average interest rate or yield on its Debt

- **Cost of Equity:** Risk-Free Rate + Equity Risk Premium * Levered Beta

- **Equity Risk Premium:** Can use Damodaran's data

- **Risk-Free Rate:** 10-year government bond yields

- **Levered Beta:** Look up on Google/Yahoo Finance

Part 5: The Terminal Value

- Goes back to the **Big Idea** behind Valuation:

- **Company Value** =

$$\frac{\text{Cash Flow}}{(\text{Discount Rate} - \text{Cash Flow Growth Rate})}$$

Where the Cash Flow Growth Rate Must Be **<** Discount Rate

- **Company Value**… *is* the Terminal Value!

- **But:** To calculate it, you need to find the company's Cash Flow, Cash Flow Growth Rate, and Discount Rate *in the Terminal Period*

Part 5: The Terminal Value

- **So:** Not as easy as just inputting numbers directly from the DCF

- In an Unlevered DCF, **Terminal Value** =

$$\frac{\text{Unlevered FCF in Year 1 of Terminal Period}}{\text{(WACC – Terminal Unlevered FCF Growth Rate)}}$$

Where the UFCF Growth Rate Must Be **<** WACC

- **But:** You *rarely* forecast the Terminal Period at all in a DCF

- **So:** You often project *just* the Unlevered FCF in Year 1 of that Terminal Period and use a tweaked formula instead…

Part 5: The Terminal Value

- In an Unlevered DCF, **Terminal Value** =

$$\frac{\text{Final Year UFCF} * (1 + \text{Terminal UFCF Growth Rate})}{(\text{WACC} - \text{Terminal UFCF Growth Rate})}$$

Where the Terminal UFCF Growth Rate Must Be **<** WACC

- **"Terminal Growth Rate":** Should be *low* – below the long-term GDP growth rate, especially in developed countries

- **Alternate Approach:** Use the **"Multiples Method"** to calculate Terminal Value by multiplying the company's Final Year EBIT, EBITDA, or NOPAT by a multiple such as 5x or 10x

Part 5: The Terminal Value

- **Next Steps:** Discount this Terminal Value to its Present Value – since it represents the company's value 10 years into the future!

- **Then:** Add it to the Present Value of the Unlevered Free Cash Flows to get the Implied Enterprise Value

- **Then:** Back into the Implied Equity Value and the Implied Share Price from there

- **End:** Set up sensitivity tables to examine the outcome in different cases and see the full range of values the company might be worth

Part 6: Common DCF Criticisms

- **Critique #1:** "But how can I possibly **predict** a company 5, 10, or 15 years into the future? No one can!"

- **Response 1:** It's not about *exact numbers* – it's about ranges, such as 2-5% growth vs. 5-10% growth vs. 10-15% growth

- **Response 2:** Use scenarios and sensitivities to deal with uncertainty; wide ranges are perfectly acceptable

- **Critique #2:** "The DCF is too sensitive to small changes in assumptions, such as growth rates and margins."

Part 6: Common DCF Criticisms

- **Response 1:** Are you sure you're using reasonable assumptions? And is the Final Year FCF Growth Rate close to the Terminal Growth Rate?

- **Response 2:** Once again, use scenarios and sensitivities; a wide valuation range is fine when there's more uncertainty

- **Critique #3:** "A DCF ignores market conditions and comparable companies, so it might not give you the accurate market value."

- **Response:** Um, this is the whole point of the Discount Rate… and using comparable companies for the Terminal Multiple

Part 6: Common DCF Criticisms

- **Critique #4:** "The DCF is no longer applicable because stocks are valued based on memes / crypto / Reddit! No one cares about cash flow."

- **Response 1:** Yes, it's true that cash flow doesn't matter for a few highly speculative "meme stocks"

- **Response 2:** But despite the hype and media attention, these represent a *tiny percentage* of the overall market

- **Response 3:** And, of course, if the asset doesn't generate cash flow, the DCF doesn't apply… (see: gold and silver)

Recap and Summary

- **Part 1:** The Big Idea Behind a DCF

- **Part 2:** Company/Industry Research

- **Part 3:** DCF, Step 1: Unlevered Free Cash Flow

- **Part 4:** DCF, Step 2: The Discount Rate

- **Part 5:** DCF, Step 3: The Terminal Value

- **Part 6:** Common Criticisms of the DCF – and Responses