

11.437 Financing Economic Development  
Class 3: Introduction to Accounting and Financial Statements

**I. Accounting Principles**

A. Dual Aspect Concept:

A firm's Assets = Equities (Liabilities and Owners' Equity)

Business assets must be claimed by someone, either creditors or owners

Corollary, every financial transaction effecting a firm must involve two accounts of the firm.

If an asset account increases, and assets = equities, then for this requirement to hold, either an equity account must increase or another asset account must decrease.

B. Debits and Credits

Asset accounts are called debit accounts; equity accounts are called credit accounts. Every financial transaction entails a debit and a credit. An increase in an asset account is a debit and a decrease is a credit. An increase in an equity account is a credit and a decrease is a debit.

Income accounts are credit accounts; an increase in an income is a credit. Expense accounts are debit accounts.

Increases in income add to the value owners' equity, which is a credit account. Expenses reduce the income going to owners, thus are debits.

B. Realization Concept and Matching Concept

These concepts are used to determine when to recognize income and expenses. Income is recognized and credited to a firm's accounts when **goods are shipped or services are rendered. It is not recognized when cash is received.**

Matching concepts is the rule for how expenses are allocated: **costs are recognized as expenses in the period when the revenue associated with those costs are reported. (Not when expense is paid for.)** Alternatively, costs not directly related to producing a good or service are matched to the period in which they correspond. Examples: rent, administrative staff, other overhead.

D. Accounting records are prepared on an accrual basis not on a cash basis. General Accepted Accounting Principles required accrual-based financial records.

### Difference between accrual and cash based financial statements

Accrual is based on the idea of accurately presenting a firm's "earned income", i.e. the actual economic results of its activities, not the cash result of its activities. When we look at all the costs associated with an income generating activity over a period of time what were the financial results, independent of when the firm received payment for that activity and when it paid for the associated costs.

Distinction between revenue (accrual) vs. receipt (cash)

Distinction between expense (accrual) vs. expenditure (cash)

Example of cash vs. accrual financial statement:

Compare September Accrual and Cash Income Statement for following business.

**A mail order bookstore ships \$2,000 worth of books in September. The customers pay upon receipt of the books, which occurs in October. The inventory of books sold in September was purchased for \$1200 over the past 3 months (June to August). Overhead costs for the month include rent of \$200 and salaries of \$500.**

	<u>Cash Statement</u>	<u>Accrual Statement</u>
Revenue	0	2,000
Cost of Sales	0	(1,200)
Rent	(200)	(200)
Salaries	(500)	(500)
Net Income	(700)	100

**One implication of accrual financial statements is that you can't understand a firm's cash flow, cash utilization and cash needs by the income statement alone--you need to understand both the income statement and balance sheet.**

Three sets of financial flows effect a firm's operating cash flow:

1. Purchase and production activities convert cash into inventories
2. Sales activities convert inventories into accounts receivables
3. Collection activities convert AR into cash

Income statement covers part of 1 and 2; Balance sheet-part of 1 and 3.

II. Accounting systems generate **financial statements** about the firm's financial position and financial operating results.

Main financial statements are the Balance Sheet and Income

Statement.

Example: American Biotechnology Company

**A. Balance Sheet** - represents what is owned by a company (assets) and what is owed (liabilities and equities) --claims on those assets **at a specific point in time. It can also be seen as a sources and uses of funds statement.** A one-time status report.

### Major Asset Categories

Current Assets -- assets to be used within one year vs. Long term assets - life of over one year

1. Cash
2. Marketable Securities
3. Accounts Receivable - bills for goods and services already rendered or delivered
3. Inventory - goods owned by a company to be used in its business; its includes raw materials, good in progress and completed products

Long-term Assets:

4. Investments
5. Fixed Assets - Property, Plant & Equipment shown less depreciation
6. Intangible assets - goodwill, patents licenses, etc.
7. Other assets: e.g., pre-paid expenses

## Major Liability Categories

Current liabilities - expected to be paid off within one year

1. Accounts payable
2. Income taxes payable
3. Accrued expenses payable
4. Deferred revenue, i.e., prepayment for goods or services to be provided in the future
5. Current portion of long term debt

Other Liabilities

7. Long term debt

Owner's equity: three parts: (1) stock, shown at "par value"; (2) other paid in capital--owner's direct cash investment over par value; (3) retaining earnings or accumulated surplus or deficit

**Income Statement** - presents earnings activities between two points in time. It summarizes two parts of business earnings - revenues and expenses. It tells us the economic results of the firm's activities during a period of time. A flow report.

Income is reported for sales occurring during the period

Expenses are reported to match revenue. Expense categories:

Cost of goods sold - material and direct labor costs to produce goods or providing services. Can also be listed as Cost of sales.

Revenue less COGS = Gross Margin. This is the profit margin before administration, overhead, interest, and taxes.

Useful way to measure Gross Margin is as a percentage of sales

Gross margin % varies for product sales and R&D

Product sales gross margin =  $(5,013 - 4,967) / 5,013 = .009$

R&D gross margin =  $(7,675 - 2,007) / 7,675 = .73$

Which business would you rather be in?

From Gross Margin, the following expenses are deducted:

Research and Development Expenses

Selling, general and administrative expenses, i.e., overhead

Depreciation and Amortization -- non-cash expenses

The result after these expenses is Earnings Before interest and Taxes or Net Income before interest taxes. Sometimes this is referred to as Earnings Before Interest and Taxes (EBIT)

Interest and taxes are then deducted to show the final result, or "bottom line", net income (or earnings) after taxes

### **III. How to relate financial statement to cash flows**

Statement of cash flows included in audited statements but many companies, especially small businesses do not produced audited financial statements. Need to be able to generate your own cash flow statement.

How to generate your own cash flow statement:

First focus on cash flow from operations, before investment and financing activities.

#### **Cash Flow From Operations**

Begin with net income:

1. Add back taxes and interest (alternatively you can begin with income or earnings before taxes and interest)
2. Add back non-cash expenses (depreciation & amortization)
3. Add back sources of cash from balance sheet
  - a. increases in AP, Accrued expenses, other accrued liabilities
  - b. decreases in AR, inventory, prepaid expenses
4. Subtract uses of cash
  - a. decreases in AP, accrued expenses, etc.
  - b. increases in AR, inventory, etc.
5. Subtract taxes:  
Result is a net cash flow from operations

To get a complete cash flow, you would adjust net cash flow from operations by

(1) cash flow from investing activities, e.g., investment in plant, equipment, investments

(2) cash flow from financing activities: proceeds from borrowing and stock sales, repayment of long term debt, interest payments.