ផ្សារមូលបត្រកម្ពុជា

CSX

Financial Statement Analysis

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2. Understanding the Balance Sheet
3. Understanding the Income Statement
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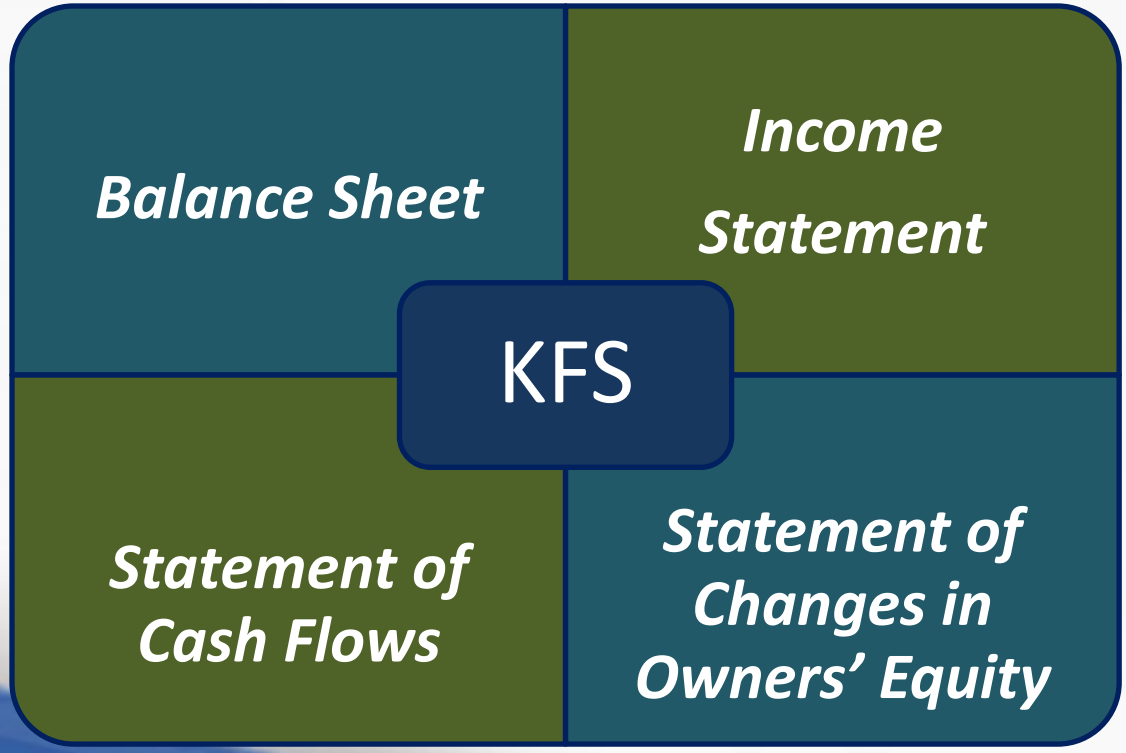
Financial Statement Analysis: An introduction

- The roles of financial statement analysis
- Key financial statements that are a primary focus of analysis include:



Understanding the Balance Sheet

1. Introduction

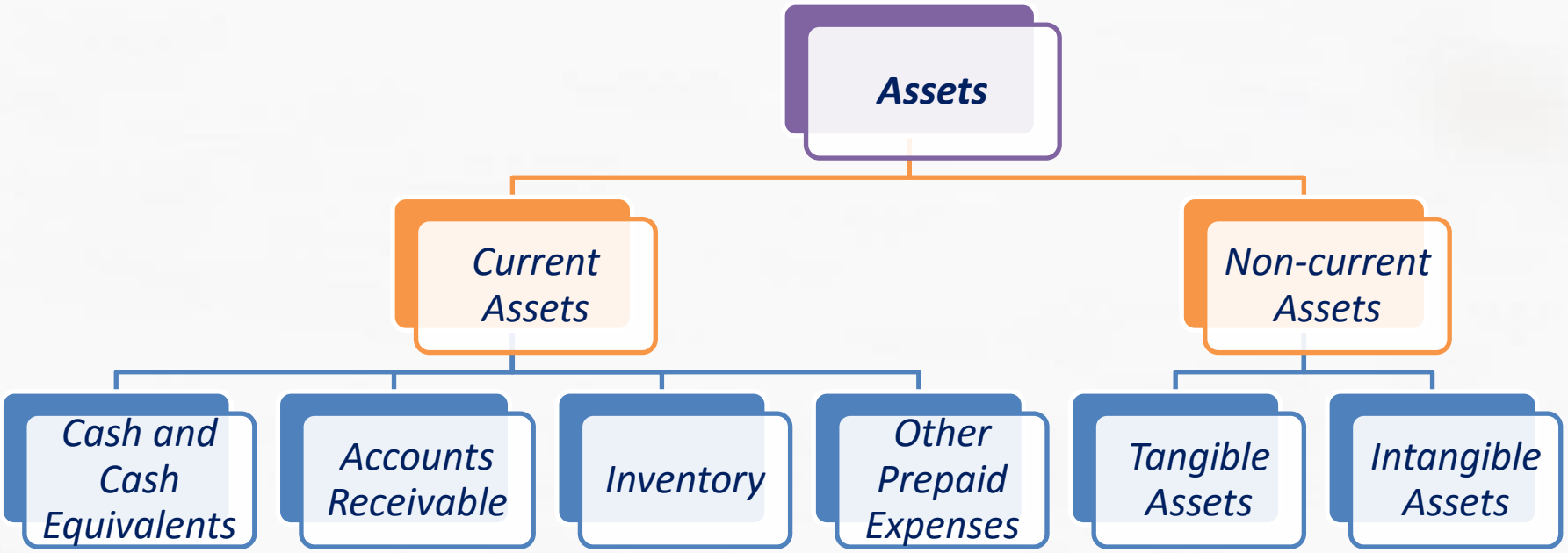
- The balance sheet (also known as the ***statement of financial position*** or ***statement of financial condition***), Shows a company's assets, liabilities and owners' equity (or net worth)
- The balance sheet, together with the income statement, and cash flow statement, are the foundation of any company's financial statements.

2. Components of the Balance Sheet

- The balance sheet is divided into parts which must be equal each other.

- ***Assets*** *(A)* are the tools used to operate the company.
- ***Liabilities (L)*** are a company's financial obligations (debts)
- ***Owners' Equity=Shareholders' Equity (E)*** is shareholders' investment brought into the company and its retained earnings (profits).

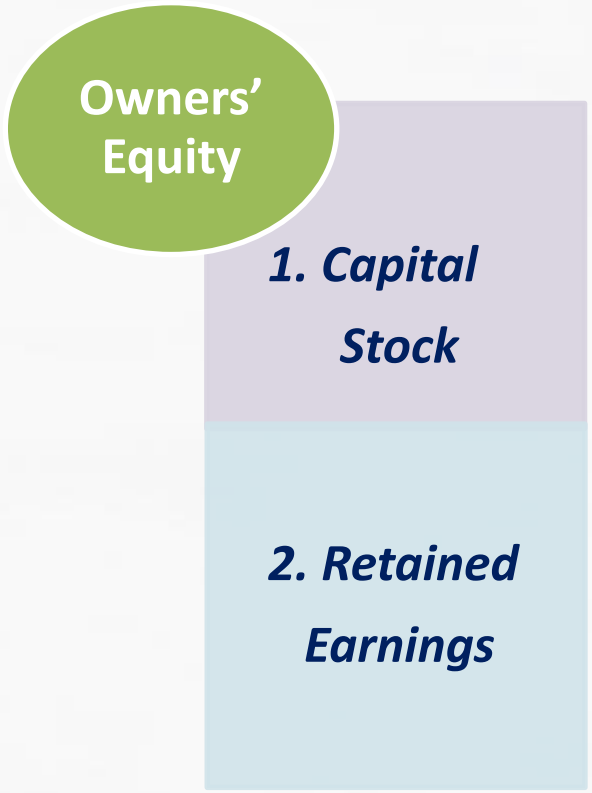
Types of Assets



Types of Liabilities and Owners' Equity

1. Liabilities

2. Owners' Equity



What a Balance Sheet Tells You

There is good information on the Balance Sheet, such as:

1. *A summary of the organization's assets and the claims against those assets as of a specific date.*
2. *Information about the organization's current ability to pay its current debts.*
3. *The information shows how the organization is positioned to keep going with the day to day business operations.*

2.2. Format of the Balance Sheet

Example:

EXHIBIT 5-7 Roche Group—Consolidated Balance Sheets (CHF millions)

	31 December	
	2005	**2004**
Noncurrent assets		
Property, plant, and equipment	15,097	12,408
Goodwill	6,132	5,532
Intangible assets	6,256	6,340
Investments in associated companies	58	55
Financial long-term assets	2,190	1,227
Other long-term assets	660	484
Deferred income tax assets	1,724	1,144
Post-employment benefit assets	1,622	1,577
Total noncurrent assets	**33,739**	**28,767**
Current assets		
Inventories	5,041	4,614
Accounts receivables	7,698	7,014
Current income tax assets	299	159
Other current assets	1,703	2,007
Receivable from Bayer Group collected on 1 January 2005	—	2,886
Marketable securities	16,657	10,394
Cash and cash equivalents	4,228	2,605
Total current assets	**35,626**	**29,679**
Total assets	**69,365**	**58,446**
Noncurrent liabilities		
Long-term debt	(9,322)	(7,077)
Deferred income tax liabilities	(3,518)	(3,564)
Post-employment benefits liabilities	(2,937)	(2,744)
Provisions	(1,547)	(683)
Other noncurrent liabilities	(806)	(961)
Total noncurrent liabilities	**(18,130)**	**(15,029)**
Current Liabilities		
Short-term debt	(348)	(2,013)
Current income tax liabilities	(811)	(947)
Provisions	(833)	(1,223)
Accounts payable	(2,373)	(1,844)
Accrued and other current liabilities	(5,127)	(4,107)
Total current liabilities	**(9,492)**	**(10,134)**
Total liabilities	**(27,622)**	**(25,163)**
Total net assets	**41,743**	**33,283**
Equity		
Capital and reserves attributable to Roche shareholders	34,922	27,998
Equity attributable to minority interests	6,821	5,285
Total equity	**41,743**	**33,283**

Understanding the Income Statement

Introduction

- ***The income statement*** communicates how much revenue the company generated during a period and what costs it incurred in connection with generating that revenue.
- The basic equation underlying the income statement is:

Revenue-Expense = Net income

- The income statement is also called ***the statement of operations or statement of earnings*** or, sometimes, in business jargon, it is called the P&L (for profit and loss).
- The terms “profits,” “earnings” and “income” all mean the same thing and are used interchangeably.

Two basic formats for the income statement used in financial reporting presentations

Multi-Step Format

Net Sales

Cost of Sales

Gross Income

Selling, General and Administrative

Expenses (SG&A)

Operating Income

Other Income & Expenses

*Pretax Income**

Taxes

*Net Income (after tax)**

Single-Step Format

Net Sales

Materials and Production

Marketing and Administrative

Research and Development

Expenses (R&D)

Other Income & Expenses

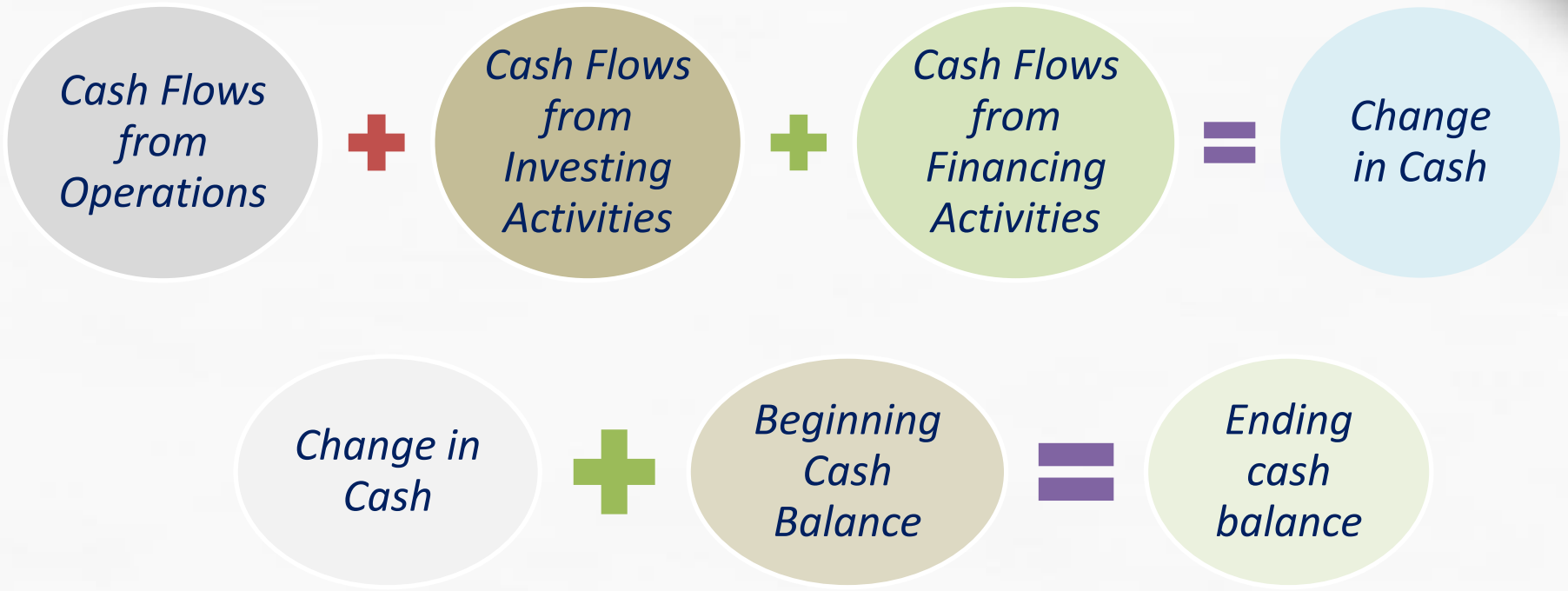
Pretax Income

Taxes

Net Income

Understanding Statement of Cash Flows

Statement Structure



- Supplemental disclosure: non-cash financing and investing activities

Operating Activities

The cash effects of transactions and other events that enter into the determination of net income:

Cash inflows from

- Sale of goods or service
- Returns on loans (interest)
- Return on equity securities (dividends)

Cash outflows for

- Payments for acquisitions of inventory
- Payments to employees
- Payments for taxes
- Payments for interest
- Payments for other expenses

Investing Activities

Lending money and collecting on those loans and acquiring and selling investments and productive long-term assets:

Cash inflows from	*Cash outflows for*
• Receipts for loans collected • Sales of debt or equity securities • Sales of plant, property, and equipment	• Loans to other entities • Investment in debt or equity securities • Purchase of plant, property, and equipment

Financing Activities

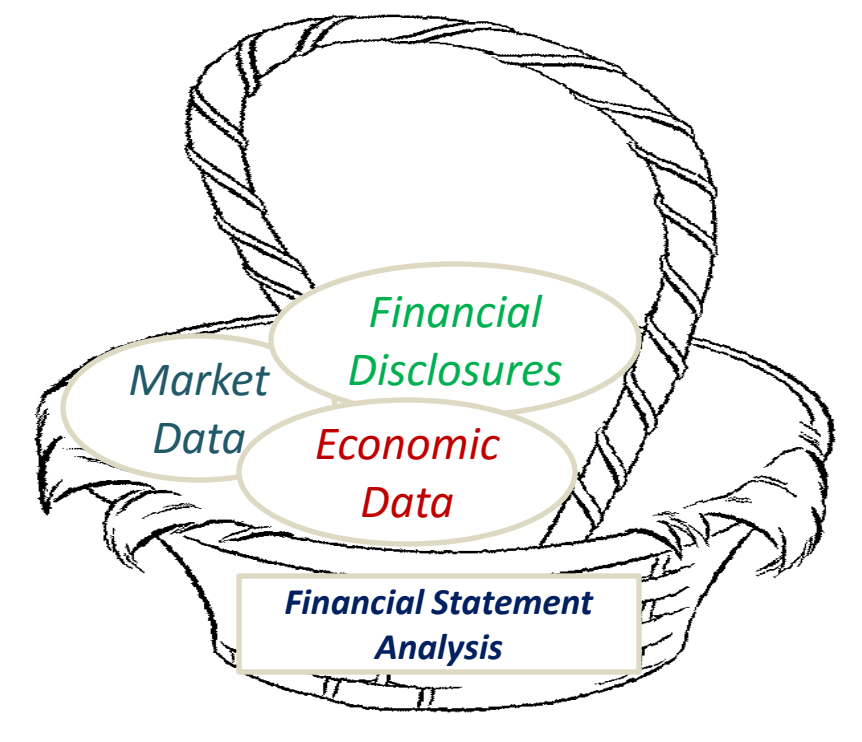
Borrowing and repaying long-term loans; issuing equity securities; payment of dividends to shareholders:

Cash inflows from	*Cash outflows for*
• Sale of equity securities • Sale of bonds, mortgages, notes, and other short-and long-term borrowings	• Payment of dividends • Reacquisition of capital stock • Payment of amounts borrowed

Financial Statement Analysis

1. Introduction

Financial Statement Analysis is a process of selecting, evaluating, and interpreting financial data, along with other pertinent information, to formulate an assessment of a company's present and future financial condition and performance.



2. Common-size Analysis

Common-size analysis is the restatement of financial statement in a standardized form.

Common-size Analysis	
Horizontal	**Vertical**
- Using the amounts in accounts in a specified year as the base, and subsequent years' amounts are stated as a percentage of the base value. *-Useful when comparing growth of different accounts over time.*	*-using the aggregate value in a financial statement for a given year as the base, and each account's amount is restated as a percentage of the aggregate.* *-Balance sheet: Aggregate amount is total assets.* *-Income statement: Aggregate amount is revenues or sales.*

2. Common-size Analysis (Example)

Example: Consider the MD company, which reports the following financial information:

Year	2010	2011	2012	2013	2014	2015
Cash	$400.00	$404.00	$408.04	$412.12	$416.24	$420.40
Inventory	1,580.00	1,627.40	1,676.22	1,726.51	1,778.30	1,831.65
Accounts Receivable	1,120.00	1,142.40	1,165.25	1,188.55	1,212.32	1,236.57
Net Plant and Equipment	3,500.00	3,640.00	3,785.60	3,937.02	4,094.50	4,258.29
Intangibles	400.00	402.00	404.01	406.03	408.06	410.10
Total Assets	$7,000.00	$7,215.80	$7,439.12	$7670.23	$7909.42	$8157.01

1. Create the horizontal common-size analysis for MD Company's assets, Using 2010 as the base year.

2. Common-size Analysis (Example)

Horizontal Common-Size Analysis (base year is 2010):

Year	2010	2011	2012	2013	2014	2015
Cash	100.00%	101.00%	102.01%	103.03%	104.06%	105.10%
Inventory	100.00%	103.00%	106.09%	109.27%	112.55%	115.93%
Accounts Receivable	100.00%	102.00%	104.04%	106.12%	108.24%	110.41%
Net Plant and Equipment	100.00%	104.00%	108.16%	112.49%	116.99%	121.67%
Intangibles	100.00%	100.50%	101.00%	101.51%	102.02%	102.53%
Total Assets	100.00%	103.08%	106.27%	109.57%	112.99%	116.53%

2. Common-size Analysis (Example)

Example: Consider the MS company, which reports the following financial information:

Year	2010	2011	2012	2013	2014	2015
Cash	$400.00	$404.00	$408.04	$412.12	$416.24	$420.40
Inventory	1,580.00	1,627.40	1,676.22	1,726.51	1,778.30	1,831.65
Accounts Receivable	1,120.00	1,142.40	1,165.25	1,188.55	1,212.32	1,236.57
Net Plant and Equipment	3,500.00	3,640.00	3,785.60	3,937.02	4,094.50	4,258.29
Intangibles	400.00	402.00	404.01	406.03	408.06	410.10
Total Assets	$7,000.00	$7,215.80	$7,439.12	$7,670.23	$7,909.42	$8,157.01

1. Create the vertical common-size analysis for the MS Company's assets.

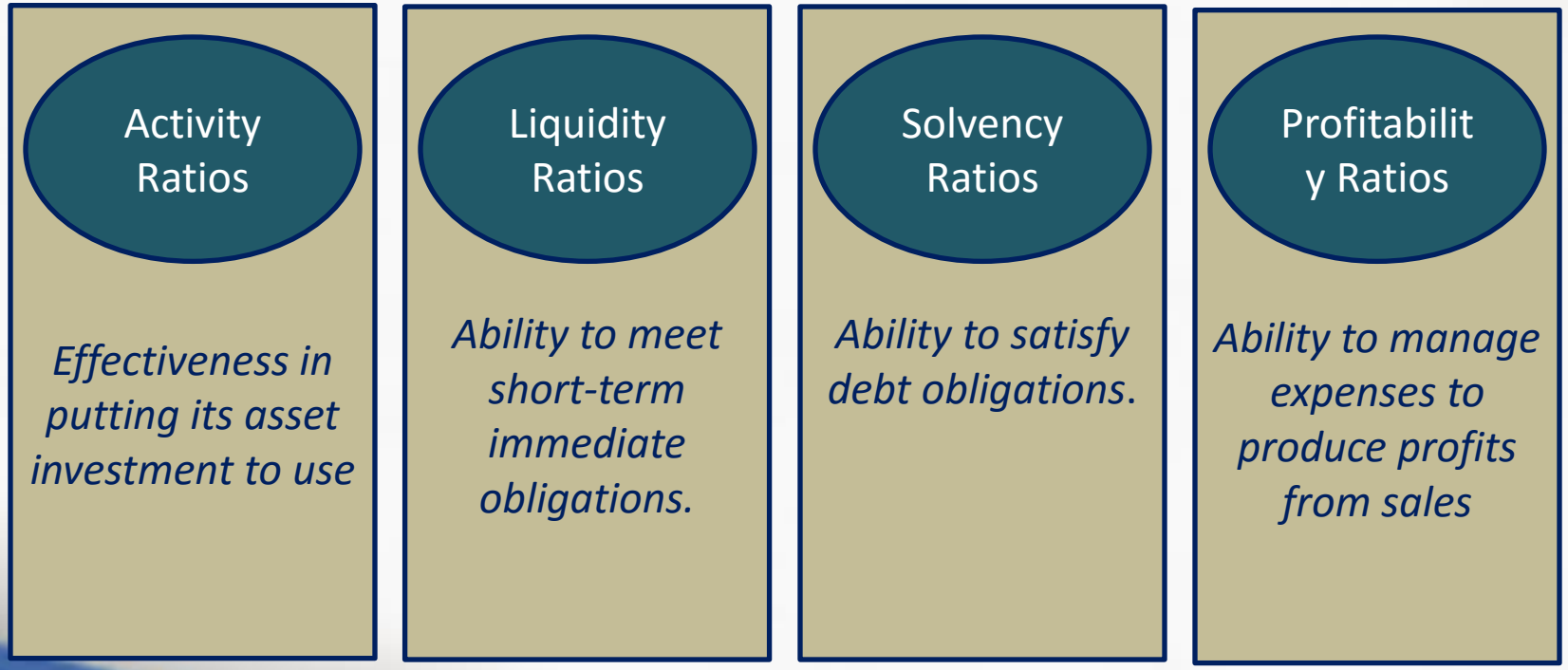
3. Common-size Analysis (Example)

Vertical Common-Size Analysis (base year is 2010):

Year	2010	2011	2012	2013	2014	2015
Cash	5.71%	5.60%	5.49%	5.37%	5.26%	5.15%
Inventory	22.57%	22.55%	22.53%	22.51%	22.48%	22.45%
Accounts Receivable	16.00%	15.83%	15.66%	15.50%	15.33%	15.16%
Net Plant and Equipment	50.00%	50.44%	50.89%	51.33%	51.77%	52.2%
Intangibles	5.71%	5.57%	5.43%	5.29%	5.16%	5.03%
Total Assets	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

3. Financial Ratio Analysis

- Financial ratio analysis is the use of relationships among financial statement accounts to gauge the financial condition and performance of a company.
- We can classify ratios based on the type of information the ratio provides:



Activity Ratios

- Turnover ratios reflect the number of times assets flow into and out of the company during the period.
- A turnover is a gauge of the efficiency of putting assets to work.
- Ratios:

$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$	*How many times inventory is created and sold during the period.*
$\text{Receivables turnover} = \frac{\text{Total revenue}}{\text{Average receivables}}$	*How many times accounts receivable are created and collected during the period.*

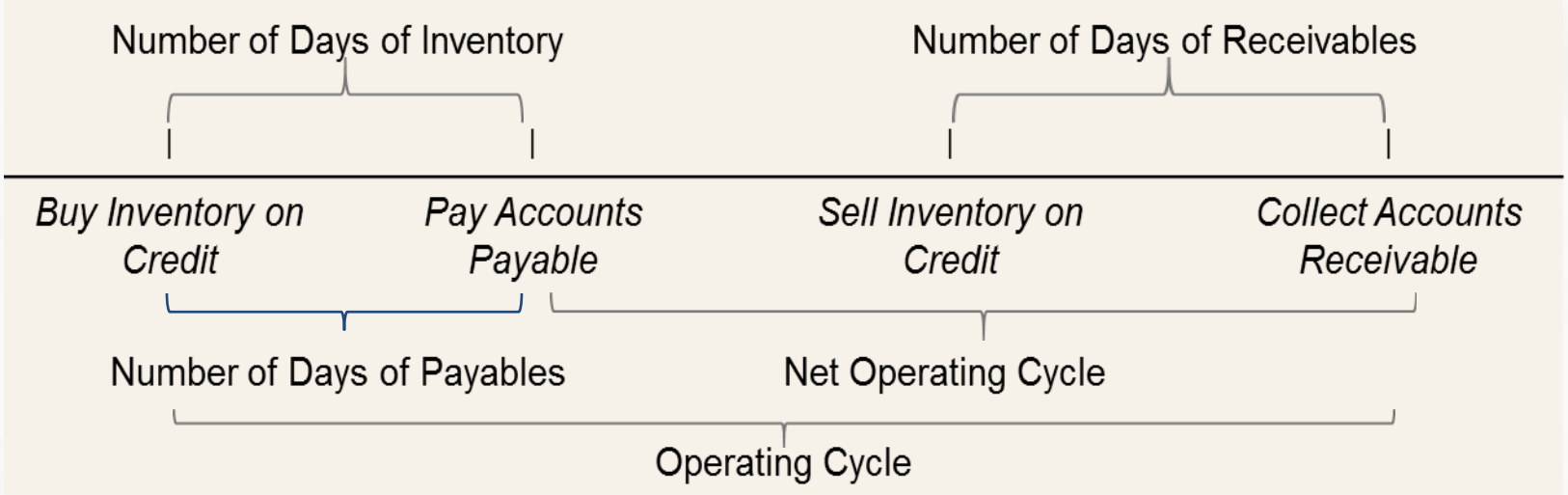
Operating Cycle Components

*The **operating cycle** is the length of time from when a company makes an investment in goods and services to the time it collects cash from its accounts receivable.*

*The **net operating cycle** is the length of time from when a company makes an investment in goods and services, considering the company makes some of its purchases on credit, to the time it collects cash from its accounts receivable.*

The length of the operating cycle and net operating cycle provides information on the company's need for liquidity: The longer the operating cycle, the greater the need for liquidity

Operating Cycle Components (Con't)



Operating Cycle Formulas

- ***Number of days of inventory:*** Average time it takes to create and sell inventory.
- ***Number of days of receivables:*** Average time it takes to collect on accounts receivable.
- ***Number of days of payables:*** Average time it takes to pay suppliers.

$\text{Number of days of inventory} = \dfrac{\text{Inventory}}{\text{Average day's cost of goods sold}} = \dfrac{365}{\text{Inventory turnover}}$
$\text{Number of days of receivables} = \dfrac{\text{Receivables}}{\text{Average day's revenues}} = \dfrac{365}{\text{Receivables turnover}}$
$\text{Number of days of payables} = \dfrac{\text{Accounts payable}}{\text{Average day's purchases}} = \dfrac{365}{\text{Accounts payable turnover}}$

Operating Cycle Formulas (Con't.)

- ***Operating cycle:*** Time from investment in inventory to collection of accounts.
- ***Net operating cycle:*** Time from investment in inventory to collection of accounts, considering the use of trade credit in purchases.

Operating cycle =	Number of days of inventory	+	Number of days of receivables			
Net operating cycle	= Number of days of inventory	+	Number of days of receivables	–	Number of days of payables	

Liquidity

- ***Liquidity*** is the ability to satisfy the company's short-term obligations using assets that can be most readily converted into cash.

Liquidity Ratios	
Formula	Meaning
$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$	*Ability to satisfy current liabilities using current assets.*
$\text{Quick ratio} = \frac{\text{Cash} + \text{Short-term investments} + \text{Receivables}}{\text{Current liabilities}}$	*Ability to satisfy current liabilities using the most liquid of current assets.*
$\text{Cash ratio} = \frac{\text{Cash} + \text{Short-term investments}}{\text{Current liabilities}}$	*Ability to satisfy current liabilities using only cash and cash equivalents.*

Solvency Analysis

- Financial risk is the risk resulting from a company's choice of how to finance the business using debt or equity.
- We use solvency ratios to assess a company's financial risk.
- Type of solvency ratios: *component percentages*

Solvency Ratios

Component-Percentage Solvency Ratios	
$\text{Debt–to–assets ratio} = \frac{\text{Total debt}}{\text{Total assets}}$	*Proportion of assets financed with debt.*
$\text{Long–term debt–to–assets ratio} = \frac{\text{Long–term debt}}{\text{Total assets}}$	*Proportion of assets financed with long-term debt.*
$\text{Debt–to–equity ratio} = \frac{\text{Total debt}}{\text{Total shareholders' equity}}$	*Debt financing relative to equity financing.*
$\text{Financial leverage} = \frac{\text{Total assets}}{\text{Total shareholders' equity}}$	*Reliance on debt financing*.

Profitability

- Margins and return ratios provide information on the profitability of a company and the efficiency of the company.
- ***A margin*** is a portion of revenues that is a profit.
- ***A return*** is a comparison of a profit with the investment necessary to generate the profit.

Profitability Ratios: Margins *Each margin ratio compares a measure of income with total revenues*:
$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Total revenue}}$
$\text{Operating profit margin} = \frac{\text{Operating profit}}{\text{Total revenue}}$
$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Total revenue}}$
$\text{Pretax profit margin} = \frac{\text{Earnings before taxes}}{\text{Total revenue}}$

Profitability Ratios: Returns

Return ratios compare a measure of profit with the investment that produces the profit:
$\text{Operating return on assets} = \frac{\text{Operating income}}{\text{Average total assets}}$
$\text{Return on assets} = \frac{\text{Net income}}{\text{Average total assets}}$
$\text{Return on equity} = \frac{\text{Net income}}{\text{Average shareholders' equity}}$

Other Ratios

- **Earnings per share** = $\dfrac{\text{Net income available to common shareholders}}{\text{Number of common shares outstanding}}$

- **Book value per share** $= \dfrac{\text{Equity}}{\text{Number } of \ Shares}$

- **Price-to-earnings ratio (PE or P/E)** $= \dfrac{\text{Current Price}}{\text{Earnings Per Share}}$

Shareholder Ratios (Example)

Measures of Dividend Payment:

$\text{Dividends per share (DPS)} = \dfrac{\text{Dividends paid to shareholders}}{\text{Weighted average number of ordinary shares outstanding}}$
$\text{Dividend payout ratio} = \dfrac{\text{Dividends paid to common shareholders}}{\text{Net income attributable to common shares}}$
Plowback ratio = 1 – Dividend payout ratio The proportion of earnings retained by the company.

Shareholder Ratios (Example)

Calculate the book value per share, P/E, dividends per share, dividend payout, and plowback ratio based on the following financial information:

Book value of equity	$100million
Market value of equity	$500 million
Net Income	$30 million
Dividends	$12 million
Number of shares	100 million

Shareholder Ratios (Example)

Book value per share	$1.00	*There is $1 of equity, per the books, for every share of stock.*
P/E	16.67	*The market price of the stock is 16.67 times earnings per share.*
Dividends per share	$0.12	*The dividends paid per share of stock.*
Dividend payout ratio	40%	The proportion of earnings paid out in the form of dividends
Plowback ratio	60%	*The proportion of earnings retained by the company.*

Effective Use of Ratio Analysis

- In addition to ratios, an analyst should describe the company (e.g., line of business, major products, major suppliers), industry information, and major factors or influences.

Over Time

Compared with other companies in the same line of business

In the context of major events in the company, accounting changes, and changes in the company's product mix

5. Summary

- Briefly introduction of financial statement
- Briefly introduction of balance sheet, income statement and cash flow statement.
- Financial ratio analysis and common-size analysis help gauge the financial performance and condition of a company through an examination of relationships among these many financial items.
- A thorough financial analysis of a company requires examining its efficiency in putting its assets to work, its liquidity position, its solvency, and its profitability.
- We can use the tools of common-size analysis and financial ratio analysis, to help understand where a company has been.

Thank You!