Week 8

FINANCIAL STATEMENTS

Economic and management principles

Review of the last lecture

IN THE LAST LECTURE, WE SHOWED HOW WE CAN CREATE A BUSINESS PLAN

- We explained that the business plan can act as a medium for attracting finance for start-ups or expansion.
- We discussed the different sections of the business plan - executive summary, company and product presentation, market description, operational and financial plan, risk factors.
- We did not have too much time to explain how the financial plan should formally look like.
- In principle, it should mimic by its structure financial statements of a company, especially a balance sheet and a statement of income.

Financial Part of A Company's Description

- A manager's primary goal is to maximize the value of his or her firm's stock.
- Value is based on the firm's future cash flows.
- To estimate future cash flows, investors have to study financial statements that publicly traded firms must provide.
- Financial statements deal with concepts covered in basic accounting courses.
- Only accountants need to know how to make financial statements, but everyone involved with business needs to know how to interpret and use them.

History of Financial Reporting

- The necessity to provide financial statements risen with increasing complexity of business
- Over history, mankind passed from self-sufficiency to specialization, necessarily accompanied by trade, initially in form of barter and strictly local.
- Eventually, master craftsmen set up small factories and employed workers, money began to be used, and trade expanded beyond the local area.
- Along with these developments, a primitive form of banking began, with wealthy merchants lending profits from past dealings to enterprising factory owners who needed capital to expand.
- When the first loans were made, lenders could physically inspect borrowers assets and judge the likelihood that the loans would be repaid.

Financial Statements and Reports

- Over time, things became more complex and a way was needed to verify that borrowers actually had the assets they claimed to have.
- Some investments were made on a share-of-the-profits basis, therefore, profits had to be determined.
- At the same time, factory owners and large merchants needed reports to see how effectively their managers were operating the businesses, and governments needed information for use in assessing taxes.
- For all these reasons, a need arose for financial statements, for accountants to prepare those statements, and for auditors to verify the accuracy of the accountants’ work.
- Financial statements are published within annual report of the company.

Annual Report

- The annual report is the most important Report corporations issue to stockholders it contains two types of information:

1. a verbal section that describes the firm's operating results during the past year and then discusses new developments that will affect future operations,
2. four basic financial statements:
   - the balance sheet,
   - the income statement,
   - the statement of cash flows,
   - the statement of retained earnings. Only for corporations on the stock market

- The verbal statements attempt to explain why things turned out the way they did and what might happen in the future.

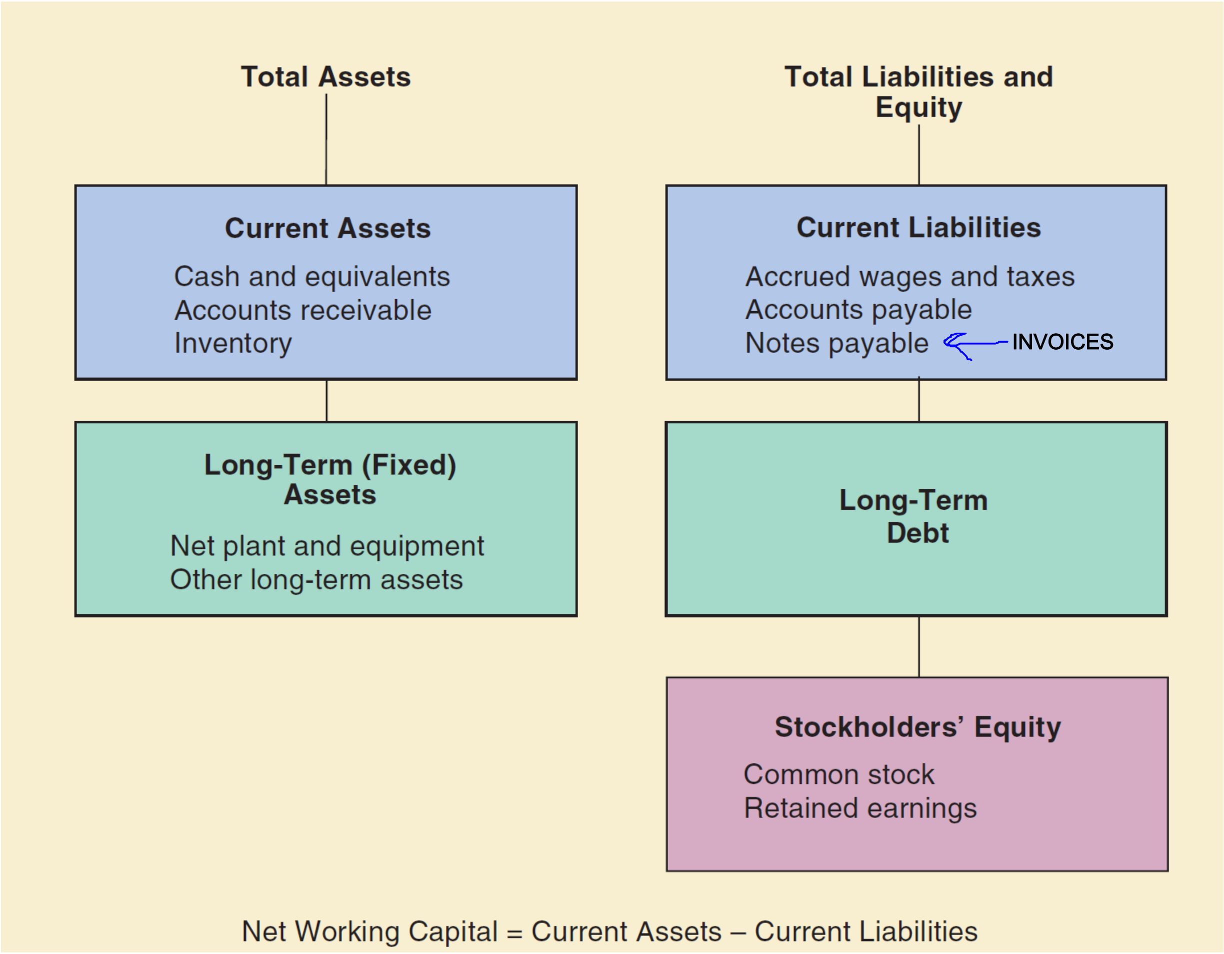
Financial Statements

- The financial statements report what has actually happened to assets, earnings, and dividends over the past few years.
- Detailed data are provided for the two or three most recent years.
- Historical summaries of key operating statistics are typically provided for the past 5 or 10 years.
- The information contained in an annual report can be used to help forecast future earnings and dividends.
- Therefore, investors are very much interested in this report.

Balance Sheet

- The balance sheet represents a snapshot of The firm’s position at a specific point in time
- The balance sheet can be schematically represented as a table with two columns.
- The left side of the statement shows the assets that the company owns.
- The right side shows the firm’s liabilities and equity, which represent claims against the assets.
- The left side has to be equal to the right side.

The Balance Sheet Structure



Current and Long-Term Assets

- Assets are divided into two major categories: Current and long term.
- Current assets include cash plus other items that should be converted to cash within one year, and they include cash and equivalents, accounts receivable, and inventory.
- Long-term assets are those whose useful lives exceed one year, and they include physical assets such as plant and equipment and intellectual property such as patents and copyrights.
- Plant and equipment is generally reported net of accumulated depreciation (a decrease in an asset's value caused by unfavorable market conditions).

Liabilities and Equity

- Liabilities are money the company owes creditors, stockholders' equity represents ownership.
- Corporate liabilities are further divided into two major categories: current liabilities and long-term debt.
- Current liabilities are obligations that are due to be paid off within a year, and they include accounts payable, accruals (accrued wages and accrued taxes), and notes payable that are due within one year.
- Long-term debt includes long-term loans and bonds that have maturities longer than a year.

Common Stock & Retained Earnings

- Equity is divided into two major accounts - Common stock and retained earnings
- The amount shown as common stock is the amount of cash that stockholders paid to the company when it originally issued stock for use in acquiring assets.
- The retained earnings account is built up over time as the firm “saves” a part of its earnings rather than paying them all out as dividends.
- We generally aggregate the two stockholders’ equity accounts and call this sum common equity, net worth or net assets.

Liquidity

- The balance sheet items are often listed in Order of their “liquidity”
- Liquidity corresponds to the length of time it takes to convert them to cash (current assets) or their expected useful lives (fixed assets).
- The claims are listed in the order in which they must be paid: accounts payable must generally be paid within 30 days, notes payable within 90 days, and so on, down to the stockholders’ equity accounts, which represent ownership and need never be “paid off”.
- A firm needs enough cash and other liquid assets to pay its bills as they come due.
- Net working capital is a frequently used measure of liquidity:

Net working capital = current assets - current liabilities

Example of Balance Sheet

	2005	2004
Assets		
Cash and equivalents	$ 10	$ 80
Accounts receivable	375	315
Inventories	615	415
Total current assets	$1,000	$ 810
Net plant and equipment	1,000	870
Total assets	$2,000	$1,680
Liabilities and Equity		
Accounts payable	$ 60	$ 30
Notes payable	110	60
Accruals	140	130
Total current liabilities	$ 310	$ 220
Long-term bonds	750	580
Total debt	$1,060	$ 800
Common stock (50,000,000 shares)	130	130
Retained earnings	810	750
Total common equity	$ 940	$ 880
Total liabilities and equity	$2,000	$1,680

Book value per share = $940/50 = $18.80

Depreciation and Taxes

- Most companies prepare two sets of financial statements - one for tax purposes and one for stockholder reporting.
- These sets of statements will differ in how depreciation is accounted for (there are several ways how this can be done).
- Businesses depreciate long-term assets because:

    1. these assets lose their value,
    2. such loss of value represents a cost and therefore is deducted from profits before taxation.

Depreciation and Taxes

- Assets in balance sheet are valued at Purchase price minus depreciation
- Generally, companies use the most accelerated depreciation method permitted under the law for tax purposes but straight line for stockholder reporting.
- Accelerated depreciation results in high depreciation charges, thus low taxable income and therefore relatively low taxes early on.
- Straight-line depreciation results in lower depreciation charges and high reported profits.

Book and Market Value

- The book value of a company is usually lower than its market value
- Companies use generally accepted accounting principles to determine the values reported on their balance sheets.
- In most cases, these accounting numbers (often referred to as book values) are different from the corresponding market values:
  - fixed assets may change value because of rising housing prices,
  - debt can change value because of changing interest rate,
  - company may introduce a very successful product and it is expected to grow.
- The company's common equity is simply the reported book value of the assets minus the book value of the liabilities, but for most companies, shareholders are willing to pay more than book value for the firm's stock.

Income Statement

- Income statement summarizes the firm’s revenues and expenses
- These revenues and expenses are summarized during an accounting period, generally a quarter or a year.
- Net sales are shown at the top of the statement, after which operating costs, interest, and taxes are subtracted to obtain the net income available to common shareholders, which is generally referred to as “net income.”
- Earnings and dividends per share are given at the bottom of the income statement.
- Earnings per share (EPS) is called the bottom line, they are generally the most important to stockholders.

Example of Income Statement

	2005	2004
Net sales	$3,000.0	$2,850.0
Operating costs except depreciation[a]	2,616.2	2,497.0
Earnings before interest, taxes, and depreciation (EBITDA)[b]	$ 383.8	$ 353.0
Depreciation	100.0	90.0
Earnings before interest and taxes (EBIT)	$ 283.8	$ 263.0
Less interest	88.0	60.0
Earnings before taxes (EBT)	$ 195.8	$ 203.0
Taxes	78.3	81.2
Net income	$ 117.5	$ 121.8
Common dividends	$ 57.5	$ 53.0
Addition to retained earnings	$ 60.0	$ 68.8
Per-share data:		
Common stock price	$ 23.00	$ 26.00
Earnings per share (EPS)[c]	$ 2.35	$ 2.44
Dividends per share (DPS)[c]	$ 1.15	$ 1.06
Book value per share (BVPS)[c]	$ 18.80	$ 17.60
Cash flow per share (CFPS)[c]	$ 4.35	$ 4.24

Different Financing Options

- Different financial structures lead to different levels of net income
- Suppose two companies have identical operations, however, one finances with debt and the other uses only common equity.
- The company with no debt (and therefore no interest expense) would report higher net income because no interest is deducted from its operating income.
- Consequently, to compare companies' operating performances, it is essential to focus on their earnings before deducting taxes and interest payments.
- This is called earnings before interest and taxes (EBIT), and it is often referred to as operating income:

EBIT = Sales revenues - Operating costs

Depreciation and Amortization

- An important component of operating costs are depreciation and amortization
- Depreciation - the charge to reflect the cost of tangible assets (physical assets such as plant and equipment) used up in the production process.
- Amortization - a charge similar to depreciation except that it is used to write off the costs of intangible assets (patents, copyrights, trademarks, and goodwill.).
- Depreciation and amortization are not a cash outlay.
- Therefore, people who are concerned with the amount of cash a company is generating often calculate EBITDA, defined as earnings before interest, taxes, depreciation, and amortization.

Net Cash Flow

- It is important to study cash flows in a Company, since they determine stock price
- As we said, management's goal should be to maximize the stock price.
- Because the value of any asset, including a share of stock, depends on the cash flows the asset is expected to produce, managers should strive to maximize the cash flows available to investors over the long run.
- A business's net cash flow differs from its accounting profit because some of the revenues and expenses listed on the income statement are not paid in cash during the year.
- Typically:

Net cash flow = Net income + Depreciation and amortization

Net Cash Flow

- Net cash flow in a company is not just used to build the cash account
- The net cash flow represents the cash a business generates in a given year.
- However, the fact that a company generates a high cash flow does not necessarily mean that the cash reported on its balance sheet is also high.
- Net cash flow is used in a variety of ways, including paying dividends, increasing inventories, financing accounts receivable, investing in fixed assets, retiring debt, and buying back common stock.

Cash Flow Statement

- Key factors that affect a company's cash balance:
  - cash flow
  - Changes in working capital
  - fixed assets
  - security transactions and dividend payments
- Each of these factors is reflected in the statement of cash flows, which summarizes the changes in a company's cash position.

Cash Flow Statement

THE CASH FLOW STATEMENT SEPARATES ACTIVITIES INTO THREE CATEGORIES

1. Operating activities, which include net income, depreciation, and changes in working capital other than cash and short-term debt
   - should show good operating cash flows
2. Investing activities, which include purchases or sales of fixed assets
   - should show spending on fixed assets that is about equal to depreciation charges plus a bit more to support growth
3. Financing activities, which include raising cash by issuing short-term debt, long-term debt, or stock, or using cash to pay dividends or to buy back outstanding stock or bonds
   - should show relatively little net borrow- ing along with a reasonable amount of dividends

- The company should have a reasonably stable cash and equivalents balance from year to year.

Example of Cash Flow Statement

	2005
I. OPERATING ACTIVITIES	
Net Income before dividends	$117.5
Additions (Sources of Cash)	
Depreciation and amortization[a]	100.0
Increase in accounts payable	30.0
Increase in accruals	10.0
Subtractions (Uses of Cash)	
Increase in accounts receivable	(60.0)
Increase in inventories	(200.0)
Net cash provided by operating activities	($ 2.5)
II. LONG-TERM INVESTING ACTIVITIES	
Cash used to acquire fixed assets[b]	($230.0)
III. FINANCING ACTIVITIES	
Increase in notes payable	$ 50.0
Increase in bonds	170.0
Payment of dividends	(57.5)
Net cash provided by financing activities	$162.5
Net decrease in cash and equivalents	($ 70.0)
Cash and equivalents at beginning of the year	80.0
IV. CASH AND EQUIVALENTS AT END OF THE YEAR	$ 10.0

Statement of Retained Earnings

- The statement of retained earnings reports what share of profit was reinvested
- This statement shows how much of the firm's earnings were retained in the business rather than paid as dividends.
- The balance sheet number reported for retained earnings is the sum of the annual retained earnings for each year of the firm's history

	2005
Balance of Retained Earnings, December 31, 2004	$750.0
Add: Net Income, 2005	117.5
Less: Dividends to common stockholders	(57.5)[a]
Balance of Retained Earnings, December 31, 2005	$810.0

Online Sources

- http://finance.yahoo.com
- http://morningstar.com
- http://www.sec.gov
- http://www.msn.com
- http://money.cnn.com
- http://www.marketwatch.com

Errors

- The translation from physical assets to “correct” numbers is far from precise
- It is not easy to translate physical assets into numbers, as accountants must do when they construct financial statements.
- The numbers shown in the assets section of a balance sheet generally represent the historical costs of the assets, less depreciation - however,
  - inventories may be spoiled, obsolete, or even missing
  - fixed assets such as machinery and buildings may have higher or lower values than their depreciated historical costs
  - accounts receivable may be uncollectible.
- Some legitimate claims may not even appear on the balance sheet.
- Some costs as reported on the income statement may be understated.

Summary

- We should understand the four basic financial statements:
  - balance sheet
  - income statement
  - cash flow statement
  - statement of retained earnings
- In the next lecture, we will discuss in detail how these statements can be analyzed.