UTEFA – Learning Session #1
Accounting and Financial Ratios

September 20, 2018

Agenda

- Introduction to Accounting
- Equity Value and Enterprise Value
- Financial Statement Analysis / Ratios
- Questions and Answers

Introduction to Accounting

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Introduction

Accounting Overview

- **Definition:** the systematic and comprehensive recording of financial transactions pertaining to a business. Accounting also refers to the process of summarizing, analyzing and reporting these transactions to oversight agencies, regulators and tax collection entities
- There are three main types of accounting – financial, managerial and tax accounting
- Publicly traded companies are required to disclose their financial accounts to enable their creditors and investors to make informed decisions

Balance Sheet

Current assets
Cash, Accounts Receivables

Long term assets
PP&E, Intangibles

Short term liabilities
Short term debt, Accounts Payables

Long term liabilities
Long term debt

Equity

P&L

Sales

Cost of goods sold (COGS) excl. D&A

Gross profit/ margin

Operating costs/ SG&A excl. D&A
Personnel, marketing, others

EBITDA

Depreciation and amortization (D&A)

Operating profit/ EBIT

Net interest expenses/ income

Tax

Net Income

Cash Flow Statement

Cash flow from Operations
Performance of the period, Variation in working capital etc…

Cash flow from investing activities
Capital expenditure, Addition of intangible, Acquisitions etc…

Cash flow from financing activities
Dividends paid, Interests paid, Principal on debt paid, debt raised, equity raised etc…

The Income Statement

The Income Statement
The Income Statement lists a company's **<u>revenue/sales</u>**, **<u>expenses</u>** and **<u>taxes</u>** with it's after-tax net income at the very bottom, **over a period of time**

Criteria to Appear on the Income Statement	Main Sections of the Income Statement
1. Must correspond to the period shown on the Income Statement 2. Must affect the company's taxes *Ex. Interest paid on debt is tax-deductible so it appears on the Income Statement, BUT repaying debt principal is not tax-deductible so it does not appear)*	**1. Revenue and Cost of Goods Sold (COGS)** **Revenue:** value of the products/services the company sells during that period **COGS:** represents the expenses that <u>directly link</u> to the sale of those products/services **2. Operating Expenses:** items that are not directly linked to product sales (e.g. employee salaries, marketing expenses, rent, R&D, etc.) **3. Other Income and Expenses:** simply put it is the other stuff that affects Earnings Before Tax Ex. Gains/Loses on Investments, Impairment Charges, Interest Expense, Write-Downs, etc. **4. Taxes and Net Income** **Net Income:** represents the companies "bottom line" or earnings for that period **Taxes:** affect of taxes always appears on Income Statements

The Balance Sheet

The Balance Sheet

The Balance Sheet shows the company's **<u>resources</u>** – its Assets – an how it **<u>acquired</u>** them – its Liabilities and Equity – **at a specific point in time**

Key Balance Sheet Criteria

1. **Assets = Liabilities + Equity**
2. **An Asset** is an item that will directly or indirectly result in **additional cash in the future**
3. **A Liability** is an item that will directly or indirectly result in **less cash in the future**. Liabilities are used to **fund** a business and are related to **external parties** (i.e. creditors)
4. **Equity** is also used to **fund** a business, but they refer to the company's own **internal operations** rather than external parties (i.e. owners and investors)

Sample Balance Sheet

[Company Name] — **Balance Sheet**

Date: 9/29/2008

Assets	2008	2007
Current Assets		
Cash	11,874	
Accounts receivable		
Inventory		
Prepaid expenses		
Short-term investments		
Total current assets	$ 11,874	$ -
Fixed (Long-Term) Assets		
Long-term investments	1,208	
Property, plant, and equipment	15,340	
(Less accumulated depreciation)	(2,200)	
Intangible assets		
Total fixed assets	$ 14,348	$ -
Other Assets		
Deferred income tax		
Other		
Total Other Assets	$ -	$ -
Total Assets	**$ 26,222**	**$ -**
Liabilities and Owner's Equity		
Current Liabilities		
Accounts payable	8,060	
Short-term loans		
Income taxes payable	3,145	
Accrued salaries and wages		
Unearned revenue		
Current portion of long-term debt		
Total current liabilities	$ 11,205	$ -
Long-Term Liabilities		
Long-term debt	3,450	
Deferred income tax		
Other		
Total long-term liabilities	$ 3,450	$ -
Owner's Equity		
Owner's investment	7,178	
Retained earnings	4,389	
Other		
Total owner's equity	$ 11,567	$ -
Total Liabilities and Owner's Equity	**$ 26,222**	**$ -**

The Cash Flow Statement

The Cash Flow Statement

As with the Income Statement, the CFS tracks changes **over a period of time**. The CFS exists for 2 reasons:

1. Adjust for **non-cash revenue or expenses** shown on the Income Statement to determine how cash balance actually changes
2. Reflect the **additional cash inflows and outflows** that have not already appeared on the Income Statements (e.g. CapEx, Dividends, Debt Repayments, etc.)

Main Sections the Cash Flow Statement

1. **Cash Flow from Operations (CFO)**
   Net Income from I/S flows at the top. Then you adjust for non-cash expenses, and take into account how operational Balance Sheet items have changed.
2. **Cash Flow from Investing (CFI)**
   Reflect anything related to the company's **investments**, **acquisitions** and **PP&E**. Purchases are negative because they *use* cash and sales are positive because they *gain* cash.
3. **Cash Flow from Financing (CFF)**
   Items related to debt, dividends and issuing or repurchasing shares are included here.

Note: Items already recorded on the Income Statement will not appear on the CFS unless you want to "re-classify" something

Sample Cash Flow Statement

Cash flow statement for George's Catering
for the year ended 31st of May 2010

	$
CASH FLOW FROM OPERATING ACTIVITIES:	
Cash receipts from customers (10,500 + 5,000)	15,500
Cash paid to suppliers and employees (4,000 + 200)	(4,200)
Cash generated from operations	11,300
Net cash flow from operating activities	11,300
CASH FLOW FROM INVESTING ACTIVITIES	
Additions to equipment	(12,000)
Net cash flow from investing activities	(12,000)
CASH FLOW FROM FINANCING ACTIVITIES	
Proceeds from capital contributed	15,000
Drawings	(500)
Proceeds from loan	5,000
Payment of loan	(4,000)
Net cash flow from financing activities	15,500
NET INCREASE/DECREASE IN CASH	14,800
Cash at the beginning of the period	-
Cash at the end of the period	14,800

The Cash Flow Statement *continued*

Cash Is King!!

The Cash Flow Statement is often cited as being the most important of the three statements. Note that analysts find the CFS is often more helpful for spotting weaknesses than gauging success.

WHY?
Because a shortage of cash can throw a company into bankruptcy, but lots of cash doesn't ensure success!

Things to Look For:

- Usually, CFO exceeds Net Income (because you add back non-cash charges like Depreciation and the increases in current assets and current liabilities should cancel over time). If current assets increase a lot more than current liabilities it may signify difficulty in collecting receivables or selling inventory → either of these can cause trouble for the company

- CFF or CFI being a major source of cash. For example, if the sale of PP&E is a major source of cash for several periods the company will face a cash shortage eventually as a company cannot sell PP&E forever! When we use a DCF, we are mostly looking at CFO because we want to insure that the company's operations are sound!

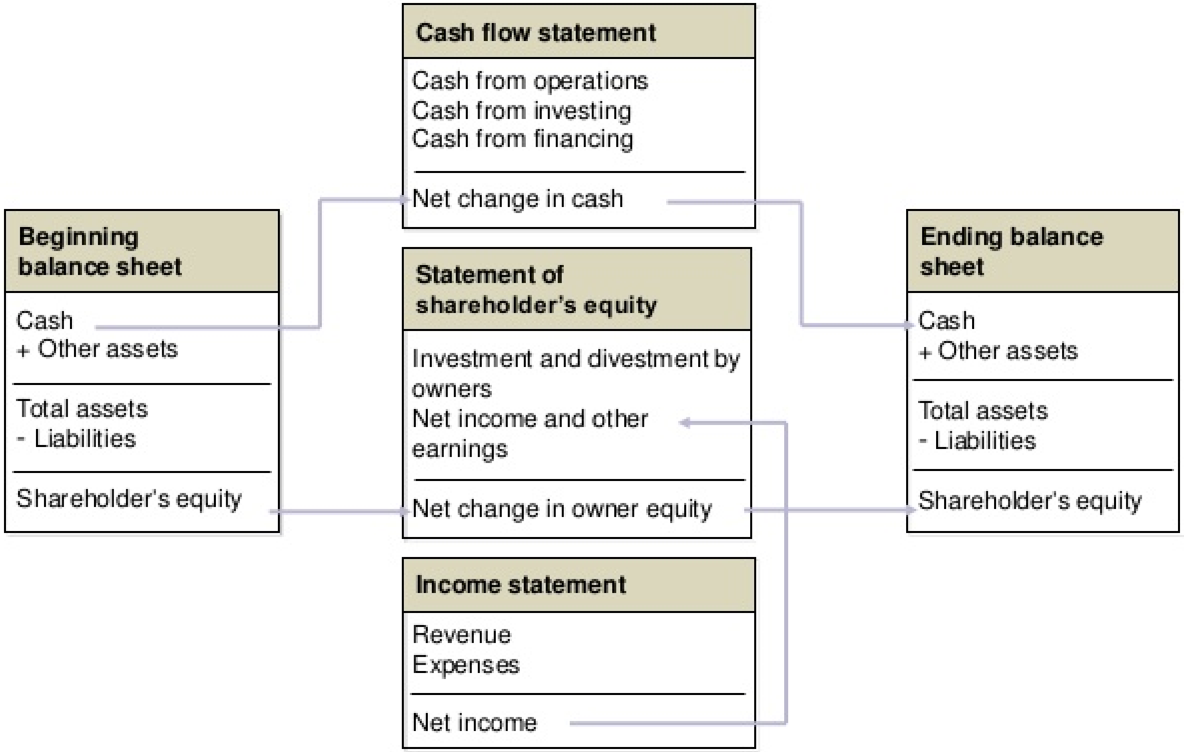
Cash Flow Signs of a Healthy Company

- Operations are a major source of cash (not a use of cash!)
- Investing activities include more purchases than sales of capital assets → company is investing in itself
- Financing activities are not dominated by borrowing

How the 3 Statements Link Together

Let's do some examples!
(Assume tax rate = 40%)

1. Depreciation increases by $10
2. Accrued Expenses increases by $10
3. Accrued Expenses then decreases by $10
4. $100 Write-Down of Assets
5. $100 Write-Down of Debt



Equity Value vs. Enterprise Value

Overview

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Before we can start valuing companies and look at Financial Ratios we need to understand Equity Value and Enterprise Value

Equity Value *(also known as Market Capitalization or Market Cap)*
= Share Price * Total Number of Shares

- At a basic level, it answers the question “how much is this company worth?”
- I like to think of it as the “sticker price”

Enterprise Value (EV) = Equity Value + Debt + NCI + Preferred Shares – Cash
Enterprise Value represents the ***actual cost*** of buying a company

The actual cost of buying a company is often very different from its “sticker price” (i.e. Equity Value). To calculate Enterprise Value, you start with Equity Value, add anything that will need to be repaid upon acquisition and subtract anything that can save you money in the future.

- **Subtract items** that save you money or potentially give you extra cash, either immediately or in the long term (e.g. Cash and sometimes short-term/long-term investments, net operating losses, etc.)
- **Add items:**
  1) When they need to be repaid immediately after an acquisition (e.g. Debt, Preferred Shares)
  2) When it must be repaid in the future but likely won’t come from CFO (e.g. Pension)
  3) For comparability purposes (e.g. Noncontrolling Interests)

When/How Do You Use Them?

With this, we are practically moving into the Valuation territory (next week) and Financial Ratios. Note that you will almost always calculate both (in fact, you need Equity Value to calculate EV), so you really need to understand what each of them mean and how you use them!

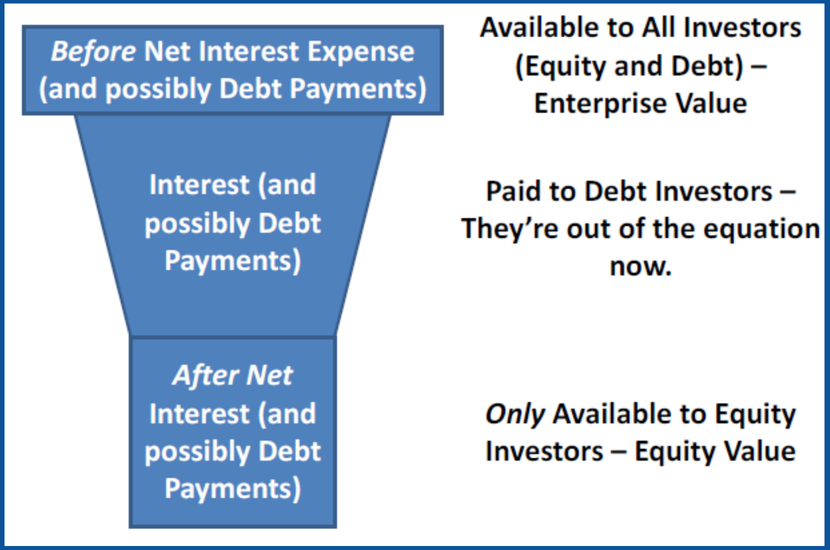
Meaning

Equity Value: "sticker price" based on the current share price
Enterprise Value: determines how much the company would actually cost to acquire

Usage

Usage depends on what's in the denominator when calculating valuation multiples and the type of Free Cash Flow we use in our valuation models

- If denominator accounts for interest income and expenses → Equity Value
- If denominator does not account for interest income and expenses → EV



Financial Statement Analysis / Ratios

Overview

Apologies for rushing through the Accounting section, but I encourage you all to sit down with some real Financial Statements and use Investopedia to go over each item line-by-line. I am positive you will get a grasp of Accounting after doing a couple valuations and I want to focus more time on what really matters – the basic tools of Financial Analysis!

Goal of Financial Analysis is to predict the future!!

Basic Financial Analysis Tools

1. Horizontal Analysis
2. Vertical Analysis
3. Financial Ratios

Horizontal and Vertical Analysis

Horizontal Analysis

The study of the percentage change from year to year is called horizontal analysis

Most common form of horizontal analysis is using Trend Percentages

- Trends indicate the direction a business is taking
- Trend percentages are computed by selecting a base year whose amounts are set equal to 100%. The amount for each following year is expressed as a percentage of the base amount

$$Trend\ \% = \frac{Any\ year\ \$}{Base\ year\ \$}$$

- Trends are a common way of projecting financial statements (used in DCF Analysis)

Vertical Analysis

Vertical analysis shows the relationship of a financial statement item to another base item and all items on the financial statement are reported as a percentage of that base.
Examples:

- Using Total Revenue as a base to project related items on the Income Statement (COGS, Expenses)
- Using Capital Expenditures as a base for Depreciation (or vice versa)

Using vertical analysis is a good way of limiting the amount of assumptions in our models

Using Financial Ratios in Decision Making

Considering the Financial Ratios from the company's Financial Statements is often a good starting point for assessing the financial health of a company and often aids our investment decisions. Financial Ratios are often classified in five categories as follows:

1. Ability to pay current liabilities
2. Ability to sell inventory and collect receivables
3. Ability to pay long-term debt
4. Profitability
5. Analysis of shares as an investment

Summary of Financial Ratios

Ratio	Computation	Information Provided
Measuring ability to pay current liabilities:		
1. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Measures ability to pay current liabilities with current assets
2. Acid-test (quick) ratio	$\frac{\text{Cash} + \text{Short-term investments} + \text{Net current receivables}}{\text{Current liabilities}}$	Shows ability to pay all current liabilities if they come due immediately
Measuring ability to sell inventory and collect receivables:		
3. Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	Indicates saleability of inventory—the number of times a company sells its average inventory level during a year
4. Accounts receivable turnover	$\frac{\text{Net credit sales}}{\text{Average net accounts receivable}}$	Measures ability to collect cash from credit customers
5. Days' sales in receivables	$\frac{\text{Average net accounts receivable}}{\text{One day's sales}}$	Shows how many days' sales remain in Accounts Receivable—how many days it takes to collect the average level of receivables
Measuring ability to pay long-term debt:		
6. Debt ratio	$\frac{\text{Total liabilities}}{\text{Total assets}}$	Indicates percentage of assets financed with debt
7. Times-interest-earned ratio	$\frac{\text{Income from operations}}{\text{Interest expense}}$	Measures the number of times operating income can cover interest expense
Measuring profitability:		
8. Return on net sales	$\frac{\text{Net income}}{\text{Net sales}}$	Shows the percentage of each sales dollar earned as net income
9. Return on total assets	$\frac{\text{Net income} + \text{Interest expense}}{\text{Average total assets}}$	Measures how profitably a company uses its assets
10. Return on common shareholders' equity	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common shareholders' equity}}$	Gauges how much income is earned with the money invested by common shareholders
11. Earnings per share of common stock	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average number of common shares outstanding}}$	Gives the amount of net income earned for each share of the company's common stock
Analyzing shares as an investment:		
12. Price/earnings ratio	$\frac{\text{Market price per share of common stock}}{\text{Earnings per share}}$	Indicates the market price of \$1 of earnings
13. Dividend yield	$\frac{\text{Dividend per share of common (or preferred) stock}}{\text{Market price per share of common (or preferred) stock}}$	Shows the percentage of a share's market price returned as dividends to shareholders each period
14. Book value per share of common stock	$\frac{\text{Total shareholders' equity} - \text{Preferred equity}}{\text{Number of common shares outstanding}}$	Indicates the recorded accounting amount for each share of common stock outstanding

This is a summary of the Financial Ratios that are useful to consider when looking at the Financial Statements to assess the financial health of a company. We will come back to revisit some more ratios during our discussion on valuation techniques next week!!

Questions?