ENG M 401
Financial Management for Engineers

Mechanical Engineering

Lecture 2B

- More about the balance sheet
- The form and components of the balance sheet
- Liquidity
- Assets
- Liabilities

UNIVERSITY OF ALBERTA

The Balance Sheet:

Mechanical Engineering

- How much do I have, and how did I pay for it?

  Assets = liabilities plus equity

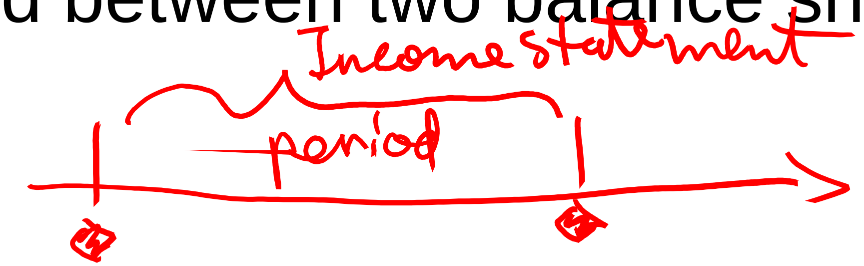
- Assets: what I have. Liabilities: what I owe.
- If the asset is useful, it is recorded at "book value": the lesser of original cost minus depreciation or market value [after being evaluated by professionals]. If market value is higher, *it is never recognized in advance of being realized*.
- If it is worn out or useless, it is written off (depreciation and writedowns).

Accounting is always conservative. In times of high inflation, book values deviate from real values.

Income Statement vs. Balance Sheet:

- Income statement is a rate function over a meaningful period of time, balance sheet is at an instant in time. What you have changes each day / hour.

- Hence, we calculate an income statement for the period between two balance sheets.



The Form of the Balance Sheet:

Assets:

Current: Cash
Receivables
Short Term Notes
Inventory
Prepaid Expenses

1 year

Fixed: Land, Bldgs, & Equip
less Accum Depreciation

Long Term Investments

Goodwill and Intangible Assets

Liabilities:

floating $

Current: Short Term Credit Line
Accounts Payable
Accrued Expenses
Taxes Payable
Curr. Port. Of L-T Debt

Long Term: Long Term Debt
Repayable Grants

Shareholder's Equity

Capital Shares
Retained Earnings

Liquidity

The Form of the Balance Sheet:

- The Assets vs. Liabilities line (vertical) separates what we own from where we got the money to own it. These two sides are always equal (hence “balance” sheet).
- The “current” vs long term line (horizontal) is critical; it separates those items that will have activity within a year from those that are longer than a year. Other time periods could have been chosen, but a year has become the standard.
- Note that as we go down the balance sheet assets become less “liquid”. The concept of liquidity: how fast can we turn it into cash. Cash is the ultimate liquid asset.

The Form of the Balance Sheet:

Mechanical Engineering

floating to keep balance

- The short term credit line is “negative cash”. This kind of debt is callable at any time and is unsecured. Almost all long term debt has a prescribed repayment schedule, is not callable (except in case of default), and is secured (discuss the concept of security and “who ranks first”, and note the issue re wages and recent legislation).

- Note that we show the original cost of fixed assets minus the depreciation. This gives a sense of how “aged” the assets are. Accounting arose in a time when intangible assets were not considered to be “real” or fixed. We know today that intangible assets can have enormous value. Examples include the Coca Cola brand (and many others) and software.

The Form of the Balance Sheet:

- Receivables: money/value you lend your customers to help them buy your product
- Payables: money you borrow from your suppliers to help you buy their product.
- Accrued expenses: usually mostly wages owing.
- Prepaid expenses: e.g. once a year payment (say insurance) which your accountant will “spread” over 12 months by drawing down this account in 12 equal installments, taking it into expense.

The Form of the Balance Sheet:

- In general, an asset can be converted into an expense (e.g. inventory) at the time we sell it and get revenue, which should create another asset, i.e. cash.

  Finished goods

- Note that for long term debt, any portion due within one year goes "above the line".

- The concept that "above the line" on a balance sheet means "current".

The Balance Sheet: General Observations

Mechanical Engineering

- One year rule for "current".
- Ascending order of liquidity.
- Always state "at cost" value of fixed assets, this gives the ability to have a sense of the "age" of the assets.
- Goodwill and intangibles can be depreciated: examples are excess payment for a business over "book", and trademarks or patents.
- Current portion of long term debt is "one year" test.
- Distinguish capital shares (cash injection) from retained earnings (cash retention).
- Balance on cash or short term credit line.

The Balance Sheet: Credit Issues

- Receivables represent value that you have, in effect, lent to your customers.
- Liabilities represent value that you have, in effect, borrowed from others.
- Creditworthiness is a key issue throughout:
  - You check the credit rating of your customers.
  - Your suppliers check your credit rating.
  - Your short term lender focuses on the quality of your current assets.
  - Your long term lender usually has the right to take over assets that "securitize" the loan.
  - Certain government charges transfer to Board members.

The Concept of Debt:

- In a western agricultural or industrial society, wealth is held primarily by individuals and not by society at large. There are exceptions, e.g. resources, but the profits from development generally flow to individuals.
- Most with wealth wish to preserve or grow wealth.
- Wealth and entrepreneurial spirit often do not align, and there are vast differences in the tolerance for risk.
- The borrower believes inherently that he/she can create more wealth than the cost of the borrowed funds.

Lenders trade lower return (growth in wealth) for lower risk (the "risk-reward relationship). Debt is the primary mechanism to reduce risk, since it ranks ahead of equity.

Equity vs. Debt

Continue Next Session.

- Equity is fundamentally different than debt; understanding this difference is key to understanding the commercial world.
- Equity is focused on growth (Dell); debt is focused on preservation of value (Nortel).
- The “mindset” is drastically different. Debt: “will I be repaid”? Equity: “how much value creation can I get?”
- The legal rights are different: debt can push a company into bankruptcy.