



Accounting Information and its Application

- Accounting Principles

2022. 5.

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Agenda

- Recap the previous class
- Financial Ratio
- Stock Price and Netincome
- Auditor's Report

Recap the previous class (Equity)

- Equities are **increased** with following events:

1) Establishing a company

2021.1.2. (example)

Cash	\$10,000	Capital Stock	\$10,000
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2) Making a positive profit (net-income)

2021.12.31. (example)

Revenue	\$10,000	Cost of Goods	\$6,800
Interest Income	\$200	Salary Expense	\$2,000
		Retained Earning	\$1,400

Recap the previous class (Equity)

- Equities are **decreased** with following events:

1) Providing dividends

2022.2.20. (example)

Retained Earning

\$500

Cash

\$500

2) Reporting a loss (net-income)

2021.12.31. (example)

Revenue

\$10,000

Cost of Goods

\$9,800

Interest Income

\$200

Salary Expense

\$2,000

Retained Earning

\$1,600

Recap the previous class (Equity)

- At the end of 2021, the total equities were \$12,000. The total number of shares was 10,000.
- John thought that the future of this company would be very bright. He was eager to be the shareholder of this company.
 - The company offered to invest \$1,500 for 1,000 shares. John agreed with it.
- The company issued additional 1,000 shares and received \$1,500 from John on 2022.1.3.

2022.1.3.

Cash	\$1,500	Capital Stock	\$1,000
		Capital in excess of par value of stock	\$500

- * “Capital in excess of par value of stock” is an equity type account.
- “Paid-in capital in excess of par” means the same account.

Recap the previous class

(Cash Flow- Direct method)

ST Gas		
Statement of Cash Flow		
Period from January 2021 to December 2021		
Operating Activities		
Gas sales	9,000	
Gas purchase	(6,000)	
Interest expense	(300)	
Salary expense	(2,050)	
Electricity Expense	(400)	
Net cash change		250
Investing Activities		
Machine purchase	(5,000)	
Disposal machine	1,000	
Net cash change		(4,000)
Financing activities		
Borrowing from banks	10,000	
Cash Dividends	(600)	
Net cash change		9,400
Net cash change		5,650
Cash beginning of the year		10,000
Cash end of the year		15,650

Recap the previous class

(Cash Flow-indirect method)

ST Gas Income Statement	
Revenue	14,000
Cost of goods	(8,000)
Salary Expense	(2,050)
Electricity Expense	(500)
Interest Expense	(300)
Gain on PPE disposal	200
Net-Income	3,350

ST Gas Statement of Cash Flow Period from January 2021 to December 2021		
Operating Activities		
Net Income	3,350	
Account Receivables increase (assets increase)	(5,000)	
Inventory decrease (assets decrease)	2,000	
Electricity payable (liability increase)	100	
Gains of investing activities	(200)	
Net cash change		250
Investing Activities		
Machine purchase	(5,000)	
Disposal machine	1,000	
Net cash change		(4,000)
Financing activities		
Borrowing from banks	10,000	
Cash Dividends	(600)	
Net cash change		9,400
Net cash change		5,650
Cash beginning of the year		10,000
Cash end of the year		15,650

→ Compare this with Example #1.

Recap the previous class

(Two Types of Statement of Cash Flow)

- Direct Method and Indirect Method
- Direct Method
 - List all the activities and their cash flow changes.
- Indirect Method
 - Start from the net-income
 - Modifying gain and loss of investing and financial activities
 - Modifying operating assets changes
 - Modifying operating liabilities changes

Any Questions?

Financial Ratio

- Financial ratios are calculated by using two or more than two accounts.
- We can use financial ratios when we evaluate companies or compare companies each other.
- The followings are the example of financial ratios:
 - 1) Profit Margin Ratio
 - 2) Return on Assets
 - 3) Debt Ratio
 - 4) And many more

Financial Ratio - Profitability

- Which company is a better one?

Company AAA Income Statement	
Sales Revenue	50,000
Cost of Goods	38,000
GROSS PROFIT	12,000
Expenses	8,000
NET OPERATING INCOME	4,000
Other income (disposal lands, etc.)	500
Tax	900
NET INCOME	3,600

Company ABC Income Statement	
Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Expenses	7,000
NET OPERATING INCOME	8,000
Other income (disposal lands, etc.)	1,000
Tax	1,800
NET INCOME	7,200

Company XYZ Income Statement	
Sales Revenue	50,000
Cost of Goods	45,000
GROSS PROFIT	5,000
Expenses	7,000
NET OPERATING INCOME	(2,000)
Other income (disposal lands, etc.)	11,000
Tax	1,800
NET INCOME	7,200

✓ Profit Margin = $\frac{\text{Net Income}}{\text{Sales}}$

✓ Gross Margin (Ratio) = $\frac{\text{Gross Profit}}{\text{Sales}}$

Financial Ratio – Assets turn over

- Which company is a better one?

Company ABC Statement of Financial Position Dec 31st, 2021			
Cash	2,000	Bank loan from KB	100,000
Inventory A	30,000	Bank loan from Shinhan	50,000
Accounts Receivable	50,000	Total liability	150,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	252,000	Total Liability and Equity	252,000

Company ABC Income Statement For the year ended Dec 31st, 2021	
Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Interest Expense	7,500
Salary Expense	5,000
Advertising Expense	1,000
Tax	300
NET INCOME	1,200

Company XYZ Statement of Financial Position Dec 31st, 2021			
Cash	2,000	Bank loan from KB	60,000
Inventory A	15,000	Bank loan from Shinhan	50,000
Accounts Receivable	25,000	Total liability	110,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	212,000	Total Liability and Equity	212,000

Company XYZ Income Statement For the year ended Dec 31st, 2021	
Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Interest Expense	5,500
Salary Expense	5,000
Advertising Expense	1,000
Tax	700
NET INCOME	2,800

Company ABC
Statement of Financial Position
Dec 31st, 2021

Cash	2,000	Bank loan from KB	100,000
Inventory A	30,000	Bank loan from Shinhan	50,000
Accounts Receivable	50,000	Total liability	150,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	252,000	Total Liability and Equity	252,000

Company ABC
Income Statement
For the year ended Dec 31st, 2021

Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Interest Expense	7,500
Salary Expense	5,000
Advertising Expense	1,000
Tax	300
NET INCOME	1,200

Company ABCD
Statement of Financial Position
Dec 31st, 2021

Cash	42,000	Bank loan from KB	100,000
Inventory A	15,000	Bank loan from Shinhan	50,000
Accounts Receivable	25,000	Total liability	150,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	252,000	Total Liability and Equity	252,000

Company ABC
Income Statement
For the year ended Dec 31st, 2021

Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Interest Expense	7,500
Salary Expense	5,000
Advertising Expense	1,000
Tax	300
NET INCOME	1,200

Company XYZ
Statement of Financial Position
Dec 31st, 2021

Cash	2,000	Bank loan from KB	60,000
Inventory A	15,000	Bank loan from Shinhan	50,000
Accounts Receivable	25,000	Total liability	110,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	212,000	Total Liability and Equity	212,000

Company XYZ
Income Statement
For the year ended Dec 31st, 2021

Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Interest Expense	5,500
Salary Expense	5,000
Advertising Expense	1,000
Tax	700
NET INCOME	2,800

Company ABC
Statement of Financial Position
Dec 31st, 2021

Cash	2,000	Bank loan from KB	100,000
Inventory A	30,000	Bank loan from Shinhan	50,000
Accounts Receivable	50,000	Total liability	150,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	252,000	Total Liability and Equity	252,000

Company ABC
Income Statement
For the year ended Dec 31st, 2021

Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Interest Expense	7,500
Salary Expense	5,000
Advertising Expense	1,000
Tax	300
NET INCOME	1,200

Company XYZ
Statement of Financial Position
Dec 31st, 2021

Cash	2,000	Bank loan from KB	60,000
Inventory A	15,000	Bank loan from Shinhan	50,000
Accounts Receivable	25,000	Total liability	110,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	212,000	Total Liability and Equity	212,000

Company XYZ
Income Statement
For the year ended Dec 31st, 2021

Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Interest Expense	5,500
Salary Expense	5,000
Advertising Expense	1,000
Tax	700
NET INCOME	2,800

Company AAA
Statement of Financial Position
Dec 31st, 2021

Cash	2,000	Bank loan from KB	100,000
Inventory A	15,000	Bank loan from Shinhan	50,000
Accounts Receivable	25,000	Total liability	150,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
Financial Assets (Bond)	40,000	Total equity	102,000
Total assets	252,000	Total Liability and Equity	252,000

Company AAA
Income Statement
Company XYZ

Sales Revenue	50,000
Cost of Goods	35,000
GROSS PROFIT	15,000
Interest Expense	7,500
Salary Expense	5,000
Advertising Expense	1,000
Interest Income	4,000
Tax	1,100
NET INCOME	4,400

Financial Ratio - turnover

- Which company is a better one?

Company ABC Statement of Financial Position Dec 31st, 2021				Company ABC Income Statement For the year ended Dec 31st, 2021	
Cash	2,000	Bank loan from KB	100,000	Sales Revenue	50,000
Inventory A	30,000	Bank loan from Shinhan	50,000	Cost of Goods	35,000
Accounts Receivable	50,000	Total liability	150,000	GROSS PROFIT	15,000
Land	100,000	Capital Stock	100,000	Interest Expense	7,500
Building	70,000	Retained Earning	2,000	Salary Expense	5,000
		Total equity	102,000	Advertising Expense	1,000
Total assets	252,000	Total Liability and Equity	252,000	Tax	300
				NET INCOME	1,200

Company XYZ Statement of Financial Position Dec 31st, 2021				Company XYZ Income Statement For the year ended Dec 31st, 2021	
Cash	2,000	Bank loan from KB	60,000	Sales Revenue	50,000
Inventory A	15,000	Bank loan from Shinhan	50,000	Cost of Goods	35,000
Accounts Receivable	25,000	Total liability	110,000	GROSS PROFIT	15,000
Land	100,000	Capital Stock	100,000	Interest Expense	5,500
Building	70,000	Retained Earning	2,000	Salary Expense	5,000
		Total equity	102,000	Advertising Expense	1,000
Total assets	212,000	Total Liability and Equity	212,000	Tax	700
				NET INCOME	2,800

- ✓ Accounts Receivable Turnover = $\frac{\text{Sales}}{(\text{Average}) \text{ Accounts Receivable}}$
- ✓ Inventory Turnover = $\frac{\text{Cost of Goods}}{(\text{Average}) \text{ Inventory}}$

Financial Ratio – interest expense

- Which company is a better one?

Company ABC Statement of Financial Position Dec 31st, 2021			
Cash	2,000	Bank loan from KB	100,000
Inventory A	30,000	Bank loan from Shinhan	50,000
Accounts Receivable	50,000	Total liability	150,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	252,000	Total Liability and Equity	252,000

Company ABC Income Statement For the year ended Dec 31st, 2021	
Sales Revenue	50,000
Cost of Goods	34,000
GROSS PROFIT	16,000
Salary Expense	7,400
Advertising Expense	1,000
OPERATING INCOME	7,600
Interest Expense	7,500
Tax	20
NET INCOME	80

Company XYZ Statement of Financial Position Dec 31st, 2021			
Cash	2,000	Bank loan from KB	100,000
Inventory A	30,000	Bank loan from Shinhan	50,000
Accounts Receivable	50,000	Total liability	150,000
Land	100,000	Capital Stock	100,000
Building	70,000	Retained Earning	2,000
		Total equity	102,000
Total assets	252,000	Total Liability and Equity	252,000

Company XYZ Income Statement For the year ended Dec 31st, 2021	
Sales Revenue	50,000
Cost of Goods	30,000
GROSS PROFIT	20,000
Salary Expense	7,000
Advertising Expense	500
OPERATING INCOME	12,500
Interest Expense	7,500
Tax	1,000
NET INCOME	4,000

✓ Times interest Earned Ratio =
$$\frac{\text{Income before interest expense and taxes}}{\text{Interest Expense}}$$

Financial Ratio – interest expense

- Which company is a better one?

Company ABC				Company ABC	
Statement of Financial Position				Income Statement	
Dec 31st, 2021				For the year ended Dec 31st, 2021	
Cash	2,000	Bank loan from KB	10,000	Sales Revenue	50,000
Inventory A	30,000	Bank loan from Shinhan	5,000	Cost of Goods	34,000
Accounts Receivable	50,000	Total liability	15,000	GROSS PROFIT	16,000
Land	100,000	Capital Stock	200,000	Salary Expense	14,250
Building	70,000	Retained Earning	37,000	Advertising Expense	500
		Total equity	237,000	OPERATING INCOME	1,250
				Interest Expense	750
				Tax	100
Total assets	252,000	Total Liability and Equity	252,000	NET INCOME	400

Company XYZ				Company XYZ	
Statement of Financial Position				Income Statement	
Dec 31st, 2021				For the year ended Dec 31st, 2021	
Cash	2,000	Bank loan from KB	100,000	Sales Revenue	50,000
Inventory A	30,000	Bank loan from Shinhan	50,000	Cost of Goods	30,000
Accounts Receivable	50,000	Total liability	150,000	GROSS PROFIT	20,000
Land	100,000	Capital Stock	100,000	Salary Expense	7,000
Building	70,000	Retained Earning	2,000	Advertising Expense	500
		Total equity	102,000	OPERATING INCOME	12,500
				Interest Expense	7,500
				Tax	1,000
Total assets	252,000	Total Liability and Equity	252,000	NET INCOME	4,000

- ✓ Times interest Earned Ratio
- ✓ Profit Margin Ratio

Financial Ratio – Debt ratio

- Which company is a better one?

Company ABC Statement of Financial Position Dec 31st, 2021				Company ABC Income Statement For the year ended Dec 31st, 2021	
Cash	2,000	Bank loan from KB	100,000	Sales Revenue	50,000
Inventory A	30,000	Bank loan from Shinhan	50,000	Cost of Goods	35,000
Accounts Receivable	50,000	Total liability	150,000	GROSS PROFIT	15,000
Land	100,000	Capital Stock	100,000	Interest Expense	7,500
Building	70,000	Retained Earning	2,000	Salary Expense	5,000
		Total equity	102,000	Advertising Expense	1,000
Total assets	252,000	Total Liability and Equity	252,000	Tax	300
				NET INCOME	1,200

Company XYZ Statement of Financial Position Dec 31st, 2021				Company XYZ Income Statement For the year ended Dec 31st, 2021	
Cash	2,000	Bank loan from KB	60,000	Sales Revenue	50,000
Inventory A	15,000	Bank loan from Shinhan	50,000	Cost of Goods	35,000
Accounts Receivable	25,000	Total liability	110,000	GROSS PROFIT	15,000
Land	100,000	Capital Stock	100,000	Interest Expense	5,500
Building	70,000	Retained Earning	2,000	Salary Expense	5,000
		Total equity	102,000	Advertising Expense	1,000
Total assets	212,000	Total Liability and Equity	212,000	Tax	700
				NET INCOME	2,800

- ✓ Debt ratio = $\frac{\text{Total Liabilities}}{\text{Total Assets}}$
- ✓ Debt-to-Equity ratio = $\frac{\text{Total Liabilities}}{\text{Total Equity}}$

Other ratios

- Financial Ratios

Ratio	Formula	Evaluation of
Liquidity and Efficiency		
1. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Short-term debt-paying ability.
2. Acid-test (quick) ratio	$\frac{\text{Cash} + \text{Short-term investments} + \text{Receivables (net)}}{\text{Current liabilities}}$	Immediate short-term liquidity.
3. Accounts receivable turnover	$\frac{\text{Net sales}}{\text{Average accounts receivable}}$	Efficiency of accounts receivable.
4. Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	Efficiency of inventory.
5. Fixed asset (PP&E) turnover	$\frac{\text{Net sales}}{\text{Average fixed assets (PP\&E)}}$	Efficiency of fixed assets.
Solvency		
1. Debt ratio	$\frac{\text{Total liabilities}}{\text{Total assets}}$	Creditor financing and leverage.
2. Debt-to-equity ratio	$\frac{\text{Total liabilities}}{\text{Total equity}}$	Debt versus equity financing.
3. Times interest earned ratio	$\frac{\text{Income before interests and taxes (operating profit)}}{\text{Annual interest expenses}}$	Ability to meet interest payments when they are due.

Other ratios

- Financial Ratios

Profitability		
1. Profit margin (Return on sales)	$\frac{\text{Net income}}{\text{Net sales}}$	Net income in each sales dollar.
2. Return on assets	$\frac{\text{Net income}}{\text{Average total assets}}$	Overall profitability of assets.
3. Asset turnover	$\frac{\text{Net sales}}{\text{Average total assets}}$	Efficiency of assets in producing sales.
4. Return on equity	$\frac{\text{Net income} - \text{Preference dividends}}{\text{Average total equity}}$	Profitability of owner investment.
5. Earnings per share	$\frac{\text{Net income} - \text{Preference dividends}}{\text{Weighted-average common shares outstanding}}$	Net income per each ordinary share.
6. Price-earnings (PE) ratio	$\frac{\text{Market value of shares}}{\text{Net income}} = \frac{\text{Price per share}}{\text{Earnings per share}}$	Market value relative to earnings.
Cash flow		
1. Cash flow-to-net income ratio	$\frac{\text{Cash flow from operations}}{\text{Net income}}$	Relationships of cash flow from operations and net income.
2. Cash flow adequacy ratio	$\frac{\text{Cash flow from operations}}{\text{Cash paid for capital expenditures}}$	Capability of covering capital expenditures.

Any Questions?

Stock Price and Net-income

- Let's assume that Company XYZ has no retained earning (providing all the annual net-income to its shareholders by dividends).
 - The stock price will be the net present value of the future cash flow (The current year's dividend was already provided.)
 - The number of stocks is 1000 and the interest rate is 5%.

Company XYZ Income Statement Company XYZ	
Sales Revenue	50,000
Cost of Goods	30,000
GROSS PROFIT	20,000
Salary Expense	5,500
Advertising Expense	1,000
OPERATING INCOME	13,500
Interest Expense	1,000
Tax	2,500
NET INCOME	10,000

$$\begin{aligned}\rightarrow \text{Price of one stock} &= \frac{10}{(1+0.05)^1} + \frac{10}{(1+0.05)^2} + \frac{10}{(1+0.05)^3} + \dots \\ &= \frac{10}{(0.05)} = 2,000\end{aligned}$$

Stock Price and Net-income

- There are many assumptions in estimating the stock price:
 - e.g.) expectation of future net-income, appropriate interest rate, etc.
- We may use a ratio, “Earnings per share (EPS).”
 - However, the value depends on the number of total stocks in a company.
 - It is difficult to compare multiple companies by using EPS.
- We can compare companies if we can control the effect of the number of stocks.
 - The cash flow of one stock vs. The market price of one stock
 - Price / Earnings Ratio (PER) =
$$\frac{EPS \text{ (Earnings per share, Net income of one stock)}}{Price \text{ of one stock}}$$

Stock Price and Net-income

- Example - Costco



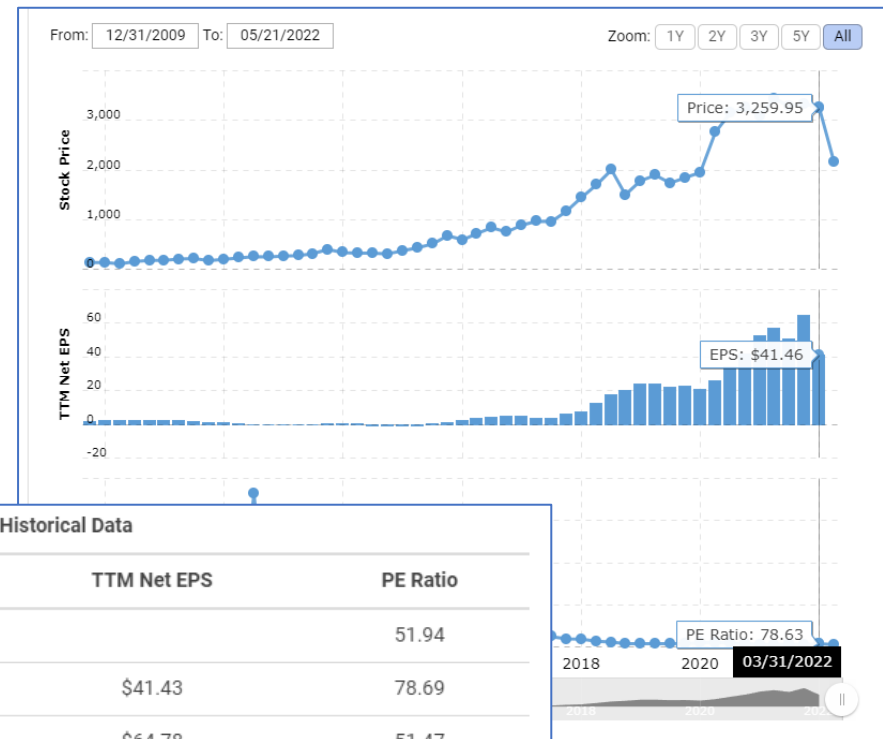
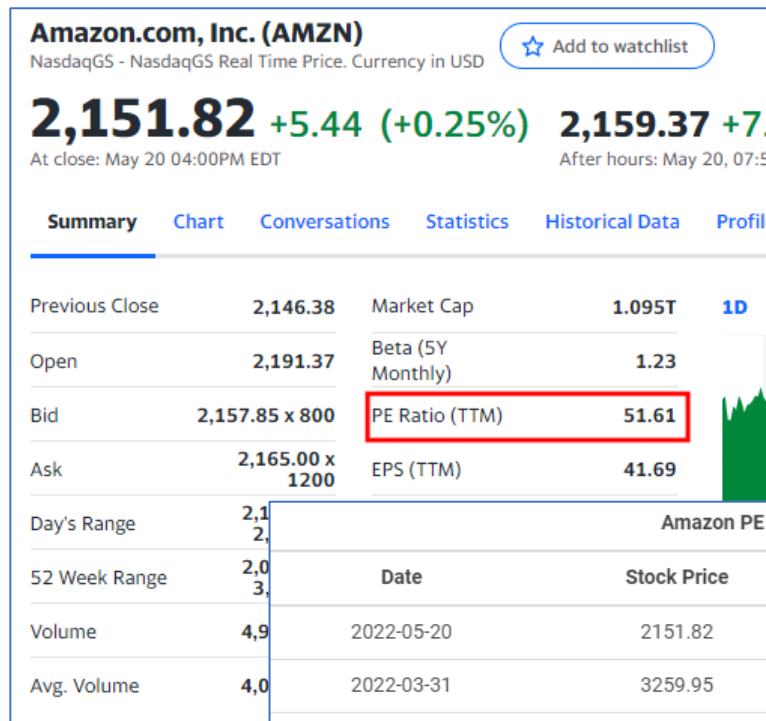
Costco PE Ratio Historical Data			
Date	Stock Price	TTM Net EPS	PE Ratio
2022-05-20	416.43		33.56
2022-02-28	518.42	\$12.41	41.77
2021-11-30	537.70	\$11.63	46.23
2021-08-31	453.34	\$11.27	40.23
2021-05-31	375.79	\$10.64	35.32

<https://finar>

<https://www.macrotrends.net/stocks/charts/COST/costco/pe-ratio>

Stock Price and Net-income

- Example - Amazon



Amazon PE Ratio Historical Data			
Date	Stock Price	TTM Net EPS	PE Ratio
2022-05-20	2151.82		51.94
2022-03-31	3259.95	\$41.43	78.69
2021-12-31	3334.34	\$64.78	51.47
2021-09-30	3285.04	\$51.12	64.26

<https://finance.yahoo.com/quote/AMZN?p=AMZN&.tsrc=fin-srch>

<https://www.macrotrends.net/stocks/charts/AMZN/amazon/pe-ratio>

Any Questions?

Auditor's report

- Four Types of Audit Opinion
 - Unqualified Opinion (clean opinion)
 - Qualified opinion
 - : Due to “material misstatements” or “unable to obtain audit evidence”
 - : The (potential) misstatements are material but not pervasive.
 - Disclaimer of opinion
 - : Due to “unable to obtain audit evidence”
 - The (potential) misstatements are material and pervasive.
 - Adverse opinion
 - : Due to “material misstatements”
 - The misstatements are material and pervasive.

<https://www.sec.gov/Archives/edgar/data/0001326205/000118518510000790/indiglobal10k033110.htm#28>

<https://www.iaasb.org/publications/2020-handbook-international-quality-control-auditing-review-other-assurance-and-related-services>

<https://www.ifac.org/system/files/publications/files/IAASB-2020-Handbook-Volume-1.pdf>

Accounting Information and Decision Making

- Accounting Information can be used for decision making.
- Evaluating our expense structure
 - : Cost of goods, salary expense, advertisement, other expenses.
 - : Comparing with other companies
 - : Trend analysis (comparing with itself or other companies)
 - : Which business processes are needs to be improved (new IT Project)?
- Business cycle evaluation and improvement
 - : Level of inventory, Level of accounts receivables, amount of PPEs
- Deciding dividend policy
 - : Dividend or not dividend
- Do we have enough cash?

Summary

- Financial Ratio
 - Profitability
 - Debt Ratio
 - Stock Price related Ratio
- Auditor's Report
- Evaluating companies
- Developing future strategy

Thank you!