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Credit & Restructuring Club 9/30 GBM
Valuation and Accounting





Agenda

1 3 Financial Statements

2 Cash Flows

3 Methods of Valuation

4 Financial Health Ratios

Income Statement

- Shows a company's revenues/expenses over a time-period

Overview

- The Income Statement shows a company's revenues and expenses and its gains/losses over a certain time period
- The "top-line" is revenue and the "bottom-line" is net income
- Cost of goods sold ("COGS") is deducted from revenue to get gross profit
- After Gross Profit, operating expenses such as SG&A, rent, and utilities are deducted to arrive at "Operating Income"
 - Operating Income is often referred to as Earnings Before Interest + Tax ("EBIT"). This is not listed on an actual registered Income Statement but is an important metric that can be derived from Income Statement line items
- After Operating Income, interest is deducted to arrive at Earnings Before Tax ("EBT")
 - Finally, taxes are taken out to arrive at Net Income

Income Statement								
Revenue	118,086	131,345	142,341	150,772	165,849	182,434	200,678	218,739
Cost of Goods Sold (COGS)	48,004	49,123	52,654	56,710	69,657	78,447	88,298	98,432
Gross Profit	70,082	82,222	89,687	94,062	96,193	103,987	112,379	120,306
Expenses								
Marketing, Advertising & Promotor	22,658	23,872	23,002	25,245	28,194	31,014	34,115	37,186
General & Administrative	10,125	10,087	11,020	11,412	15,000	15,000	15,000	15,000
Depreciation & Amortization	18,150	17,205	16,544	16,080	7,504	9,003	10,203	11,162
Interest	2,500	1,500	1,500	1,500	3,000	3,000	1,000	1,000
Total Expenses	53,433	52,664	52,066	54,237	53,699	58,017	60,318	64,348
Earnings Before Tax	16,649	29,558	37,622	39,825	42,494	45,970	52,062	55,958
Taxes	4,858	8,483	10,908	11,598	11,898	12,872	14,577	15,668
Net Earnings	11,791	21,075	26,713	28,227	30,596	33,099	37,484	40,290

1. Net Sales – COGS = Gross Profit
2. Gross Profit – Operating Expenses = Operating Income (EBIT)
3. EBIT – Interest Expense = Earnings Before Tax (EBT)
4. EBT – Taxes = Net Income

True Measure of Profitability?

- While the Income Statement ends with Net Income, this isn't an accurate measure of a company's true ability to generate cash
- Companies deduct "non-cash" expenses such as depreciation and amortization. While this lowers net income, it increases true cash flow by acting as a tax shield
- Income statements are based on accrual accounting, meaning that revenues/expenses are recognized when earned rather than when cash actually changes hands
 - Ex: In December 2023, ABC Consulting completes a \$5,000 project for a client who waits a month to pay. The company records the revenue for FY-23 but the actual cash flow comes in FY-24
- Because of these issues with the Income Statement, investors choose to focus on true measures of cash flow such as EBITDA (EBIT + Depreciation & Amortization)
- EBITDA is thought of as a "proxy" for cash flow and is arguably the most important financial metric
 - Private Credit firms generally underwrite based off EBITDA or Adj. EBITDA (adds back large one-off items like legal or rx fees)



Balance Sheet

- State of a business at a point in time

LINE ITEMS CATEGORIZED

- **Assets = Liabilities + Stockholders' Equity**
- Asset: creates a future cash inflow
- Liability: creates a future cash outflow
- Balance sheet is a snapshot of a business at a certain point in time, on a **book value basis**
- Line items considered for valuation purposes on current/non-current and also operating/non-operating basis
 - Current Assets: used, replaced, or converted to cash within a year
 - Current Liabilities: obligations due within a year's time
 - Operating Assets: assets directly related to the business's operations
 - Ex: Operating/required cash, accounts receivable, inventory, Plant, Property, & Equipment (PP&E)
 - Assets like investments and excess cash are non-operating
 - Operating Liabilities: obligations directly tied to business operations
 - Ex: Accounts payable, wages payable, accrued expenses
 - Interest-bearing liabilities such as long-term debt are non-operating (they are financing in nature)
- Net Operating Working Capital (NOWC) = current operating assets – current operating liabilities
 - Change in NOWC YoY represents net investment in operating assets over the year

BED BATH & BEYOND INC. AND SUBSIDIARIES

Consolidated Balance Sheets
(in thousands, except per share data)

	March 2, 2019	March 3, 2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 508,971	\$ 346,140
Short term investment securities	485,799	378,039
Merchandise inventories	2,618,922	2,730,874
Prepaid expenses and other current assets	296,280	516,025
Total current assets	3,909,972	3,971,078
Long term investment securities	20,010	19,517
Property and equipment, net	1,853,091	1,909,289
Goodwill	391,052	716,283
Other assets	396,416	424,639
Total assets	\$ 6,570,541	\$ 7,040,806
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable	\$ 1,094,078	\$ 1,197,504
Accrued expenses and other current liabilities	623,734	633,100
Merchandise credit and gift card liabilities	339,322	335,081
Current income taxes payable	20,498	—
Total current liabilities	2,077,632	2,165,685
Deferred rent and other liabilities	395,409	431,592
Income taxes payable	49,235	62,823
Long term debt	1,487,934	1,492,078
Total liabilities	4,010,210	4,152,178
Shareholders' equity:		
Preferred stock - \$0.01 par value; authorized - 1,000 shares; no shares issued or outstanding	—	—
Common stock - \$0.01 par value; authorized - 900,000 shares; issued 342,582 and 341,795, respectively; outstanding 132,233 and 140,498 shares, respectively	3,426	3,418
Additional paid-in capital	2,118,673	2,057,975
Retained earnings	11,112,887	11,343,503
Treasury stock, at cost	(10,616,045)	(10,467,972)
Accumulated other comprehensive loss	(58,610)	(48,296)
Total shareholders' equity	2,560,331	2,888,628
Total liabilities and shareholders' equity	\$ 6,570,541	\$ 7,040,806

Statement of Cash Flows

- **Most valuable statement with direct**

OVERVIEW

- The Statement of Cash Flows (SCF) tracks a firm's actual inflows and outflows of cash over time
- Begins with Net Income, adjusts for non-cash expenses and working capital changes, and then lists cash flow from investing and financing activities; ends with firm's net change in cash
- Importance of SCF comes from the difference between revenue recognition and cash movement and the presence of cash inflows and outflows that don't appear on the income statement

CASH FLOWS FROM OPERATING ACTIVITIES

- Measures cash generated and used for the firm's core business activities
- Starts with Net Income, adjusts for non-cash items, and then factors how operational balance sheets items have changed in the period
- Example: Increase in Accounts Receivable of \$10: -\$10 cash
 - Why? Recorded as +\$10 on the IS, but no cash collected

CASH FLOWS FROM INVESTING ACTIVITIES

- Measures cash generated and used for the firm's internal investments that will benefit the firm's projects and operations: Capital Expenditures, PP&E, M&A, purchases of investments
- Purchases are negative because they use up cash, and sales are positive, regardless of gain/loss

Apple Inc.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	Years ended		
	September 24, 2022	September 25, 2021	September 26, 2020
Cash, cash equivalents and restricted cash, beginning balances	\$ 35,929	\$ 39,789	\$ 50,224
Operating activities:			
Net income	99,803	94,680	57,411
Adjustments to reconcile net income to cash generated by operating activities:			
Depreciation and amortization	11,104	11,284	11,056
Share-based compensation expense	9,038	7,906	6,829
Deferred income tax expense/(benefit)	895	(4,774)	(215)
Other	111	(147)	(97)
Changes in operating assets and liabilities:			
Accounts receivable, net	(1,823)	(10,125)	6,917
Inventories	1,484	(2,642)	(127)
Vendor non-trade receivables	(7,520)	(3,903)	1,553
Other current and non-current assets	(6,499)	(6,042)	(9,588)
Accounts payable	9,448	12,326	(4,062)
Deferred revenue	478	1,676	2,081
Other current and non-current liabilities	5,632	5,799	8,916
Cash generated by operating activities	122,151	104,038	80,674
Investing activities:			
Purchases of marketable securities	(76,923)	(109,558)	(114,938)
Proceeds from maturities of marketable securities	29,917	59,023	69,918
Proceeds from sales of marketable securities	37,446	47,460	50,473
Payments for acquisition of property, plant and equipment	(10,708)	(11,085)	(7,309)
Payments made in connection with business acquisitions, net	(306)	(33)	(1,524)
Other	(1,780)	(352)	(909)
Cash used in investing activities	(22,354)	(14,545)	(4,289)
Financing activities:			
Payments for taxes related to net share settlement of equity awards	(6,223)	(6,556)	(3,634)
Payments for dividends and dividend equivalents	(14,841)	(14,467)	(14,081)
Repurchases of common stock	(89,402)	(85,971)	(72,358)
Proceeds from issuance of term debt, net	5,465	20,393	16,091
Repayments of term debt	(9,543)	(8,750)	(12,629)
Proceeds from/(Repayments of) commercial paper, net	3,955	1,022	(963)
Other	(160)	976	754
Cash used in financing activities	(110,749)	(93,353)	(66,820)
Decrease in cash, cash equivalents and restricted cash	(10,952)	(3,860)	(10,435)
Cash, cash equivalents and restricted cash, ending balances	\$ 24,977	\$ 35,929	\$ 39,789

CASH FLOWS FROM FINANCING ACTIVITIES

- Measures cash generated and used for raising capital/deploying capital back to investors: issuing debt, paying back principal, issuing dividends, issuing shares, repurchasing shares
- Can show health/direction of a company's capital structure
- Interest payments do not show up here as they are accounted for in the Income Statement as a non-operating expense

Non-Cash vs Cash Expenses/Income

- Reconcile between income statement and actual cash flow

EXAMPLES OF NON-CASH EXPENSES

- **Depreciation & Amortization (D&A):** the reduction of a tangible/intangible asset's book value over time
 - Added back when bridging from income statement to cash flow
- **Gain/Loss on Sale:** created by the difference in sale price and book value of an asset but represents no real movement of cash
 - A loss is added back and a gain is subtracted when bridging from income statement to cash flow
- **Stock-Based Compensation:** employees rewarded partly with shares rather than cash (debatable as an add-back)

TAX IMPACT

- Non-cash expenses (and gains) are part of pre-tax income, so they are built into tax expense
- A company with a high degree of fixed asset needs will have high levels of depreciation on those assets
 - If it reports \$100mm of depreciation in a year and has a 25% tax rate, the company saves \$25mm in taxes even though it saw no cash actually leave
 - Similar concept to the "interest tax shield," but interest is a cash expense

VALUATION APPLICATION

- Starting from the income statement, must add back any non-cash items included in your UFCF or LFCF (see next slide)



Cash Flows

• Cash flows form the backbone of valuation

UNLEVERED FREE CASH FLOW (UFCF)

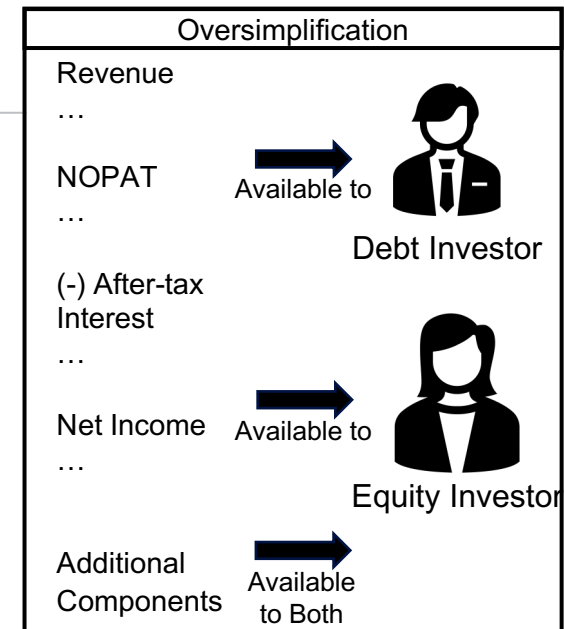
- Cash flow available to both debt and equity investors
 - “Unlevered” indicates that these are cash flows before the impact of capital structure is considered
- Components:
 - Net Operating Profit after Taxes (NOPAT) = $EBIT * (1 - \text{Tax Rate})$
 - (-) Increase in Net Operating Working Capital (NOWC)
 - (+) D&A
 - (+) Other Non-Cash Expenses
 - (-) CapEx
 - = Unlevered Free Cash Flow

Levered Free Cash Flow (LFCF)

- Cash flow available only to equity investors
 - “Levered” indicates that the impact of capital structure is considered, in the form of interest. This interest is only available to debt investors, so it must be netted to determine cash flow available to equity investors
- Components:
 - Net Income
 - (-) Increase in Net Operating Working Capital (NOWC)
 - (+) D&A
 - (+) Other Non-Cash Expenses
 - (-) CapEx
 - (-) Mandatory debt principal repayments
 - = Levered Free Cash Flow

EBITDA

- Stands for “Earnings Before Interest, Taxes, Depreciation, and Amortization”
- Often used as a proxy for unlevered free cash flow
- Like UFCF, it is “before” interest expense
- EBITDA also adds back D&A, a major non-cash expense



Total cash burn / runway

- **Very common RX interview category**

WHAT ARE CASH INFLOWS AND OUTFLOWS?

- Assume at first revenue is all cash
- Assume at first COGS and SG&A are all cash
- Capex
- Taxes
- Interest
- "Working capital investment"

SAMPLE QUESTION

- DevinCo makes children's toys that has experienced lasting COVID supply chain effects and cyclical headwinds
- 50 in EBITDA
- 200 in debt at 10% cash (Schwimmer & Co are tough lenders)
- 10 in D&A
- 10 in cash taxes yearly
- 30 yearly in capex
- 25 in cash right now

WHAT AREN'T CASH INFLOWS AND OUTFLOWS?

- Selling something (revenue) "on account"
- D&A
- Write-downs
- PIK interest

ANSWER

- What's the cash burn yearly and how much runway does DevinCo have?



Enterprise vs. Equity Value

• Different Valuations of a Business

ENTERPRISE VALUE

- Enterprise Value (**EV**) represents the value of the company that is attributable to all investors
- **Formula:**
 - **EV** = Equity Value + Preferred Stock + Noncontrolling Interest + *Net Debt* (Debt-Cash & Cash equivalents)
- Theoretically, EV is what somebody would pay for the business
- **Add** debt since it needs to be paid out or refinanced
- **Subtract** cash since received and could use to pay down debt

EQUITY VALUE

- Equity value (or market capitalization) represents the value that is attributable to only the equity holders
- This represents the residual value left to equity after paying other investors/owners in the business
- **Formula:**
 - **Equity Value** = EV + Cash & equivalents – Debt Noncontrolling Interest – Preferred Stock - NCI
 - **Market Cap** = Shares Outstanding * Share price

APPLICATION

Valuation

	Perpetuity	EBITDA
Enterprise value	1,408,729	1,163,804
Net debt	(98,769)	(98,769)
Equity value	1,507,498	1,262,573
Shares outstanding	4,776	4,776
Equity value per share	\$315.65	\$264.36

- Understanding the difference between equity value and enterprise value is key for valuation
- Enterprise value is typically what a DCF or EV/EBITDA multiple (discussed later) will derive
- To get to what a stock price should be trading at, we need to understand how to go from Enterprise value to Equity Value
- **House Metaphor:**
 - Enterprise Value = **Home Sale Price**
 - Equity Value = **Home Sale Price – Mortgage**



Multiples

• Company comparison on Value/Earnings ratio basis

MULTIPLES

- EV/Revenue
- **EV/EBITDA**
- **EV/EBIT**
- P/E
 - P/E = Share Price/Earnings Per Share **OR**
 - P/E = Market Capitalization/Net Income
- Price/Book -- if less than 1 could indicate **distress**

TIMING OF MULTIPLES

- Trailing Multiple: denominator is a measure of earnings over the last twelve months (LTM)
 - Ex: EV / LTM EBITDA
- Forward Multiple: denominator is a measure of earnings over the next twelve months
 - Ex: EV / NTM EBITDA
- For a growing company, a trailing multiple will almost always be higher than a forward multiple because the company's earnings should be increasing (higher denominator = lower ratio)

PURPOSE

- Allows us to compare companies' valuations relative to a specific financial metric
 - Can give insight into which companies may be over or under-valued relative to peers
- Also eliminates any (hopefully) minor differences in scale between companies' cash flows and valuations, allowing for direct comparison

KEEPING MULTIPLES "APPLES TO APPLES"

- Only create multiples which make the following comparisons:
 - Enterprise Value → "Unlevered" earnings measures (i.e. before interest expense)
 - Ex: EBITDA, EBIT, Revenue
 - Equity Value → "Levered" earnings measures (i.e. after interest expense)
 - Net Income
 - Multiple denominator and numerator

Discounted Cash Flow (DCF)

• Fundamental concept in valuation

TIME VALUE OF MONEY

- \$1 today is worth more than \$1 tomorrow for several reasons:
 - Opportunity Cost: \$1 today could be invested so that it is worth more than \$1 at a future point in time
 - Inflation: the purchasing power of \$1 today is greater than it will be in the future due to inflation
 - Risk: future payment may not be received (possibility of default)

COST OF CAPITAL

- A company's weighted average cost of capital (WACC) is the blended expected rate of return of ALL of its investors, including both debt and equity
- Formula: $WACC = w_d * r_d * (1 - T) + w_e * r_e$, where:
 - w_d = the weight of debt according to market value (but often simplified to simply book value)
 - w_e = the weight of equity, calculated as the market cap (share price * fully diluted shares outstanding)
 - r_d = the cost of debt
 - r_e = the cost of equity

VALUATION THEORY

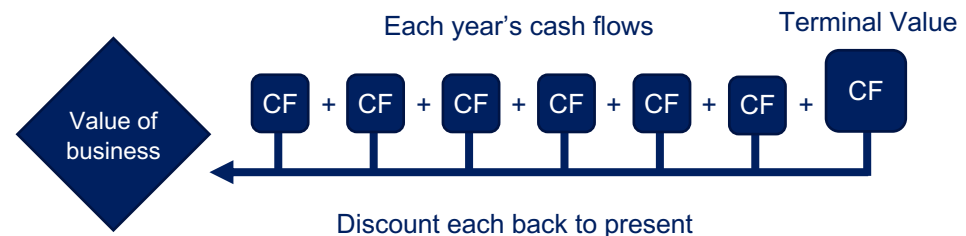
- A company is valued based on its expected future cash flows
- Since future cash flows are worth less than current ones, we need to "discount" future cash flows back to present value when valuing a company

- Cash flows are discounted at the company's cost of capital

(\$ millions)	2024	2025	2026	2027	WACC
UFCF		200.0	206.0	212.2	9.0%
PV		183.5	173.4	163.8	
Sum PV	520.7				

- In this example, $183.5 = 200 / (1 + 0.09)^1$ and $173.4 = 206 / (1 + 0.09)^2$

VISUALIZED



Discounted Cash Flow (DCF) Pt. 2

• Components of Cost of Capital

COST OF EQUITY

- Cost of equity is almost universally calculated using the Capital Asset Pricing Model (CAPM)
- Formula: $r_e = r_f + \text{market risk premium} * \text{beta}$, where:
- r_f = the risk-free rate, generally defined as the yield on the 10-year US treasury
- Market risk premium = the expected return of the stock market above the risk-free rate—in other terms, $E(r_m) - r_f$
- Beta = the covariance of the company's equity returns with the market

BETA IN DETAIL

- Beta of 1: indicates that a stock's price moves exactly in line with the market (if the market gains 1% over a certain period, the stock gains 1%; if the market falls 1%, the stock falls 1%)
- Beta of 0: a company is perfectly uncorrelated with the market (there is no discernable relationships between its price movement and the overall market's price movement)
- Beta of -1: a company is perfectly negatively correlated with the market (its price moves completely inversely to the market)
- Levered beta = $\text{Unlevered beta} * (1 + (1 - T) * (\text{Debt}/\text{Equity}))$
 - Use a company's levered beta in its cost of equity because it incorporates the risk created by the company's specific capital structure (and thus additional return expected by equity investors)

COST OF DEBT

- Two most accepted sources for cost of debt:
- 1. The yield to maturity (YTM) on a company's outstanding long-term debt
- 2. The long-term (generally 10 year) yield on a collection of corporate bonds which match the company's credit rating (accessible on CapitalIQ > Markets > Interest Rates > Corporate Yield Curve)

BE CAREFUL WHO YOUR DISCOUNT RATE APPLIES TO

- For an Unlevered DCF (using unlevered free cash flows), the discount rate should be the weighted average cost of capital (WACC) because these cash flows are available to ALL investors
- For a Levered DCF or LBO Model, the discount rate should be the cost of equity (r_e) because cash flows in these models are available only to equity investors
 - Note that the cost of equity is always higher than the cost of debt because equity holders' required rate of return is higher
 - Equity holders take on more risk than debtholders because they are the residual claimant on the business after debtholders have been paid out

Precedent Transactions

• Comparing previously-approved M&A transactions

Basics of Precedent Transactions

- Fundamentally grounded in the same principles as comparable companies analysis
- Precedent transaction merely measures the amount that a company is purchased for
 - It is inherent susceptible to market conditions (i.e., companies are bought for more money when the M&A market is hot)
 - Precedent transaction analysis also generates higher valuations because companies pay a premium when purchasing another company
 - For example, if a company holds its equity at \$50 per share, it must intuitively receive a premium in order to sell

Date	Target	Transaction		Valuation		
		Value (\$M)	Buyers	EV/Sales	EV/EBITDA	EV/EBIT
01/24/2017	Current Ltd	2,350	Average Limited	1.9x	9.4x	11.2x
04/19/2016	Recent Inc	6,500	Bohemeth Industires	1.4x	8.0x	12.6x
04/19/2014	Past Co	2,150	Other Group	1.3x	8.7x	12.1x
11/07/2014	Historical LLP	450	Junior Enterprises	2.3x	11.1x	13.6x
11/01/2012	Old Group	325	Minature Company	5.1x	18.8x	21.5x
10/07/2011	Dated Enterprises	150	Micro Partners	2.1x	9.3x	13.2x
Average				2.3x	10.9x	14.0x
Median				2.0x	9.4x	12.9x



Terminal Value

• The Value of an Investment Beyond the Forecast Period

Concept

- It is impractical/inaccurate to forecast a company's cashflows beyond a certain period and most Discounted Cash Flows and other financial models only forecast 5-7 years into the future
- The Terminal Value represents the value of the business beyond the end of the projection phase and typically represents a large portion of the enterprise value calculation
- The two methods for calculating the TV are the Gordon Growth Method and the Multiples Method
- Both methods make large assumptions, so it is important to sensitize inputs when factoring a TV into a DCF

Gordon Growth

- This method assumes a constant perpetual growth rate of cash flows into the future
- This method is less popular, especially in the PE/PC space as it makes the massive assumption that cash flows will steadily grow into perpetuity
 - Even for the most mature companies, this is a bold and unrealistic assumption

Terminal Value #1 (Perpetual Growth Method)

$$TV = \frac{[FCF_n \times (1 + g)]}{(WACC - g)}$$

Multiples

- This method applies a multiple to a financial metric of the company in its final projection year (usually EBITDA) and discounts it back to present value
- While this method is more popular than the Gordon Growth, it still makes the large assumption that one can predict an exit multiple years into the future
 - Ex: Software companies are trading at an average of ~10x EBITDA today but were trading at ~23x in mid-2021

Terminal Value #2 (Exit Multiple Method)

$$TV = \text{Financial Metric} \times \text{Trading Multiple}$$

(i.e. EBITDA x 10.0)



Restructuring Financial Health Ratios

Growth/Profitability Ratios

- Growth rates = "think" horizontal analysis
 - Trend overtime for Sales, EBITDA, EBIT, Net Income
- Profitability = "think" vertical analysis (margins indicate the earnings produced from sales)
 - Profit or earnings / revenue (e.g., net profit margin)
 - Return on Assets: Net Income / Total Assets
 - *Better margin = better profitability*

Leverage Ratios

- Assess a company's level of debt relative to its equity or assets (measure of financial risk)
- Debt to equity: total debt / total equity
- Total Debt / EBITDA (can't exceed 3.0x)
- Total debt / EBITDA (roughly measures how many years it would take for a company to pay off its debt using its current EBITDA)
- $(\text{Total Cash Payable Debt} + \text{Capitalized Leases}) / \text{EBITDAR}$ (can't exceed 4.0x)

Liquidity Ratios

- Measure short-term ability of the company to pay its maturing obligations and meet unexpected cash needs (focused by short-creditors)
- Working Capital: Current Assets – Current Liabilities
- Current Ratio: Currents Assets / Current Liabilities
- Quick Ratio (acid test): $(\text{Cash} + \text{AR}) / \text{Current Liabilities}$

Coverage Ratios

- How many times over can your cash flows cover interest expense
- $\text{EBITDA} / \text{Interest Expense}$ (can't fall below 5.0x)
- $(\text{EBITDA} - \text{CapEx}) / \text{Interest Expense}$ (can't fall below 2.0x)

Solvency Ratios

- Measure the ability of the company to survive over a long period of time (long-term creditors and shareholders focus on a company's ability to meet interest payments and repay debt at maturity)
- Debt to assets ratio: total liability / total assets
- Times interest earned: $\text{EBIT} / \text{interest expense}$
- Free Cash flow: net cash provided by operating activities – CapEx – cash dividends

Additional Ratios

- Operational efficiency ratios:
 - Assets turnover ratio: $\text{Revenue} / \text{total Assets}$
 - Inventory Turnover Ratio: $\text{COGS} / \text{Average Inventory}$

What's Next?

- **9/23:** Intro Meeting
- **9/30:** Accounting and Valuation Quick Overview

- **10/7:** Intro to Debt
- **10/17:** Blackstone Credit Guest Speakers
- **10/21:** Prof Smith RX 101
- **10/28:** Max Frumes (Caesars Palace Coup) Guest Speaker
- **11/4:** Recruiting Walkthrough
- **11/11:** Intro to Liability Management
- **11/19:** Evercore Guest Speaker
- **12/2:** Summer Analyst Experience Discussion