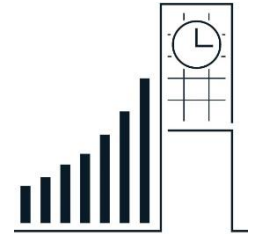


ACCOUNTING PART 2

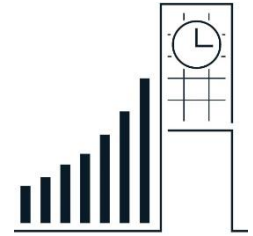
FALL 2023

AGENDA



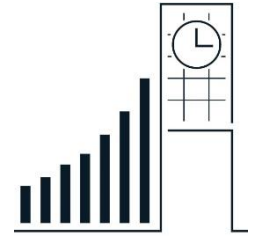
- ▶ Ratio Analysis
- ▶ Understanding Free Cash Flow to Firm
- ▶ Projecting the income statement
- ▶ Adjusting the income statement
- ▶ Projecting cash flow statement items
- ▶ Net working capital
- ▶ Projecting net working capital
- ▶ Enterprise value
- ▶ Deliverable

RATIO ANALYSIS



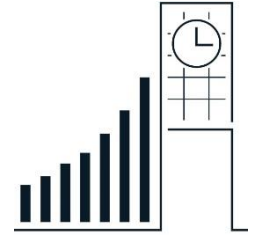
- ▶ What is a financial ratio?
 - Financial ratios show relationships between line items and help financial analysts compare companies
- ▶ Profitability
 - Demonstrates how profitable a company is (i.e., how much does it make in profit for each dollar of revenue?)
- ▶ Leverage
 - Demonstrates how much debt a company has; shows riskiness of a business
- ▶ Asset turnover
 - Measures efficiency of a company's assets (i.e., how much revenue does this factory produce each year?)

RATIO ANALYSIS CONT.



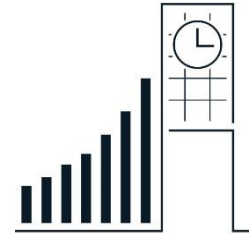
- ▶ Profitability
 - Operating Profit / Sales
 - COGS / Sales
 - SG&A / Sales
- ▶ Leverage
 - Debt / Equity
 - Debt / EBITDA
- ▶ Asset turnover
 - Sales / Property, Plant, and Equipment
 - Sales / Accounts Receivables

FREE CASH FLOW TO FIRM



- ▶ FCFF, also called ‘unlevered free cash flow’, is essentially a pure measure of a company’s profitability after all its expenses and reinvestments have been incurred
- ▶ Cash available to pay investors after a company pays its costs of doing business

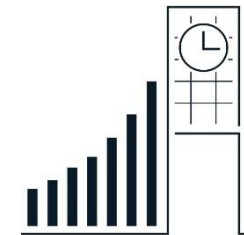
CALCULATING FCFF



- ▶ **FCFF = EBIT x (1 - t) + D&A - CapEx - ΔNWC**
- ▶ Start with tax affected EBIT
- ▶ Add back non-cash expenses from income statement
- ▶ Subtract out cash expenses not on income statement
- ▶ Subtract additions to net working capital
 - $NWC = \text{Current Assets} - \text{Current Liabilities}$

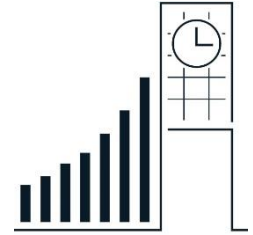
| (\$mm) | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Revenue | \$2,000.0 | \$2,160.0 | \$2,289.6 | \$2,381.2 | \$2,452.6 | \$2,501.7 |
| Revenue growth | | 8.0% | 6.0% | 4.0% | 3.0% | 2.0% |
| EBIT | 1,000.0 | 1,080.0 | 1,144.8 | 1,190.6 | 1,226.3 | 1,250.8 |
| EBIT margin | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| NOPAT | \$600.0 | \$648.0 | \$686.9 | \$714.4 | \$735.8 | \$750.5 |
| Plus: D&A | 95.0 | 103.7 | 111.0 | 116.7 | 121.4 | 125.1 |
| Less: CapEx | (100.0) | (108.0) | (114.5) | (119.1) | (122.6) | (125.1) |
| Less: Δ NWC | | (8.0) | (6.5) | (4.6) | (3.6) | (2.5) |
| FCFF | \$595.0 | \$635.7 | \$677.0 | \$707.4 | \$731.0 | \$748.0 |

PROJECTING THE INCOME STATEMENT



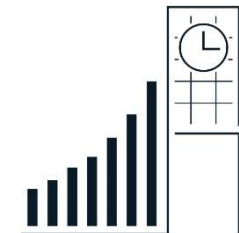
- ▶ **FCFF = EBIT x (1 - t) + D&A - CapEx - ΔNWC**
- ▶ Revenues – assign a growth rate for each projection year
 - Look at historical growth and what the growth drivers are (store count, personal income growth, etc.)
- ▶ Expenses – assign a margin to each expense
 - Project COGS as a % of sales (pay attention to major changes in this over time)
 - Project SG&A as a % of sales (does the company need additional SG&A expense moving forward?)
- ▶ Taxes – look at historical effective tax rate
- ▶ Unusual items
 - Eliminate unusual line items or straight-line them

ADJUSTING UNUSUAL ITEMS



- ▶ Accounting figures are never perfect and need to be adjusted to accurately reflect what a company earned
- ▶ GAAP vs. Adjusted figures
 - GAAP figures follow strict rules that aren't always flexible, and sometimes cause financial data to be unclear
 - We need to remove one-time or non-recurring charges so that we can make accurate projections from historical data

ADJUSTING INCOME STATEMENT

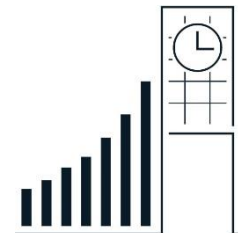


- ▶ Example Co. had a \$5 billion fine in 2012 and a \$1.2 billion dollar expense for their largest warehouse in 2015
- ▶ Why would we adjust these out?
 - It is hard to make sense of GAAP data

Example Co Income Statement (in millions)

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Revenue | \$ 10,000 | \$ 10,500 | \$ 11,235 | \$ 12,134 | \$ 13,226 | \$ 13,887 |
| <i>Growth</i> | | 5.0% | 7.0% | 8.0% | 9.0% | 5.0% |
| COGS | 4,400 | 4,410 | 4,494 | 4,854 | 5,555 | 6,110 |
| <i>Margin</i> | 44.0% | 42.0% | 40.0% | 40.0% | 42.0% | 44.0% |
| SG&A | 1,100 | 1,071 | 1,124 | 1,213 | 1,323 | 1,389 |
| <i>Margin</i> | 11.0% | 10.2% | 10.0% | 10.0% | 10.0% | 10.0% |
| Non-recurring expenses | - | (5,000.0) | - | - | (1,200.0) | - |
| GAAP operating profit | \$ 4,500 | \$ 19 | \$ 5,618 | \$ 6,067 | \$ 5,148 | \$ 6,388 |
| <i>Margin</i> | 45.0% | 0.2% | 50.0% | 50.0% | 38.9% | 46.0% |

ADJUSTING INCOME STATEMENT EXAMPLE



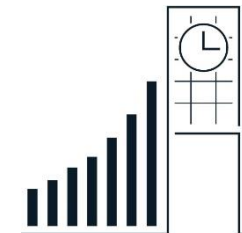
- ▶ Now that we adjusted this expense out, it is easier to see how the business has changed over time
- ▶ It is now easier to make projections based on this data

Example Co Income Statement (in millions)

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
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| <i>Margin</i> | 11.0% | 10.2% | 10.0% | 10.0% | 10.0% | 10.0% |
| Non-recurring expenses | - | (5,000.0) | - | - | (1,200.0) | - |
| Adjusted operating profit | \$ 4,500 | \$ 5,019 | \$ 5,618 | \$ 6,067 | \$ 6,348 | \$ 6,388 |
| <i>Margin</i> | 45.0% | 47.8% | 50.0% | 50.0% | 48.0% | 46.0% |

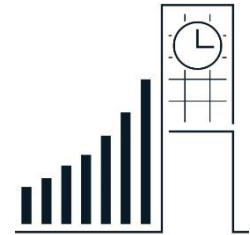
PROJECTING NECESSARY

CASH FLOW LINES



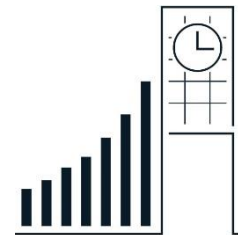
- ▶ **FCFF = EBIT x (1 - t) + D&A - CapEx - ΔNWC**
- ▶ Capital expenditures – project as a % of sales
 - As sales grow you will need to make more expenditures
- ▶ Depreciation
 - % of CapEx
 - CapEx and depreciation should be equivalent in the final year of your DCF
- ▶ Amortization
 - % of intangible assets
 - Amortization spreads out the initial capital cost of intangible assets (e.g., patents, IP, etc.) over the asset's useful life
 - Look in footnotes of recent financials for specific policies

NET WORKING CAPITAL

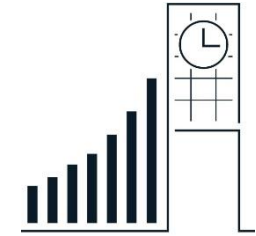


- ▶ **FCFF = EBIT x (1 - t) + D&A - CapEx - Δ NWC**
- ▶ Net working capital is used to measure the short-term liquidity and efficiency of a business
 - $NWC = \text{Current Assets} - \text{Current Liabilities}$ (excluding interest bearing assets and liabilities)
- ▶ Current assets (increase in CA decreases cash)
 - Accounts receivables – money owed to the company
 - Inventory – goods held by the company
- ▶ Current liabilities (increase in CL increases cash)
 - Accounts payable – money you owe to other companies
 - Salaries payable – money you owe to employees

NET WORKING CAPITAL

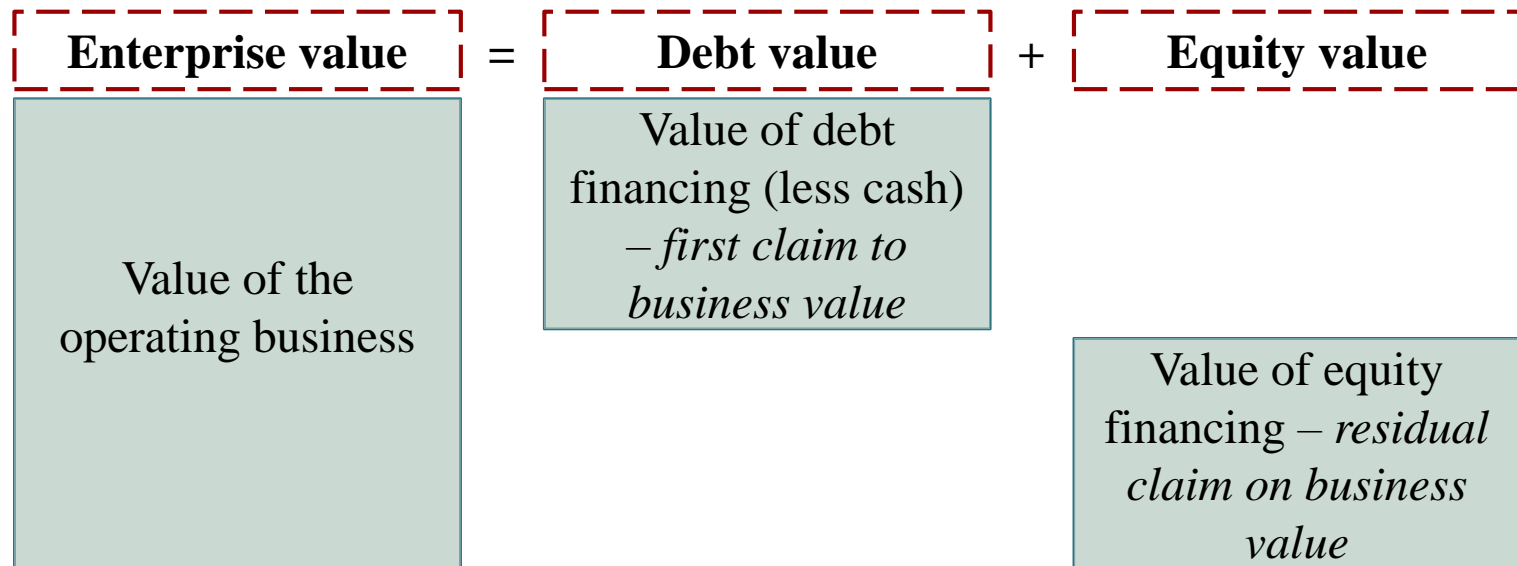


- ▶ We need to project out NWC because it affects the cash flow of the company
- ▶ We project these using turnover measurements
- ▶ Asset side:
 - $\frac{AR}{Sales} = \frac{AR\ Days}{365}$; $AR\ Days = \frac{AR}{Sales} * 365$
 - $\frac{Inv}{COGS} = \frac{Inv\ Days}{365}$; $Inv\ Days = \frac{Inv}{COGS} * 365$
 - Prepaid expenses can be projected as a % of SG&A
- ▶ Liabilities side:
 - $\frac{AP}{COGS} = \frac{AP\ Days}{365}$; $AP\ Days = \frac{AP}{COGS} * 365$
 - Accrued liabilities can be projected as a % of SG&A

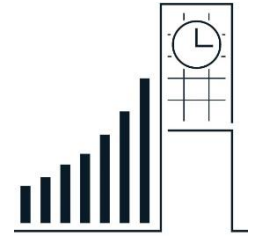


ENTERPRISE VALUE (EV)

- ▶ Buying a share in a business grants you ownership of the **equity**, not the **enterprise**
- ▶ EV represents the value of the **entire firm's** operating assets available to **all suppliers of capital** to the firm



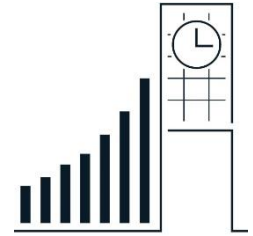
ENTERPRISE VALUE EXAMPLE



- ▶ What's the enterprise value for ExampleCo?

ExampleCo Balance Sheet

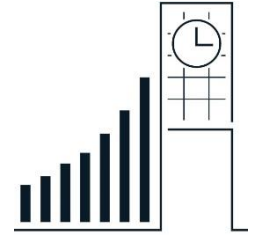
| | |
|-------------------------|-----------------|
| Cash \$200 | Debt \$400 |
| Enterprise Value ??? | Equity \$400 |



DELIVERABLE 3

- ▶ Project out the income statement, net working capital, capital expenditures, and D&A for five years for PayPal
- ▶ Due on Sunday, October 8th at 11:59 PM
 - This deliverable is **mandatory**
 - Deliverable should be done completely in excel
- ▶ Email it to bingfinancesociety@gmail.com
 - Subject line must be: Team [number] – Deliverable 3

QUESTIONS?



- ▶ Check out our website: **bingfinance.org**
- ▶ Email us at:
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