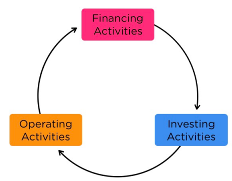
VEE Accounting

1.0 Basics - Introduction

Fundamentals, regulation and the conceptual framework of accounting provides guidance for creating standards and lays the foundation for strong **corporate governance**.

1.1 Basics - Fundamentals

Purpose of financial reporting: **identity**, **measure**, and **communicate** financial information regarding economic entities to equity investors, creditors etc.



Main activities of a company

- Financing - provide capital for operations
- Investing - property, plant, and equipment to create revenue
- Operating - generate cash for investors and finance future investing

1.2 Basics - Regulation

Accounting Standards Boards

Attributes:

- Clearly defined responsibilities
- High standards of ethics and confidentiality
- Adequate authority and resources
- Independent from external forces

FASB (Financial Accounting Standards Board) pronouncements:

1. Accounting Standards Updates amend the Codification - **establish GAAP**
2. Financial Accounting Concepts develop the Codification

IASB (International Accounting Standards Board):

- Governed by IFRS (International Financial Reporting Standards)
- Principles-based standards (vs GAAP rules-based standards)

1.2 Basics - Regulation Cont.

Regulatory Authorites

Security and Exchange Commission (SEC) - enforce FASB standards

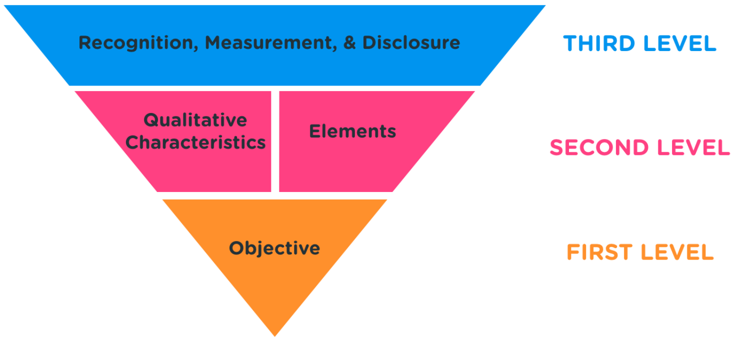
1. Securities Act of 1933
    - prohibits misrepresentation
    - requires registration of public securities
2. Securities Exchange Act of 1934
    - created SEC
    - require period reporting of public companies
3. Sarbanes-Oxley Act of 2002 (SOX)
    - created Public Company Accounting Oversight Board
    - internal controls over financial reporting

Company reports:

1. **Form 10-K** - filed annually, contains info about company's business, financial disclosures and legal proceedings
2. **Annual Report** - provided annually, not required by SEC, includes info from 10-K, operational detail and managerial strategy
3. **Proxy Statement** - gives another party right to cast shareholder vote
4. **Form 10-Q** - filed quarterly, abridged 10-K for operations in a single quarter
5. **Form 8-K** - file for major events, acquisitions and other statements

1.3 Basics - Conceptual Framework

FASB conceptual framework



1.3 Basics - Conceptual Framework Cont.

1. **First Level - why**
   Foundation of financial reporting, sets the base objective: identify, measure and communicate
2. **Second Level - why → how**
   - Elements of accounting information
     - Balance Sheet
     - Income Statement
     - Cash Flow Statement

   - Qualitative characteristics
     - *Relevance* - useful and actionable information
     - *Faithful Representation* - complete, unbiased and error free information
     - *Comparability* - comparable to other companies and previous reports
     - *Understandability* - comprehensible with reasonable business knowledge
3. **Third Level - how**
   Set guidelines for recognition, measurement and disclosure
   - Assumptions
     1. *Economic Entity Assumption*
        - company activity separate from owners and other companies
     2. *Going Concern Assumption*
        - operate indefinitely into the future
     3. *Monetary Unit Assumption*
        - metrics in currency that matches activity
     4. *Periodicity Assumption*
        - activities divisible into equal periods
   - Principles
     1. *Measurement*
        - assets & liabilities consistent with historical cost or fair value
        - regardless of payment timing
     2. *Revenue Recognition*
        - revenues recognized in same period as obligation performed
     3. *Expense Recognition*
        matching principle: timing of expense and revenues are equal
        - expense recognized with associated revenues they support
        period costs: do not directly match revenues
        - reflected in period of expenditure (e.g administrative costs)
     4. *Full Disclosure Principle*
        - disclose all information relevant to investor decisions
   - Constraints

Sustainability Reporting

- Address environmental conservation and social equality issues
- Indicates strong corporate governance (valued by investors)

2.0 Financial Statements - Introduction

1. Balance Sheet - companies current financial position
2. Income Statement - operational performance for the period
3. Statement of Cash Flows - shows cash movement over the period

2.1 Financial Statements - Balance Sheet

1. Assets - company resources used to generate economic benefits
2. Liabilities - obligations from past events
3. Equity - owner's residual interest in the company

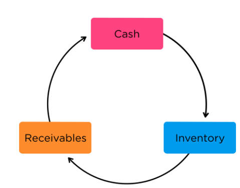
Basic accounting equation : **Assets** = **Liabilities** + **Equity**

Balance Sheet Components

Balance sheet provides information on account value at a **specific point** in time. It is *not* the market value of the firm as assets and liabilities are measured at historical cost, not current value. Provides insights into **liquidity**, capital structure of the firm and how resources are allocated.

Current and Non-Current Classifications

- Assets
  Current
  - sold or used **within a year or operating cycle, whichever is longer**
  - inventories expected to be held more than one year
  - normally used for operations
  Non-Current
  - provide **infrastructure**
- Liabilities
  Current
  - expected to be settled **within one year or one operating cycle, whichever is longer, and extinguished using current assets**
  - if held for trading e.g. short equity positions or written derivatives
  - trade payables (even if settlement is longer than a year)
  Non-Current
  - include **long-term financing**



Cash conversion cycle: time required for initial outlay to produce, sell and receive payment for goods. Most operating cycles are a few months to a year. Current assents and liabilities ordered by liquidity.

2.1 Financial Statements - Balance Sheet Cont.

Current Assets

Presented at top of balance sheet in **in order of liquidity**

1. Cash and Equivalents
   - highly liquid with minimal risk (e.g. Treasury bills, commercial paper)
2. Marketable Securities
   - securities traded in public markets (e.g. equity, debt)
3. Accounts Receivables
   - amount owed from products and services already delivered
   - source of cash for the company
4. Inventories
   - products that will eventually be sold
   - choose inventory costing method to minimize tax liability
5. Other Current Assets
   - prepaid expenses and deferred tax assets

Property, Plant, and Equipment (PP&E)

- tangible assets used in operations that last more than a period
- presented on the balance sheet in the order of most to least permanent:
  - land, buildings, and the equipment / natural resources
- under GAAP carried at amortized cost or book value of the asset:
  - historical cost less accumulated depreciation and impairment loss
- market value: actual selling price in the open market
- land carried at cost and can't be depreciated

Intangible Assets

Non-monetary, non-physical assets like patents, licenses, and trademarks

- finite useful lives
  - amortized and subject to **impairment tests**:
    test if economic value of asset has fallen dramatically
- indefinite useful lives
  - not amortized but subject to impairment tests
  - notable example **goodwill**:
    excess of purchase price (acquisition) over fair value of net assets:
    reputation, research and development, and potential synergies

Long-term Financial Liabilities

Include loans and bonds which are usually reported at **amortized cost**: present value of future payments discounted at issuance yield to maturity (bond).

2.1 Financial Statements - Balance Sheet Cont.

Components of Equity

1. Common Stock
   - represent ownership, issued shares less treasury shares, *may* have par value
2. Preferred Shares
   - higher seniority with preferred dividend, typically no voting rights
3. Treasury Shares
   - repurchased by company, no voting or dividends, negative equity balance
   - buyback if shares are undervalued or to offset dilution from stock options
4. Retained Earnings
   - cumulative earnings not paid to owners in the form of dividends
   - profit **retained** within the firm
5. Accumulated Other Comprehensive Income
   - recognize unrealized gains or losses on investments or currency translation
6. Noncontrolling Interest
   - equity interest in subsidiary companies that is held by third parties

CAPM Brewing Co. Balance Sheet, December 31 2019

CAPM Brewing Co.
Balance Sheet
December 31, 2019

ASSETS			
Current Assets			
Cash		$ 2,100	
Investments		1,600	
Accounts Receivable		40,500	
Inventory		31,000	
Prepaid Expenses		3,800	
Other Current Assets		1,500	
Total Current Assets			80,500
Property, Plant, and Equipment			
Land		214,900	
Buildings	180,000		
Less: Accumulated Depreciation	(42,000)	138,000	
Equipment	200,000		
Less: Accumulated Depreciation	(78,000)	122,000	
Total PP&E - Net			474,900
Intangible Assets			
Patents		10,500	
Goodwill		185,000	
Total Intangible Assets			195,500
Total Assets			750,900

LIABILITIES			
Current Liabilities			
Accounts Payable	$ 35,900		
Current Maturities of Long-Term Debt	5,000		
Wages Payable	2,900		
Unearned revenue	1,100		
Total Current Liabilities		44,900	
Long-Term Liabilities			
Notes Payable	20,000		
Bonds Payable	400,000		
Total Long-Term Liabilities		420,000	
Total Liabilities			464,900
STOCKHOLDERS' EQUITY			
Common Stock		110,000	
Retained Earnings		220,000	
Less: Treasury Stock		(44,000)	
Total Stockholders' Equity			286,000
Total Liabilities & Stockholders' Equity			750,900

Statement **in balance** when total assets = total liabilities + stockholder's equity

2.2 Financial Statements - Income Statement

The Income statement shows a companies financial results over a period of time (i.e. accrual based information). It breaks down revenues and expenses into different categories for analysts to to see operational performance in specific areas that create value for the firm.

2.2 Financial Statements - Income Statement Cont.

Statement structure:

- top line is **revenue**
  - amount charged for goods and services
  - net revenue adjusted for discounts and estimated returns
- next is **expenses**
  - cash outflows, depletion of assets and increases in liability
  - financial companies include interest expense as operating expense
- bottom line is **net income** (i.e. net earnings, profit or loss)
  - purpose of the income statement
  - strive to produce positive growing net income

Revenue
- Cost of Goods Sold
= Gross Profit
- Operating Expenses
= Operating Profit*
+ Interest Income
- Interest Expenses
- Income Taxes
= Net Income

*EBIT: Earnings Before Interest and Taxes

CAPM Brewing Co. Income Statement

CAPM Brewing Co. Income Statement For the Year Ended December 31, 2019			
Revenue	$ 138,700		
Cost of Goods Sold	106,500		
Gross Profit		32,200	
Operating Expenses			
Selling	5,300		
Administrative	9,200		
Other Operating Expenses	2,350		
Total Operating Expenses		16,850	
Income from Operations			15,350
Non-Operating Income and Expenses			
Interest Expense		3,200	
Other Non-Operating Expenses		2,100	
Total Non-Operating Income			5,300
Income Before Taxes			10,050
Tax Expense (30%)			3,015
Net Income			7,035

2.2 Financial Statements - Income Statement Cont.

Revenue Recognition

- Earned Revenue
  - occurs when company provides goods and services
  - if sold on credit, accounts receivable established
- Unearned Revenue
  - classified as a liability
  - occurs when company is paid in advance for services (e.g. cash advance)

2.3 Financial Statements - Cash Flow Statement

The cash flow statement provides information about **cash receipts**, **cash payments** and **cash transactions** from investing and financing activities.

Allows investors and creditors to evaluate:

1. ability to generate **future cash flows**
2. ability to pay **dividends** and **future obligations** (e.g. debt)
3. **differences of net income and net cash flow** from operating activities
4. cash/non-cash investing and financing transactions for the period

Classification of Cash Flows and Non-Cash Activities

Cash transaction categories:

1. Operating Activities
   The day-to-day activities of a company
   - sales
   - inventory purchases
   - paying employees
   - cash flows from trading securities
2. Investing Activities
   Includes purchasing and selling assets
   - Long-term
     - property
     - equipment
     - intangible assets that will generate future revenue
   - Short-term
     - equities and bonds
     - exclude cash equivalents and securities for trading
3. Financing Activities
   Obtaining and repaying capital from shareholders and creditors

2.3 Financial Statements - Cash Flow Statement Cont.

Example cash flow cycle

OPERATING CASH FLOWS	
Cash Inflows	Income Statement Items and Adjustments
From sales of goods/services	
From interest on loans and dividends on investments	
Cash Outflows	
To suppliers for inventory	
To employees for work	
To government for taxes	
To creditors for interest	

INVESTING CASH FLOWS	
Cash Inflows	Long-Term Assets
From Sale of PP&E	
From collection of principal on loans to others	
Cash Outflows	
To purchase PP&E	
To make loans to others	

FINANCING CASH FLOWS	
Cash Inflows	Long-Term Liabilities and Equity
From issuance of equity securities	
From issuance of debt	
Cash Outflows	
To stockholders as dividends	
To redeem long-term debt	
To purchase treasury stock	

Creation of Cash Flow Statement

Companies create a cash flow statement in a three step process

1. **Calculate the change in cash**
   compare cash balance between current and previous balance sheet
2. **Calculate net cash flow from operating activities**
   start with net income and back out items that do not affect cash
   - e.g. depreciation: reduces net income but no cash actually exchanged
3. **Calculate net cash flow form investing and financing activities**
   report balance sheet changes which cause a change in cash
   - cash inflow: debt issued (financing activity)
   - cash outflow: land purchased or dividends paid (investing activity)

The cash flow statement ties the income statement and balance sheet together through reconciling the beginning and ending period cash balances.

2.3 Financial Statements - Cash Flow Statement Cont.

Initech Crop. Statement of Cash Flows

Initech Corp. Statement of Cash Flows For the Year Ended December 31, 2019	
OPERATING ACTIVITIES	
Net Income	4,300
Changes in operating assets and liabilities	
Accounts Receivable	(120)
Inventory	41
Accounts Payable	25
Net cash provided by (used in) operating activities	4,246
INVESTING ACTIVITIES	
Purchase of land	(300)
Net cash provided (used in) investing activities	(300)
FINANCING ACTIVITIES	
Issuance of debt	150
Payment of dividends	(40)
Net cash provided (used in) financing activities	110
Net increase (decrease) in cash	4,056

2.4 Financial Statements - Taxation

Accounting Standards that differ on the **timing** of revenue and expenses create profit differences that will eventually be **reversed**.

- Accounting profit
  - based on accounting standards
- Taxable income
  - based on tax laws
  - basis for income tax payable and tax expense

Deferred Tax Assets
- recognized for tax reporting but not financial reporting
- **valuation allowance** likelihood of realizing deferred tax assets in the future

Deferred Tax Liabilities
- recognized for financial reporting but not tax reporting
- when accounting profit > taxable income

Tax Base
- asset/liability value for tax purposes
- deductible for tax purposes in future periods
- tax code determines depreciation and amortization

Carrying Amount
- asset/liability value according to accounting principles
- when differs from tax base creates timing difference for taxes

2.4 Financial Statements - Taxation Cont.

Current Tax Assets and Liabilities

Differences in accounting profit and taxable income arise from:

- Revenues and expenses recognized in different periods
- Items recognized for one purpose but not the other
- Carrying amount and tax base are different
- Prior tax loss can reduce current taxable income

Deferred Tax Assets and Liabilities

- taxes paid but not yet recognized on the income statement
- result of **temporary** timing differences that will self-correct

Determining the Tax Base of a Liability

+ carrying amount
- amount liability (that results in revenue which will **not** be taxed in the future)

= tax base of liability

payments received in advance are taxed immediately $\implies$ no tax base

Changes in Income Tax Rates

- deferred tax assets/liabilities ↑ if tax rates ↑ (and vice versa)
- tax rate changes affect accounting profit in that period

3.0 Financial Statement Analysis - Introduction

Financial ratios are based on company goals, strategy, industry norms, and economic conditions. Key ratios **compared to industry peers** or prior periods.

Categories of financial ratios:

- Activity
- Liquidity
- Solvency
- Profitability

3.1 Financial Statement Analysis - Activity Ratios

Activity ratios, also known as utilization ratios or operating efficiency ratios, are indicators of operational efficiency.

$$\text{Activity ratio} = \frac{\text{Income statement item}}{\text{Balance sheet item}}$$

3.1 Financial Statement Analysis - Activity Ratios Cont.

Inventory

Insufficient inventory doesn't support sales volume and limits revenue.
Too much inventory creates storage and other holding costs.

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

- number of times inventory is "turned over" or sold during the year
- reciprocal is number of years inventory sits, on average
- high ratio indicates effective inventory management

Receivables

Managing receivables indicator of effective credit collection from customers.
Poor management leads to financial distress (costly short-term financing)

$$\text{Receivables Turnover} = \frac{\text{Revenue}}{\text{Average Receivables}}$$

- high ratio indicates effective credit collection

Payables

Managing payables is important for short-term financing and expenses.
Short-term credit helps manage cash. Suppliers offer discounts for paying early.

$$\text{Payables Turnover} = \frac{\text{Purchases}}{\text{Average Trade Payable}}$$

- low ratio could indicate using credit opportunities
- lose early payment discounts if wait too long

Capital Efficiency

$$\text{Working Capital Turnover} = \frac{\text{Revenue}}{\text{Average Working Capital}}$$

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

- ratio measures how effectively revenue generated from working capital
- companies prefer lower capital requirements

$$\text{Fixed Asset Turnover} = \frac{\text{Revenue}}{\text{Average Net Fixed Assets}}$$

- low ratio could indicate inefficiency or capital-intensive business
- greater for company with older assets marked down with depreciation

3.1 Financial Statement Analysis - Activity Ratios Cont.

Capital Efficiency Cont.

$$\text{Total Asset Turnover} = \frac{\text{Revenue}}{\text{Average Total Assets}}$$

- low ratio indicates capital intensive firm
- company spends more cash than competitors to acquire operational assets

3.2 Financial Statement Analysis - Liquidity Ratios

Liquidity focuses on ability to meet short-term obligations.

$$\text{Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

- higher ratio indicates more liquidity
- value < 1 implies company cannot cover short-term liabilities

$$\text{Quick Ratio} = \frac{\text{Cash + short-term marketable investments + receivables}}{\text{Current liabilities}}$$

- more conservative ratio
- prepaid expenses and inventory cannot be converted into cash quickly

$$\text{Cash Ratio} = \frac{\text{Cash + short-term marketable investments}}{\text{Current liabilities}}$$

- appropriate ratio during crisis situation
- receivables not collected fast enough to pay maturing liabilities

3.3 Financial Statement Analysis - Solvency Ratios

Solvency relates to a companies ability to manage long-term debt.
Too much leverage can cause financial distress or lead to bankruptcy

- Operating leverage
  - use of fixed costs in business operations
- Financial leverage
  - use of fixed financing costs
  - magnify earnings to equity holders

Debt Ratios

$$\text{Debt-to-Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

- percentage of total assets financed with debt

3.3 Financial Statement Analysis - Solvency Ratios Cont.

$$\text{Debt-to-Equity Ratio} = \frac{\text{Total Debt}}{\text{Market Value of Equity}}$$

- amount of total assets supported by each unit of equity
- ratio depends on industry and cash flow generation

Interest Coverage

Companies ability to pay interest each year

$$\text{Times Interest Earned} = \frac{\text{EBIT}}{\text{Interest Expense}}$$

- value close to 1 $\implies$ firm barely able to pay interest

3.4 Financial Statement Analysis - Profitability Ratios

Return on Sales

What percentage of sales is used to pay (non)operating expenses.
Margins depend on industry and corporate strategy.

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Revenue}} = \frac{\text{Revenue} - \text{Cost of Goods Sold}}{\text{Revenue}}$$

- ratio highly affected by competition

$$\text{Operating Profit Margin} = \frac{\text{Operating Income}}{\text{Revenue}}$$

- profitability excluding extraordinary items and income taxes

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Revenue}}$$

- overall profitability of a firm
- easy to compare across companies

Return on Investment

Two common ways of comparing company performance:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$$

$$\text{ROE} = \frac{\text{Net Income}}{\text{Total Equity}}$$

3.4 Financial Statement Analysis - Profitability Ratios Cont.

Return on Investment Cont.

- ROA: Return on Assets
  - how well company generates income from invested assets
  - high ROA $\implies$ efficiently utilize economic resources
- ROE: Return on Equity
  - income generated from every dollar of equity invested

Integrated Financial Ratio Analysis

DuPont analysis: break down ROE into components that represent different aspects of company's profitability.

$$\text{ROE} = \frac{\text{Net Income}}{\text{Average Shareholder's Equity}}$$

$$= \frac{\text{Net Income}}{\text{Average Total Assets}} \times \frac{\text{Average Total Assets}}{\text{Average Shareholder's Equity}}$$

$$= \text{ROA} \times \text{Leverage}$$

$$= \frac{\text{Net Income}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Average Total Assets}} \times \frac{\text{Average Total Assets}}{\text{Average Shareholder's Equity}}$$

$$= \text{Net Profit Margin} \times \text{Total Asset Turnover} \times \text{Leverage}$$

- Net profit margin: profitability
- Total asset turnover: efficiency
- Leverage: solvency risk - management can use to increase ROE