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 = Current Assets – 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

What is an example of a non-recurring item?

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
Growth				*5.0%*		*7.0%*		*8.0%*		*9.0%*		*5.0%*
COGS		4,400		4,410		4,494		4,854		5,555		6,110
Margin		*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
Margin		*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
Margin		*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)

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Growth		*5.0%*	*7.0%*	*8.0%*	*9.0%*	*5.0%*
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SG&A	1,100	1,071	1,124	1,213	1,323	1,389
Margin	*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
Margin	*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 – ΔNWC**
- Net working capital is used to measure the short-term liquidity and efficiency of a business
  - NWC = Current Assets – 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	=	**Debt value**	+	**Equity value**
Value of the operating business		Value of debt financing (less cash) – *first claim to business value*		Value of equity financing – *residual claim on business value*

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?

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