Week 1: What is Financial Accounting?

Accounting is the Language of Business

Purpose of Financial Accounting: To provide meaningful quantitative financial information regarding an entity's activities to decision makers.

What is it not?

Who are these decision makers?
Demand for financial accounting information extends to numerous users that include:
- Shareholders (Owners)
- Debt holders (Creditors)
- Managers
- Investment analysts and information intermediaries
- Customers and strategic partners

What Makes Information Useful?
- Relevance- Capable of making a difference to a decision maker
- Faithful Representation- Dependable and reliable

Where Do Financial Accounting Rules (Standards) Come From?

Financial Accounting is not an Exact Science
- Generally Accepted Accounting Principles (GAAP) allows companies choices in preparing financial statements
- Financial statements depend on countless estimates
- Earnings Management/Manipulation

Oversight of Financial Accounting
- The Securities and Exchange Commission (SEC) oversees all publicly traded companies
- External Audits- American institute of Certified Public Accountants (AICPA)
    - Audit opinion provides reasonable assurance that the statements are free of material misstatements, not a guarantee.
- Securities Law

Accounting and Capital Allocation
- An effective process of capital allocation is critical to a healthy economy
- Better information for decision makers leads to better capital allocation
- Accounting is the primary source of information for decision makers

Required Financial Statements
- Balance Sheet
- Income Statement
- Statement of Shareholders' Equity
- Statement of Cash flows
- Statement of Comprehensive Income

Information Beyond Financial Statements
- Financial Statement Footnotes
- Independent Auditor Report
- Management Discussion and Analysis (MD&A)
- Press Releases

<u>Balance Sheet</u>
A balance sheet describes the sources and uses of funds of a firm at a point in time. Useful for:
- Evaluating capital structure
- Assessing risk and future cash flows

Assets: Economic resources that are owned or controlled by a company that have future economic benefit
- Examples of assets include: Cash, Accounts Receivables (A/R), Inventory, Land, Buildings, Equipment, Copyrights, and Investments.
- To be reported on a balance sheet, an asset must
    - Be owned (or controlled) by the company
    - Must possess expected future economic benefits

Many Assets are Reported at Historical Cost
- Historical Cost is
    - Objective
- Market Value is
    - Useful
- Relevance vs. Faithful Representation
- Only include items that can be reliably measured.
    - Many "assets" may not be reflected on a balance sheet such as a strong management team, a well-designed supply chain, or superior technology.

Liabilities: Future obligations to pay cash, transfer assets or provide services to another party
- Examples of liabilities include: Accounts Payable (A/P), Notes Payable (N/P), and Wages Payable.

Owners' Equity (Shareholders' Equity): The ownership interest in the net assets of an entity
- Examples of owners' equity include: Capital Stock, Preferred Stock, and Retained Earnings (RE)

Accounting Equation

Assets = Liabilities + Owners' Equity

Uses of funds = Sources of funds

Balance Sheet Format

- Assets are listed in order of liquidity
  - Current assets comprise assets that can be converted to cash within a year
  - Long-term assets cannot be easily converted to cash within a year.
- Liabilities are listed in order of maturity
  - Current liabilities have maturities less than one year
  - Long-term liabilities have maturities longer than one year
- Shareholders' Equity has no required order

Easy Corp.
Balance Sheet
As of December 31, 2024

Assets:	
Cash	$10
A/R	25
Inventory	15
Equipment	50
Total Assets	100
Liabilities:	
A/P	$5
Notes Payable	35
Total Liabilities	40
Owners' Equity:	
Capital Stock	$55
Retained Earnings	5
Total Equity	60
Total Equity and Liabilities	100

Retained Earnings is updated each period

Beginning Retained Earnings
Plus Net Income (Minus Loss)
<u>Minus Dividends</u>
Equals Ending Retained Earnings

Beg. RE + NI – Dividends = End. RE

Practice: With the information below prepare a balance sheet for ABC Corp. at December 31, 2024.

Cash	125	Retained Earnings	100
A/R	25	Net Income	150
Land	200	A/P	150
Building	400	Capital Stock	500
Note Payable	100	Inventory	100

Income Statement

Shows how much a company earned (not cash) over a period of time

- Helps us evaluate past performance
- Useful in predicting a firm's future performance
- Helps us assess the risk or uncertainty of achieving future cash flows

Revenues: Increase in a company's resources from the sale of goods or services

- Examples of revenues include: Sales Revenue and Rent Revenue.
- How is this different than an asset?

Expenses: Costs incurred in the normal course of business to generate revenues

- Examples of expenses include: Cost of Goods Sold (COGS), Utilities Expense, Wages Expense, and Depreciation Expense
- How is this different than a liability?
- Operating expenses are the usual and customary costs that a company incurs to support its main business activities
- Nonoperating expenses relate to the company's financing and investing activities

Gains/Losses: Money made or lost outside of normal firm operations

- Examples of gains/losses include: Gain on sale of operating equipment and Losses on sale of land

Net Income or Loss: An overall measure of the performance of a company

- Most agree that this is the most important accounting number.
- Net Income does not necessarily correspond to a net cash flow. A firm could have "good income" but "poor cash flow" or vice versa (i.e., there are two dimensions to consider).

Easy Corp.
Income Statement
For the year ended December 31, 2024

Sales Revenue	$700
Cost of Goods Sold	400
Gross Profit	300
Administrative Expense	75
Utilities Expense	50
Rent Expense	100
Operating Income	75
Loss on Sale of Land	10
Income Before Taxes	65
Income Tax Expense	15
Net Income	50
EPS $0.15	

Practice: Create an Income Statement for ABC Corp. for 2024 with the information below:

COGS	900	Loss on Sale	10
Sales Revenue	2200	Utilities Expense	100
Income Tax Expense	50	Depreciation Expense	225
Other Expenses	100	Bad Debt Expense	50
Interest Expense	320	Wage Expense	400

(ABC Corp has 1,000 shares of stock outstanding)

Practice
What type of account is…? (Asset, Liability, Owners' Equity, Revenue, Expense, Gain/Loss)

What statement does it go on? (Balance Sheet, Income Statement)

	Type	Financial Statement
1. Sales Revenue		
2. Accounts Receivable		
3. Cash		
4. Accounts Payable		
5. Cost of Goods Sold		
6. Loss on Sale of Land		
7. Capital Stock		
8. Rent Revenue		
9. Inventory		
10. Retained Earnings		
11. Bond Payable		
12. Rent Expense		

Statement of Shareholders' Equity

- The statement of equity is a reconciliation of the beginning and ending balances of shareholders' equity accounts.
- Main equity categories are:
    - Capital Stock
    - Retained Earnings
    - Treasury Stock
    - Other Comprehensive Income

Easy Corp.
Statement of Stockholders' Equity
For the year ended December 31, 2024

	Capital Stock	Retained Earnings	Total
Balance at 1/1/24	900	125	1,025
Additions	100	50	150
	1,000	175	1,175
Reductions	0	(75)	(75)
Balance at 12/31/24	1,000	100	1,100

<u>Statement of Cash Flows</u>
The financial statement that describes an entity's cash inflows and cash outflows during a period.

- Designed to show information about the change in the cash balance from first balance sheet to second balance sheet.
- Only required since 1983
- Cash is defined as "Cash and cash equivalents." Includes bank account balances, cash, coin, and short-term liquid investments

Three Sections:

- Operating Activities: Cash transactions that enter into the determination of net income
  - Two methods- direct/ indirect
- Investing Activities: Cash transactions involved in the purchase and sale of PPE, other long-term assets and making/collecting loans (an investment to our firm)
- Financing Activities: Cash transactions whereby resources are obtained or repaid to owners and creditors

Easy Corp
Statement of Cash Flows
For the Year ended December 31, 2024

Operating Section (indirect method):	
Net Income	$100
Change in A/R	20
Change in Inventory	(17)
Change in Interest Receivable	3
Change in A/P	9
Add Depreciation	34
Subtract Gain	<u>(12)</u>
Cash from Operations	137
Investing Section:	
Cash paid for PPE	(190)
Cash received from sale of PPE	<u>50</u>
Cash from Investing	(140)
Financing Section:	
Issued Stock	120
Retired debt	(80)
Paid Dividends	<u>(20)</u>
Cash from Financing	20
Change in Cash	17
Beginning Cash	<u>80</u>
Ending Cash	97

Easy Corp
Statement of Cash Flows
For the Year ended December 31, 2024

Operating Section (direct method):	
Collections from Customers	620
Receipt of Interest	68
Payment for Inventory	(345)
Payment for other expenses	(206)
Cash from Operations	137
Investing Section:	
Cash paid for PPE	(190)
Cash received from sale of PPE	50
Cash from Investing	(140)
Financing Section:	
Issued Stock	120
Retired debt	(80)
Paid Dividends	(20)
Cash from Financing	20
Change in Cash	17
Beginning Cash	80
Ending Cash	97

Relationships Among the Financial Statements

- Financial statements are linked within and across time – they articulate.
- Balance sheet and income statement are linked via retained earnings.
- Balance sheet and statement of cash flow are linked by changes in cash
- The operating section of the statement of cash flows is a cash-basis income statement

Conference Call Material- Have the following notes with you during our live meeting:

Where do we get financial statement information?

Accounting Cycle: The procedure for analyzing, recording, summarizing, and reporting transactions of a business.

- Step 1: Analyze transactions
- Step 2: Record effects of transactions
- Step 3: Summarize effects of transactions by account
- Step 4: Prepare Reports

Transactions: An event that causes a change in balance sheet values

Account: An accounting record in which the results of transactions are accumulated

Double Entry Accounting: A method of accounting that includes Debits and Credits

- Debit = left
- Credit = right
- Account determines whether a debit is an increase or a decrease (AED)
- Always at least one debit and one credit per transactions
- Debits = Credits

Journal Entries: a recording of a transaction or other entry

General Format:

Account #1	xxx	
Account #2		xxx

T-Accounts: A place to accumulate the effect of journal entries on each account.

Accrual Accounting: A system of accounting in which revenues and expenses are recorded as they are earned and incurred, not necessarily when cash changes hands

- Accounting splits business into time-periods
- Make NI a better measure of a firm's profitability

Revenue Recognition: Companies recognize revenue when goods or services are transferred to customers for the amount the company expects to be entitled to receive in exchange for those goods or services.

Practice: When can Revenue be recognized?

- Received cash in advance for IT services to be performed in the future
- Sold inventory on account to a good customer
- Completed building a bridge and have only been paid 50% so far
- Received rent money September 1st for September's rent
- Sold inventory on account to bad credit risk customer
- Government contract to redo city's road 1 year into 6 year project
- Costco received annual membership fees

Matching Principle: All costs and expenses incurred in generating revenues must be recognized in the same period as the revenue. If you can't match with revenue, then recognize it immediately.

Practice: Should we record an expense this period?

- Prepaid yearly insurance bill (July-June)
- Used electricity in December to be paid in January
- Paid for research and development
- Workers not yet paid for work the last week of December
- Ford pays for warranty work on car sold 2 years ago

Week 2: Classification and Measurement

Revenue Recognition

Companies recognize revenue when goods or services are transferred to customers for the amount the company expects to be entitled to receive in exchange for those goods or services.

- Recognize revenue when the "performance obligation is satisfied"

Five steps are used to apply the principle:

1. Identify the contract with a customer.
   - A contract establishes the legal rights and obligation of the seller and the customer
2. Identify the performance obligation(s) in the contract.
   - Contracts can indicate that the seller has one or more performance obligations.
3. Determine the transaction price.
   - The transaction price is the amount the seller is entitled to receive from the customer.
4. Allocate the transaction price to each performance obligation.
   - If there are multiple performance obligations, the contract price must be allocated among them.
5. Recognize revenue when (or as) each performance obligation is satisfied.
   - Recognize revenue for each performance obligation at a point in time or over time, depending on how that performance obligation is satisfied.

Example: Tomato Inc. sells the FertPhone, a smartphone and competitor to Apple's IPhone. When Tomato sells a phone to a customer it includes the Awesome Operating System (AOS) and a variety of applications. On October 1, 2024 Tomato sells 1,000 FertPhones to consumers for $800 each. These FertPhones have no service contract. Tomato estimates that 60% of the sales price is attributable to the phones hardware and that the software will be used for two years on average. How much revenue will Tomato recognize each year?

Cash and Cash Equivalents

- Cash – includes money or currency the firm has on hand or in checking accounts, and items acceptable for deposit in these accounts, such as checks and money orders.
- Cash equivalents – include items such as money market funds, short-term certificates of deposit, and treasury bills. Companies typically classify investments with maturity dates of three months or less when purchased as cash equivalents.
- Restricted cash – cash that is restricted and not available for current use usually is reported as investments or other assets.

Accounts Receivable (A/R)

- Funds owed to our firm from the sale of goods or services
- When companies sell to other companies, they offer credit terms, which are called sales on credit (or credit sales or sales on account).
- Initial valuation of A/R is at the amount of the credit sale
- Subsequent valuation of A/R is at the amount expected to be received, called the net realizable value.

Two things must be estimated to determine the net realizable value:

(1) The amount that will not be collected because some customers are unable to pay – called uncollectibles
(2) The amount that will not be collected because of sales returns

Uncollectible A/R

- Bad Debts: Customers who don't pay the amount they owe

Allowance for Uncollectible Accounts (also called the Provision Method):

- Estimate future bad debts and match that expense against the related revenues in the same period as the revenues are recognized.
- Write-off accounts receivable when it becomes uncollectible.
- The amount of expected uncollectible accounts is usually computed based on an aging analysis or a simple percentage
- Matches expenses to the same period as revenues

Example: The Raintree Cosmetic Company sells its products to customers on a credit basis. The 2022 balance sheet disclosed the following:

Current Assets:	
Receivables, net of allowance for bad debt of $30	$432

During 2023, credit sales were $1,750, cash collections from customers $1,830, and $35 in accounts receivable were written off. The allowance for uncollectible accounts is estimated to be 10% of the year-end balance in A/R. How much allowance for uncollectible accounts will Raintree recognize at the end of 2023? How much bad debt expense will they recognize?

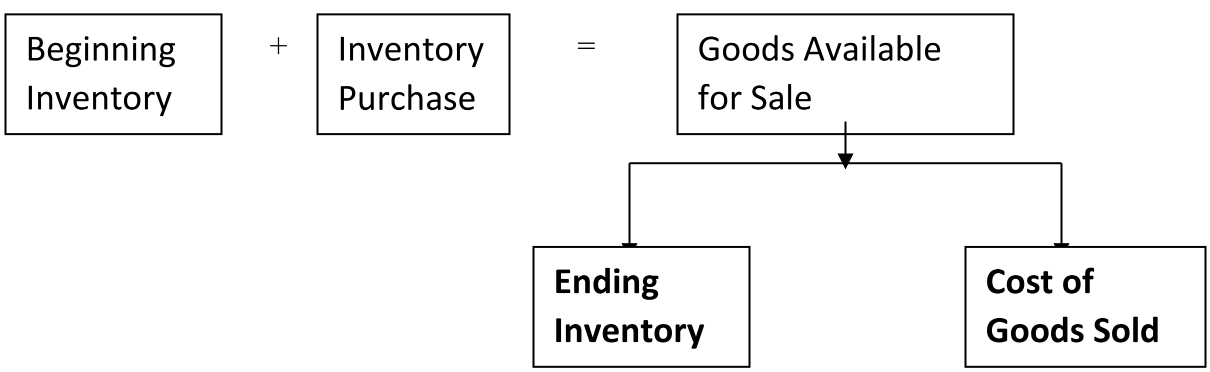
Inventory
Inventories are assets consisting of goods owned by the business and held for resale or for future use in the manufacturing of goods for sale.

What costs should be included in inventory?
Inventory should include costs of the goods plus all costs required to obtain physical possession and to put the merchandise in saleable condition.

Two types of inventory
- Merchandising Inventories: physical form of the goods is not altered prior to the sale.
  Cost = purchase price + [taxes, duties, freight, storage, insurance during transit, etc] – [discounts & allowances, purchase returns, purchase discounts]
- Manufacturing Inventories: physical form of the goods is altered prior to the sale. Typically includes three categories:
  (1) Raw Material Inventory
  (2) Work-in-Process Inventory
  (3) Finished Good Inventory
  Cost = raw materials + direct labor cost + indirect factory costs (e.g., electricity, depreciation of equipment & building, supervisory salaries, supplies, etc.)

Inventory Cost Flow Assumptions
Firms purchase or manufacture products at different times and different costs
- Which units were sold and which units are still in inventory?
- How should dollar amounts be assigned?

The choice of method for making the allocation between Ending Inventory and COGS is <u>the</u> major issue in inventory accounting.



Inventory Costing Methods

- Specific Identification
- First-In, First-Out (FIFO). This method assumes that the first units purchased are the first units sold.
- Last-In, First-Out (LIFO). The LIFO inventory costing method assumes that the last units purchased are the first to be sold.
- Average cost. The average cost method assumes that the units are sold without regard to the order in which they are purchased. Instead, it computes COGS and ending inventories as a simple weighted average.

Example: Kingfisher Inc. started the period with 3,000 units of inventory valued at $6,000. During the year they made the following purchases (in order):

	Units	Price per Unit
Purchase 1	6,000	$3
Purchase 2	4,000	4
Purchase 3	5,000	5

Kingfisher sold 8,000 units of inventory during the year. Calculate Cost of Goods Sold and Ending Inventory under the assumption that the firm uses FIFO. Repeat the process for LIFO.

Investments

This category of assets includes our investments in other entities' debt securities and equity securities. Depending on the specifics of the situation the method for accounting for these investments can be wildly different.

- Consolidation- Equity with "control"
- Equity Method- Equity with "significant influence"
- Fair-Value Method- Equity without "significant influence"
- Held-to-Maturity- Debt with intention of holding to maturity
- Trading- Debt with intention of holding for a short period to get a gain
- Available-for-Sale- Debt without the previous intentions

Property Plant and Equipment (PPE)

- Actively used in operations
- Long-term periods of service utility
- Have physical substance
- These assets often makeup the largest asset amounts
- PPE include natural resources (e.g., timber track, coal mine, oil, and gas wells)

Report PPE on Balance Sheet

- Reported at Historical Cost less Accumulated Depreciation (known as the book value or carrying value)
- If impairment of value, write down to reflect lower fair market value (writing up assets is typically not allowed under GAAP)

Which expenditures should we include in "Historical Cost"

- All costs necessary to (1) acquire the asset and (2) make it ready for use.
- Historical Cost would include: purchase price, and other related costs such as sales tax, transportation costs, installation, testing, legal fees to establish title, recording fees, and any other costs to get the asset ready for use.
- Costs included in the asset account are called "capitalized costs"

Capitalization versus Expense
Key issue is whether resources spent on long-lived assets are capitalized (placed on the balance sheet) or expensed (immediately reducing net income)

- Expenditures which have been capitalized are depreciated over the useful life of the asset
- Total effect on net income is the same over the life of the firm – the only difference is the timing of reductions to net income

Example: On January 1, 2022, Brian Company purchased land as a factory site for $50,000 cash. Construction began on a building that was completed on Dec. 30, 2022. Costs incurred during this period are listed below:

Architect's fees for the building	$ 20,000
Cost of clearing the land	3,000
Legal fees for title investigation of land	4,000
Property taxes on land for 2023	5,000
Construction costs of the building	300,000
Interest on construction loan	3,500

Determine the amounts that are capitalized as the cost of the land and the new building.

Depreciation- The Financial Accounting Standards Board (FASB) defines depreciation as “a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimate life of the unit (which may be a group of assets), in a systematic and rational manner. It is a process of allocation, not of valuation.”

Depreciation requires the following estimates:
- Useful life – period of time over which the asset is expected to generate cash inflows
- Salvage value – Expected disposal amount for the asset at the end of its useful life
- Depreciation rate – an estimate of how the asset will be used up over its useful life.

Depreciation Methods
- Straight-line method: Under the straight-line method, depreciation expense is recognized evenly over the estimated useful life of the asset.
- Accelerated Methods (Double-declining-balance)
- Activity-based methods (Units-of-Production)

Impairment of Value:
- PPE should be written down if there has been a significant and permanent impairment of value.
- For most long-term assets an impairment test is done whenever there is a triggering event.
- Triggering event – certain events or changes in circumstances that raise the possibility that certain long-lived assets may be impaired

Intangible Assets
- Have no physical substance
- Not financial instruments
- Convey certain legal and economic rights
- Uncertainty associated with future economic benefits

Classification:
- Identifiable: patents, copyrights, trademarks, franchises, licenses
- Unidentifiable: goodwill (goodwill recognized only with purchase of another business)

How intangibles are acquired:
- Acquired externally: can capitalize purchase cost and other related costs
- Developed internally: only direct costs (like legal fees) are capitalized- all other related costs are expensed as incurred

Overall accounting for intangibles is very conservative. Huge problem for many companies whose primary assets are intangibles.

Current Liabilities

Probable future sacrifices of economic benefits arising from present obligations to other entities resulting from past transactions or events.

- Obligations payable within one year or one operating cycle, whichever is longer.
- Expected to be satisfied with current assets or by the creation of other current liabilities.
- Examples: Accounts payable, Cash dividends payable, Accrued expenses, Unearned revenues, Taxes payable, Short-term notes payable
- Current liabilities are considered more risky than noncurrent liabilities
- Usually reported at their maturity amounts

Long-Term Debt

- Obligations that extend beyond one year or the operating cycle, whichever is longer
- Examples: Bonds payable, Notes payable, Mortgages payable, Pensions, Leases
- Signifies creditors' interest in a company's assets
- Requires the future payment of cash in specified (or estimated) amounts, at specified (or projected) dates.
- Mirror image of an asset
- As time passes, interest accrues on debt
- Periodic interest is the effective interest rate (market rate) times the amount of the debt outstanding during the interest period.
- Debt is reported at the present value of its related cash flows (principal and/or interest payments), discounted at the effective rate of interest at issuance.

Bonds

- A bond issue divides a large liability into many smaller liabilities
- Bonds are the most common type of corporate debt
- Bonds require the payment of the stated amount at maturity and interest at a stated rate
- Maturity of bonds range from 10-40 years
- Stated amount (principal, par value, face amount, maturity value)- the amount used to determine cash interest payments and the amount paid back at maturity
- Stated rate (coupon rate, nominal rate)- the interest rate used to determine cash interest payments
- Market rate (effective rate) – the going interest rate of similarly risky debt

Effective Interest Method

- Interest accrues on an outstanding debt at a constant percentage of the debt each period. Interest each period is recorded as the effective market rate of interest multiplied by the outstanding balance of the debt (during the interest period).
- Interest is recorded as expense to the issuer and revenue to the investor.

Example 1: On January 1, 2024, Lauren Industries issued $1,000,000 of 10% bonds. The market rate is also 10%. Interest is payable semiannually on June 30 and December 31. The bonds mature in three years. The entire bond issue was sold in a private placement to Abigail Corporation for $1,000,000. Complete the following table:

Date	Cash Payment	Interest Expense	Balance
1/1/24			
6/30/24			
12/31/24			
6/30/25			
12/31/25			
6/30/26			
12/31/26			

Example 2: On January 1, 2024, Lauren Industries issued $1,000,000 of 0% bonds. The market rate is 10%. The bonds mature in three years. The entire bond issue was sold in a private placement to Abigail Corporation for $746,215. Complete the following table:

Date	Cash Payment	Interest Expense	Balance
1/1/24			
6/30/24			
12/31/24			
6/30/25			
12/31/25			
6/30/26			
12/31/26			

Shareholders' Equity

Types of Business Structure
- Sole Proprietorship
- Partnership
- Corporation

Common Stock
- Share proportionately in profits or losses
- Owners of the company (voting rights)
- Residual interest
- Preemptive rights
- Common values
  - Par Value: Somewhat arbitrary amount used to determine legal capital, stated in the charter. When stock is issued for more than par value, the excess is reported in the account, Paid-in Capital in Excess of Par
  - Authorized: Maximum number of shares that can be issued
  - Issued: Number of shares distributed to stockholders (not retired)
  - Outstanding: Number of shares currently held by stockholders outside the corporation.

Preferred Stock
- Some rights of ownership
- Preference over common stock (but not debt) in dividends and/or liquidation

Treasury Stock
- Represents the reacquisition of the firm's shares from shareholders
- A "contra" equity account

Retained Earnings
- Accumulation of Earnings Minus Dividends
- Dividends
  - Cash- only one that affects RE
  - Stock
  - Stock Splits

Week 3: Financial Statement Analysis

Using Financial Statement Information: Financial analysts use various techniques when examining financial reports.

Ratio analysis: relationship among various account balances

- Removes the "size" effect to allow comparisons of firms of difference sizes or firms over time
- Allows one to investigate the relationships between financial figures- often there is more information in the relationship between figures than in an individual figure

GAAP Limitations of Ratio analysis

- Non-capitalized costs. Related to the concept of measurability is the expensing of costs relating to "assets" that cannot be identified with enough precision to warrant capitalization. Examples are brand equity costs from advertising and other promotional activities, and research and development costs relating to future products.
- Historical costs. Assets and liabilities are usually recorded at original acquisition or issuance costs. Subsequent increases in value are not recorded until realized, and declines in value are only recognized if deemed permanent.

Profitability Ratios: How much earnings does the company generate from operations?

Return on Assets (ROA): Measures the return generated by a company's assets.

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Average Total Assets}} \qquad \text{ROA} = \frac{\text{NI}}{\text{Ave Assets}}$$

Profit Margin (PM): Measures how much profit the company earns from each sales dollar.

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Sales Revenue}} \qquad \text{PM} = \frac{\text{NI}}{\text{Sales}}$$

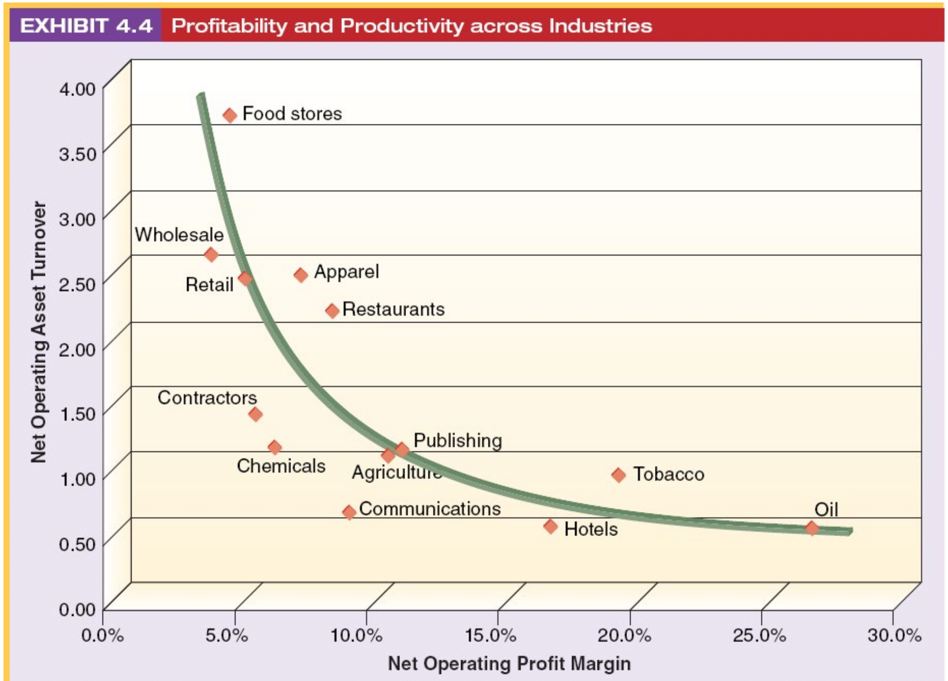
Asset Turnover (AT): Measures the productivity of the company's assets.

$$\text{Asset Turnover} = \frac{\text{Sales Revenue}}{\text{Average Total Assets}} \qquad \text{AT} = \frac{\text{Sales}}{\text{Ave Assets}}$$

$$\text{ROA} = \frac{\text{Net Income}}{\text{Average Total Assets}} = \frac{\text{Net Income}}{\text{Sales Revenue}} * \frac{\text{Sales Revenue}}{\text{Average Total Assets}}$$

Return on Assets = Profit Margin * Assets Turnover

Profit Margin vs. Asset Turnover



Return on Equity (ROE): Measures the profit generated from the resources that owners provide.

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Average Shareholders' Equity}} \qquad \text{ROE} = \frac{\text{NI}}{\text{Ave SE}}$$

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

$$\text{ROE} = \frac{\text{Net Income}}{\text{Sales Revenue}} * \frac{\text{Sales Revenue}}{\text{Average Total Assets}} * \frac{\text{Average Total Assets}}{\text{Average Equity}}$$

Return on Equity = Profit Margin * Assets Turnover * Equity Multiplier

Liquidity Ratios: What is the ability of the company to meet its short-term obligations?

- Liquidity refers to cash: how much we have, how much is expected, and how much can be raised on short notice.
- Current assets are those assets that a company expects to convert into cash within the next year.
- Current liabilities are those liabilities that come due within the next year.
- An excess of current assets over current liabilities (Current assets - Current liabilities), is known as net working capital or simply working capital.

Working Capital = Current Assets - Current Liabilities

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Quick ratio} = \frac{\text{Cash + Marketable Securities + A/R}}{\text{Current Liabilities}}$$

Solvency/Leverage Ratios: What is the ability of the company to pay its long-term obligations?

- Solvency refers to a company's ability to meet its debt obligations.
- Leverage describes how a company is financed.

$$\text{Debt-to-Equity} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity}}$$

Receivables Turnover Rate and Days Sales in Receivables: How efficient is the company in managing its receivables?

- The accounts receivable turnover rate reveals how many times receivables have turned (been collected) during the period.
- The average collection period reveals how many days on average it takes the company to collect their A/R.

$$\text{Receivables Turnover} = \frac{\text{Sales Revenue}}{\text{Average Accounts Receivable}}$$

$$\text{Average Collection Period} = \frac{365}{\text{Receivables Turnover}}$$

Inventory turnover: How efficient is the company in managing their inventory?

- The inventory turnover ratio reveals how many times inventory turned (was sold) during the period.
- The average days in inventory held reveals how many days on average it takes the company to sell inventory.

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

$$\text{Average Days Inventory Held} = \frac{365}{\text{Inventory Turnover}}$$

Payables Ratios: How long is the company waiting to pay their payables?

- The payables turnover ratio reveals how many times payables turned (were paid) during the period.
- The average days payable reveals how many days on average the firm waited to pay their receivables.

$$\text{Payables Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Accounts Payable}}$$

$$\text{Average Days Payables} = \frac{365}{\text{Payables Turnover}}$$

Days in Financing: What are the financing costs of the firm's operations?

Days in Financing = Days in Inventory + Days in A/R – Days in Payables

Common-size Statements and Trend Statements

Common-size financial statements (Vertical analysis): express each item as a percentage of a total amount (typically, total assets for balance sheet items and sales for income statement items) within the same year.

Trend statements (Horizontal analysis): express each item as a percentage of the same item in another year (base year).

MICRO CORPORATION			
Income Statements			
(In millions, except earnings per share)			
Year Ended June 30,	**2018**	**2017**	**2016**
Revenue	60,420	51,122	44,282
Operating expenses:			
Cost of revenue	11,598	10,693	7,650
Research and development	8,164	7,121	6,584
Sales and marketing	13,039	11,455	9,818
General and administrative	5,127	3,329	3,758
Total operating expenses	37,928	32,598	27,810
Operating income	22,492	18,524	16,472
Investment income and other	1,322	1,577	1,790
Income before income taxes	23,814	20,101	18,262
Provision for income taxes	6,133	6,036	5,663
Net income	17,681	14,065	12,599
Earnings per share:			
Basic	1.9	1.44	1.21
Diluted	1.87	1.42	1.2
Weighted average shares outstanding:			
Basic	9,328	9,742	10,438
Diluted	9,470	9,886	10,531
Cash dividends declared per common share	0.44	0.4	0.35

Common Size Income Statement

MICRO CORPORATION			
Income Statements			
Common Size			
Year Ended June 30,	**2018**	**2017**	**2016**
Revenue	100%	100%	100%
Operating expenses:			
Cost of revenue	19%	21%	17%
Research and development	14%	14%	15%
Sales and marketing	22%	22%	22%
General and administrative	8%	7%	8%
Total operating expenses	63%	64%	63%
Operating income	37%	36%	37%
Investment income and other	2%	3%	4%
Income before income taxes	39%	39%	41%
Provision for income taxes	10%	12%	13%
Net income	29%	28%	28%

Trend Income Statement:

MICRO CORPORATION		
Income Statements		
(In millions, except earnings per share)		
Year Ended June 30,	**2018**	**2017**
Revenue	118%	115%
Operating expenses:		
Cost of revenue	108%	140%
Research and development	115%	108%
Sales and marketing	114%	117%
General and administrative	154%	89%
Total operating expenses	116%	117%
Operating income	121%	112%
Investment income and other	84%	88%
Income before income taxes	118%	110%
Provision for income taxes	102%	107%
Net income	126%	112%

Practice: Ratio Analysis

Required: Use ratio analysis to identify similarities and differences in the efficiency, liquidity, solvency, and profitability of the two companies.

	Wal Mart	**Costco**
Return on Assets		
Profit Margin		
Asset Turnover		
Return on Equity		
Equity Multiplier		
Current Ratio		
Debt to Equity Ratio		
Average Collection Period		
Average Days in Inventory		
Average Days Payables		
Days in Financing		