

Introduction to Finance

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MGM 237

**Financial Analysis, Long-Term
Planning, and Strategic Decisions**

Lecture 3



Chapter

3

Financial Analysis, Long-Term Planning, and Strategic Decisions

Learning Outcomes

Students will be able to:

- **Compute key financial ratios accurately.**
- **Interpret financial ratios to assess business performance.**
- **Diagnose strengths and weaknesses in financial performance.**
- **Prepare basic financial forecasts.**
- **Develop simple pro forma financial statements.**
- **Connect financial analysis results to strategic financial decisions.**

Logical Flow of the Lecture

From financial statements to financial diagnosis, planning, and strategic decisions.

1 Statements

Start with the income statement, balance sheet, and cash flow information.

2 Analysis tools

Apply horizontal, vertical, common-size, and ratio analysis.

3 Interpretation

Compare results against trends, targets, and industry averages.

4 Planning

Use forecasts and pro forma statements to test future needs.

5 Strategy

Translate numbers into financing, investment, and operating decisions.



Instructor emphasis

The lecture moves in one direction: data → analysis → interpretation → planning → decision. you should always ask: “What does this number mean for the firm?”

Link with Financial Statements and Valuation

Financial analysis converts accounting data into signals about cash flows, risk, and growth.

- The income statement shows profitability over a period and helps analysts understand margins and earnings power.
- The balance sheet shows resources and claims at a point in time and helps analysts assess liquidity, leverage, and asset structure.
- The cash flow statement shows how cash is generated and used; it confirms whether accounting profits are supported by cash.
- Valuation depends on expected future cash flows, required return, and growth prospects.

Statement	Key analytical question
Income statement	Is the firm generating profits efficiently?
Balance sheet	Can the firm finance assets safely?
Cash flow statement	Are profits turning into cash?

Valuation logic

Firm value rises when expected cash flows ↑ or risk ↓

Purpose of Financial Analysis

Financial analysis answers three managerial questions: performance, risk, and direction.

Question	Meaning	Example indicator
How did we perform?	Evaluate profitability and efficiency	Net margin, ROA, asset turnover
How risky are we?	Evaluate liquidity and solvency	Current ratio, debt ratio, TIE
Where are we going?	Evaluate sustainability and financing needs	Trend analysis, forecasts, EFN

Practical example

If sales grow by 20% but inventory grows by 60%, the firm may be expanding inefficiently. The issue is not growth itself; the issue is whether growth consumes too much working capital.

Decision connection

The results can influence credit terms, inventory policy, pricing, cost control, dividend policy, debt capacity, and capital budgeting.

Users of Financial Analysis

Different users interpret the same ratios for different decisions.

User	Decision need	Focus
Managers	Improve operations and allocate resources	Margins, turnover, forecasts
Lenders	Assess repayment ability	Liquidity, leverage, interest coverage
Shareholders	Evaluate return and risk	EPS, ROE, P/E, growth
Suppliers	Evaluate credit reliability	Current ratio, cash ratio, payment history
Analysts	Assess performance and value	Trends, peers, market ratios

Key idea

A ratio is not “good” or “bad” in isolation. A high leverage ratio may increase ROE in good years but also raises default risk during downturns.

Internal and External Users: Decision Map

Analysis supports both internal control and external evaluation.



Internal users

- Board of directors: strategic oversight
- CFO and finance team: liquidity, financing, capital structure
- Operations managers: asset utilization and cost control
- Controllers: reporting quality and budget control

External users

- Banks: credit risk
- Bondholders: long-term solvency
- Investors: valuation and risk-return tradeoff
- Suppliers: payment reliability
- Competitors and analysts: benchmarking

Class discussion

A firm can look attractive to investors because ROE is high, but risky to lenders if the high ROE is mainly driven by debt.

Four Core Tools of Financial Analysis

Each tool answers a different analytical question.

Tool	Core question	Typical output
Horizontal analysis	How did the account change over time?	Dollar and percentage changes
Vertical analysis	What is the structure of the statement?	Common-size percentages
Ratio analysis	What is the relationship between accounts?	Liquidity, activity, debt, profitability, market ratios
Trend analysis	Is performance improving or deteriorating?	Multi-year pattern and direction

Sequence

Start with what changed, then analyze the structure, then calculate ratios, then interpret the trend and benchmark.

Horizontal Analysis

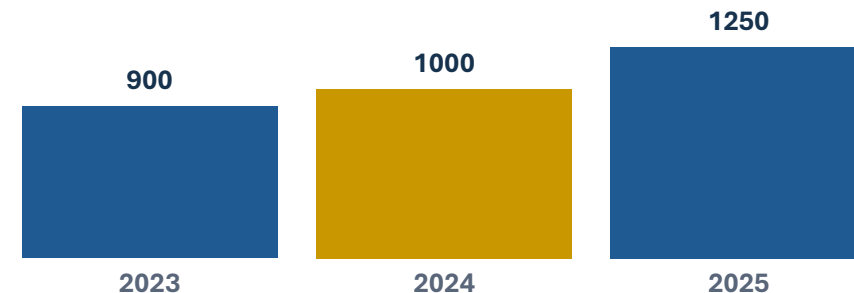
Horizontal analysis compares the same account across periods.

Formula

$$\text{Percentage change} = (\text{Current year amount} - \text{Base year amount}) \div \text{Base year amount} \times 100$$

- It highlights growth, decline, or stability in major accounts.
- It helps identify unusual changes that need explanation.
- It is useful for income statement items, balance sheet accounts, and cash flow categories.
- The base year should be meaningful and comparable.

Sales trend example



Interpretation warning

A large percentage change from a small base may look impressive but may not be economically important.

Worked Example: Horizontal Analysis

The first practical step is calculating change and then explaining it.

Item	2024	2025	Change	% change
Sales	\$1,000,000	\$1,250,000	\$250,000	25.0%
COGS	\$650,000	\$750,000	\$100,000	15.4%
Operating expenses	\$220,000	\$300,000	\$80,000	36.4%
Net income	\$91,000	\$140,000	\$49,000	53.8%

Interpretation

Sales increased strongly. COGS increased at a lower rate than sales, which improved gross profit. However, operating expenses grew faster than sales, so management should investigate whether this supports future growth or reflects weak cost control.

Class task

calculate the % change in COGS and explain whether it is favorable or unfavorable.

Vertical Analysis and Common-Size Statements

Vertical analysis converts dollar amounts into percentages of a base.

Income statement

Each item $\div$ Sales $\times$ 100

- Common-size statements allow comparison across firms of different sizes.
- They show cost structure, asset structure, and financing structure.
- They are useful when sales or total assets change substantially over time.
- They help identify whether the business model is becoming more efficient.

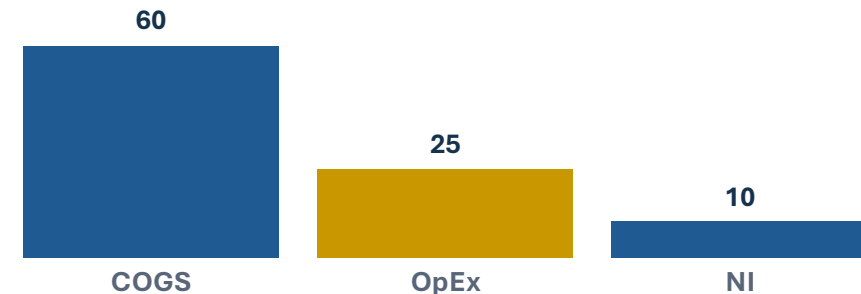
Key idea

Common-size analysis answers: “For every \$1 of sales or assets, where does the money go?”

Balance sheet

Each item $\div$ Total assets $\times$ 100

Common-size income statement (%)



Worked Example: Common-Size Income Statement

Common-size analysis turns the income statement into a profitability map.

Item	Amount	% of sales
Sales	\$1,250,000	100.0%
COGS	\$750,000	60.0%
Gross profit	\$500,000	40.0%
Operating expenses	\$300,000	24.0%
EBIT	\$200,000	16.0%
Interest	\$20,000	1.6%
Taxes	\$40,000	3.2%
Net income	\$140,000	11.2%

Interpretation

The gross margin is 40%, which means the firm keeps \$0.40 from each sales dollar before operating expenses. Net margin is 11.2%, so only \$0.112 of each sales dollar becomes profit after all expenses.

Question: If COGS rises from 60% to 65% of sales, what happens to gross profit margin and net margin?

Ratio Analysis Overview

Ratios summarize relationships between financial statement accounts.

Ratio family	Main purpose	Examples
Liquidity	Short-term payment capacity	Current, quick, cash ratios
Activity	Efficiency of asset use	Inventory, receivables, asset turnover
Debt	Long-term solvency and leverage	Debt ratio, D/E, TIE
Profitability	Ability to generate profits	Margins, ROA, ROE
Market	Investor valuation signals	EPS, P/E, market-to-book

Interpretation principle

Never interpret one ratio alone. Good analysis combines multiple ratios and asks whether the overall pattern is consistent with the firm's strategy.

How to Interpret Any Ratio

Calculation is mechanical; interpretation requires comparison and judgment.



1. Compute the ratio correctly using consistent definitions.
2. Compare with prior years to identify trend direction.
3. Compare with industry averages or direct competitors.
4. Explain the business reason behind the change.
5. Connect the conclusion to a decision or recommendation.

Example

A current ratio of 2.0 may be strong in retail, weak in another industry, or inefficient if it results from obsolete inventory.

Liquidity Ratios

Liquidity measures the firm's ability to meet short-term obligations.

- Liquidity risk arises when obligations become due before cash is available.
- Liquidity depends on the quality and timing of current assets, not only their amount.
- A highly profitable firm can still face liquidity problems if receivables are collected slowly.
- Main ratios: current ratio, quick ratio, and cash ratio.

Liquidity tradeoff

Too little liquidity increases default risk. Too much liquidity can reduce returns because cash and idle assets may earn low returns.

Core idea

Liquid resources ÷ short-term obligations

Current Ratio

The current ratio is the broadest measure of short-term liquidity.

Formula

Current ratio = Current assets ÷ Current liabilities

Current assets	Amount
Cash	\$80,000
Accounts receivable	\$140,000
Inventory	\$180,000
Total current assets	\$400,000
Current liabilities	\$200,000

Worked example

Current ratio = \$400,000 ÷ \$200,000 = 2.0 times. Interpretation: the firm has \$2 of current assets for every \$1 of current liabilities.

Important caution

A current ratio may look strong even when a large part of current assets is slow-moving inventory or doubtful receivables.

Quick Ratio

The quick ratio excludes inventory because inventory is usually less liquid than cash and receivables.

Formula

$$\text{Quick ratio} = (\text{Current assets} - \text{Inventory}) \div \text{Current liabilities}$$

Input	Amount
Current assets	\$400,000
Inventory	\$180,000
Current liabilities	\$200,000

Worked example

Quick ratio = $(\$400,000 - \$180,000) \div \$200,000 = 1.10$ times.
Interpretation: after excluding inventory, the firm has \$1.10 of quick assets for each \$1 of current liabilities.

When it matters most

The quick ratio is especially useful when inventory is hard to sell quickly, perishable, seasonal, technologically outdated, or costly to liquidate.

Cash Ratio

The cash ratio is the most conservative liquidity measure.

Formula

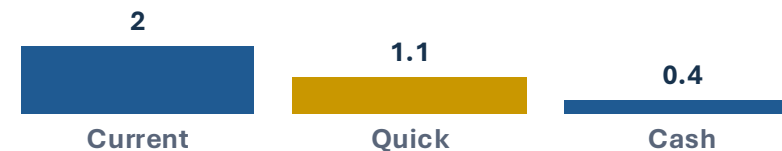
$$\text{Cash ratio} = \text{Cash and marketable securities} \div \text{Current liabilities}$$

- It considers only the most liquid assets.
- It is useful for lenders and analysts concerned with immediate payment capacity.
- A very high cash ratio may indicate underinvestment or inefficient use of assets.
- It should be interpreted with the firm's cash cycle and industry norms.

Worked example

Cash ratio = $\$80,000 \div \$200,000 = 0.40$. The firm has \$0.40 in cash for each \$1 of current liabilities. This does not necessarily mean distress if receivables are collected quickly.

Liquidity comparison



Liquidity Analysis: Combined Interpretation

Use the three liquidity ratios together, not separately.

Ratio	Value	Interpretation
Current ratio	2.00	Broad liquidity appears comfortable
Quick ratio	1.10	Still acceptable after excluding inventory
Cash ratio	0.40	Immediate cash coverage is limited

Analytical conclusion

The firm looks liquid under current and quick ratios, but cash is not abundant. Management should monitor receivable collection and inventory turnover to avoid cash pressure.

Strategic action examples

- Improve collection policy
- Reduce obsolete inventory
- Negotiate supplier payment terms
- Maintain a credit line for seasonal needs

Question for students

Would you lend short-term money to this company?
What additional information would you request?

Activity Ratios

Activity ratios measure how efficiently a firm uses assets to generate sales.

- Activity ratios focus on asset utilization and working capital management.
- They help diagnose whether assets are productive or tied up inefficiently.
- High turnover can signal efficient use of assets, but extremely high turnover may indicate shortages or lost sales.
- Key ratios: inventory turnover, receivables turnover, and total asset turnover.

1 Inventory

How fast
are goods
sold?

2 Receivables

How fast
are
customers
paying?

3 Assets

How many
sales dollars
are generated
by each asset
dollar?

Strategic link

Activity ratios affect liquidity because slow turnover ties up cash in inventory and receivables.

Inventory Turnover

Inventory turnover shows how many times inventory is sold and replaced during a period.

Formula

$$\text{Inventory turnover} = \text{Cost of goods sold} \div \text{Average inventory}$$

Input	Amount
Cost of goods sold	\$750,000
Beginning inventory	\$160,000
Ending inventory	\$200,000
Average inventory	\$180,000

Worked example

Inventory turnover = $\$750,000 \div \$180,000 = 4.17$ times. Days in inventory = $365 \div 4.17 \approx 87.5$ days.

Interpretation

Higher turnover usually means inventory is moving faster. But if turnover is too high, the firm may be understocked and lose sales.

Receivables Turnover and Days Sales Outstanding

Receivables turnover measures the speed of collecting credit sales.

Formula

Receivables turnover = Net credit sales ÷ Average accounts receivable

DSO

Days sales outstanding = 365 ÷ Receivables turnover

Input	Amount
Net credit sales	\$1,200,000
Average A/R	\$150,000

Worked example

Receivables turnover = $1,200,000 \div 150,000 = 8.0$ times. DSO = $365 \div 8.0 = 45.6$ days. Interpretation: on average, the firm collects from customers in about 46 days.

Managerial issue

If the credit policy promises 30-day payment terms but DSO is 46 days, collection management requires attention.

Total Asset Turnover

Total asset turnover measures how efficiently total assets produce sales.

Formula

Total asset turnover = Sales ÷ Average total assets

Input	Amount
Sales	\$1,250,000
Beginning assets	\$1,350,000
Ending assets	\$1,500,000
Average total assets	\$1,425,000

Worked example

Total asset turnover = $\$1,250,000 \div \$1,425,000 = 0.88$ times. The firm generates \$0.88 of sales for each \$1 invested in assets.

Interpretation

Low asset turnover may reflect excess capacity, inefficient assets, or a capital-intensive strategy. High turnover may reflect efficient operations or limited asset base.

Activity Analysis: Operational Diagnosis

Activity ratios reveal where cash is tied up in the operating cycle.

Ratio	Result	Likely implication
Inventory turnover	4.17 times	Inventory sits about 88 days
Receivables turnover	8.00 times	Collection takes about 46 days
Total asset turnover	0.88 times	Assets generate less than \$1 sales per \$1 assets

Strategic diagnosis

The firm should review inventory policy, product mix, credit terms, and capacity utilization. Better turnover can reduce external financing needs.

1 Sell faster

Inventory turnover improves.

2 Collect faster

Receivables turnover improves.

3 Finance less

Working capital need falls.

Debt Ratios

Debt ratios measure how much of the firm is financed by liabilities and whether it can service debt.

- Debt can increase shareholder returns when operations perform well, but it also increases financial risk.
- Creditors use debt ratios to assess default risk and debt capacity.
- Shareholders examine leverage because it affects ROE and volatility of earnings.
- Key ratios: debt ratio, debt-to-equity ratio, and times interest earned.

Leverage tradeoff

Using debt creates a fixed obligation. The firm must pay interest regardless of whether sales are strong or weak.

Strategic balance

Debt benefits vs financial distress risk

Debt Ratio

The debt ratio shows the proportion of assets financed by liabilities.

Formula

$$\text{Debt ratio} = \text{Total liabilities} \div \text{Total assets}$$

Input	Amount
Total liabilities	\$900,000
Total assets	\$1,700,000

Worked example

Debt ratio = $\$900,000 \div \$1,700,000 = 52.9\%$. Interpretation: about 53% of the firm's assets are financed by liabilities.

Decision implication

A rising debt ratio may indicate growth financed by borrowing, but it may also indicate increasing solvency risk.

Debt-to-Equity Ratio

Debt-to-equity compares creditor financing with owner financing.

Formula

Debt-to-equity ratio = Total liabilities ÷ Total equity

Input	Amount
Total liabilities	\$900,000
Total equity	\$800,000

Worked example

Debt-to-equity = \$900,000 ÷ \$800,000 = 1.125 times. The firm uses about \$1.13 of liabilities for each \$1 of equity.

Interpretation

Higher D/E means creditors carry more financing relative to owners. It can magnify ROE but also magnifies losses and default risk.

Times Interest Earned (TIE)

TIE measures how many times operating income covers interest expense.

Formula

Times interest earned = $\text{EBIT} \div \text{Interest expense}$

Input	Amount
EBIT	\$200,000
Interest expense	\$40,000

Worked example

$\text{TIE} = \$200,000 \div \$40,000 = 5.0$ times. Interpretation: operating income covers annual interest expense five times.

Caution

A strong TIE today does not guarantee future safety. Analysts should evaluate sales volatility, fixed costs, and refinancing risk.

Debt Analysis: Combined Interpretation

Debt analysis evaluates both leverage level and ability to pay interest.



Ratio	Result	Signal
Debt ratio	52.9%	Moderate dependence on liabilities
Debt-to-equity	1.13x	Debt slightly exceeds equity
TIE	5.0x	Interest appears covered by EBIT

Strategic interpretation

The firm may have room for debt if cash flows are stable. However, if margins fall or interest rates rise, coverage may weaken quickly.

Decision options

Limit new borrowing, refinance expensive debt, improve EBIT, or retain more earnings to reduce dependence on debt.

Profitability Ratios

Profitability ratios measure the firm's ability to generate earnings from sales, assets, and equity.

- Margins show how much of each sales dollar becomes profit at different stages.
- ROA measures how efficiently assets generate profit.
- ROE measures the return earned for shareholders.
- Profitability should be examined together with risk and efficiency.

1 Sales

Revenue
generate
d by the
business

2 Margin

Profit
retained
from each
sales
dollar

3 Assets

Resource
s used to
generate
sales

4 Equity

Owners'
capital
earning
returns

Key link

Profitability ratios are powerful only when interpreted with activity and leverage ratios. High ROE may come from strong operations or simply from high leverage.

Gross Profit Margin

Gross margin measures profit after deducting the cost of goods sold.

Formula

$$\text{Gross profit margin} = \text{Gross profit} \div \text{Sales}$$

Input	Amount
Sales	\$1,250,000
COGS	\$750,000
Gross profit	\$500,000

Worked example

Gross margin = $\$500,000 \div \$1,250,000 = 40\%$. The firm retains \$0.40 before operating expenses from each sales dollar.

Strategic interpretation

Gross margin is affected by pricing power, purchasing costs, production efficiency, product mix, and competitive pressure.

Operating Profit Margin

Operating margin measures profit from core operations before financing and taxes.

Formula

$$\text{Operating profit margin} = \text{EBIT} \div \text{Sales}$$

Input	Amount
EBIT	\$200,000
Sales	\$1,250,000

Worked example

Operating margin = $\$200,000 \div \$1,250,000 = 16\%$. For each sales dollar, \$0.16 remains after operating costs but before interest and taxes.

Why it is useful

Operating margin focuses on operations, so it allows comparison before differences in capital structure and tax situations distort the analysis.

Net Profit Margin

Net margin measures the final percentage of sales that becomes net income.

Formula

$$\text{Net profit margin} = \text{Net income} \div \text{Sales}$$

Input	Amount
Net income	\$140,000
Sales	\$1,250,000

Worked example

Net margin = $\$140,000 \div \$1,250,000 = 11.2\%$. This is the percentage of sales left for shareholders after all expenses, interest, and taxes.

Interpretation

A higher net margin can result from better pricing, lower costs, lower interest expense, lower taxes, or a combination of these factors.

Return on Assets (ROA)

ROA measures how efficiently total assets generate net income.

Formula

$$\text{ROA} = \text{Net income} \div \text{Average total assets}$$

Input	Amount
Net income	\$140,000
Beginning assets	\$1,350,000
Ending assets	\$1,500,000
Average assets	\$1,425,000

Worked example

$\text{ROA} = \$140,000 \div \$1,425,000 = 9.8\%$. The firm earns about \$0.098 for each \$1 invested in assets.

Strategic interpretation

ROA improves when margins improve, when assets are used more efficiently, or when unproductive assets are reduced.

Return on Equity (ROE)

ROE measures the rate of return earned on shareholders' equity.

Formula

$$\text{ROE} = \text{Net income} \div \text{Average common equity}$$

Input	Amount
Net income	\$140,000
Beginning equity	\$720,000
Ending equity	\$800,000
Average equity	\$760,000

Worked example

$\text{ROE} = \$140,000 \div \$760,000 = 18.4\%$. Shareholders earned about 18.4% on their average equity investment.

Caution

ROE can increase because operations improved, but it can also increase because the firm uses more debt. DuPont analysis helps separate these drivers.

Market Ratios: Connecting Accounting to Investor Valuation

Market ratios combine accounting performance with market prices.

- Market ratios are especially relevant for publicly traded companies.
- They show how investors value current earnings, book value, and growth expectations.
- Common measures include EPS, P/E ratio, and market-to-book ratio.
- Market ratios reflect expectations as well as current performance.

Example

If net income available to common shareholders is \$140,000 and average shares are 70,000, EPS = \$2.00 per share.

EPS

Earnings per share = Net income available to common shareholders ÷ Average common shares outstanding

Price-Earnings Ratio (P/E)

The P/E ratio shows how much investors are willing to pay for one dollar of earnings.

Formula

$$\text{P/E ratio} = \text{Market price per share} \div \text{Earnings per share}$$

Input	Amount
Market price per share	\$24
Earnings per share	\$2

Worked example

$$\text{P/E} = \$24 \div \$2 = 12 \text{ times. Investors pay \$12 for each \$1 of current earnings.}$$

Interpretation

A higher P/E may indicate strong growth expectations, lower perceived risk, or overvaluation. A lower P/E may indicate weak expectations, high risk, or undervaluation.

Market-to-Book Ratio

Market-to-book compares the market value of equity with its accounting book value.

Formula

Market-to-book ratio = Market value per share ÷ Book value per share

Input	Amount
Market price per share	\$24
Book value per share	\$16

Worked example

Market-to-book = $\$24 \div \$16 = 1.50$. The market values the company at 1.5 times its accounting book value per share.

Interpretation

A ratio above 1.0 often suggests that investors believe the firm has intangible value, growth opportunities, or profitability beyond book assets.

DuPont Analysis

DuPont analysis explains ROE by decomposing it into operating and financial drivers.

Three-part DuPont

$$\text{ROE} = \text{Net profit margin} \times \text{Total asset turnover} \times \text{Equity multiplier}$$

1 Margin

How much profit is earned from each sales dollar?

2 Turnover

How efficiently are assets used to generate sales?

3 Leverage

How much assets are financed relative to equity?

Driver	Ratio	Strategic meaning
Profitability	Net income ÷ Sales	Pricing and cost control
Efficiency	Sales ÷ Assets	Asset use and operating model
Leverage	Assets ÷ Equity	Financing risk and return magnification

Worked Example: ROE Decomposition

DuPont identifies why ROE changed.

Component	Value	Calculation
Net profit margin	11.2%	$\$140,000 \div \$1,250,000$
Total asset turnover	0.88x	$\$1,250,000 \div \$1,425,000$
Equity multiplier	1.875x	$\$1,425,000 \div \$760,000$
ROE	18.5%	$11.2\% \times 0.88 \times 1.875$

Interpretation

ROE is supported by a healthy net margin and significant leverage. If management wants to raise ROE without increasing risk, it should improve margin or asset turnover rather than simply add debt.

Class task

Change total asset turnover from 0.88 to 1.00 and estimate the new ROE, holding other drivers constant.

Limitations of Ratio Analysis

Ratios are useful, but they are not automatic answers.

Limitation	Why it matters	How to respond
Accounting policies differ	Ratios may not be comparable	Review notes and adjust when possible
Industry differences	Normal ratios vary by business model	Use industry-specific benchmarks
Inflation and historical cost	Asset values may be outdated	Interpret asset ratios cautiously
Seasonality	Year-end balances may not represent the year	Use averages and interim data
One-time events	Nonrecurring gains/losses distort results	Normalize earnings where appropriate

Important rule

A ratio is a starting point for questions, not the final answer. Good analysis explains causes, consequences, and decisions.

Benchmarking and Industry Averages

Benchmarking gives meaning to ratios by comparing them with relevant standards.

- Compare with the firm's own historical performance to identify improvement or deterioration.
- Compare with industry averages to evaluate whether performance is competitive.
- Compare with direct competitors when the business model is similar.
- Compare with management targets when evaluating strategic execution.

Ratio	Company	Industry	Initial signal
Current ratio	1.7	2.1	Below industry liquidity
Inventory turnover	4.2x	6.5x	Inventory slower than peers
Net margin	11.2%	8.0%	Profitability stronger than peers
Debt ratio	52.9%	45.0%	Leverage above peers

Interpretation

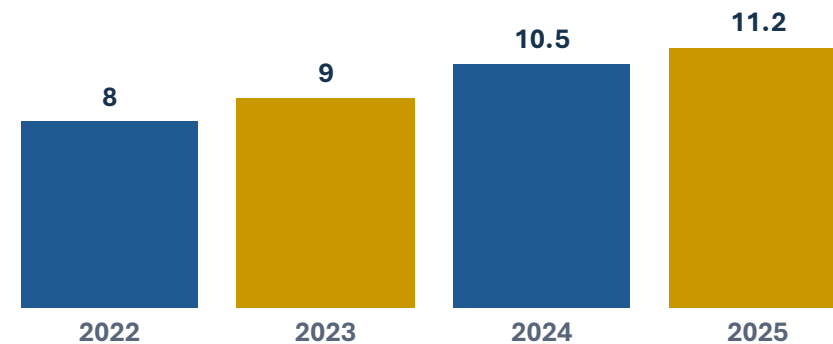
This company may have strong margins, but weak inventory efficiency and higher leverage. Strategy should protect margins while improving working capital and managing debt risk.

Trend Analysis

Trend analysis studies multi-year patterns rather than one-year snapshots.

Year	Sales growth	Net margin	Debt ratio
2022	—	8.0%	42%
2023	10%	9.0%	45%
2024	15%	10.5%	49%
2025	25%	11.2%	53%

Net margin trend (%)



Interpretation

The firm is growing and margins are improving, but leverage is also rising. Management should ask whether growth is being financed sustainably.

Financial Forecasting and Long-Term Planning

Forecasting translates strategy into expected financial statements and financing needs.

1 Sales forecast

Estimate future sales based on strategy, market demand, and capacity.

2 Cost forecast

Apply expected cost behavior and margin assumptions.

3 Asset forecast

Estimate assets required to support sales.

4 Financing forecast

Compare required assets with available liabilities and equity.

Sales forecast method

Many accounts are forecast as a percentage of sales when they vary naturally with sales: COGS, receivables, inventory, payables, and some operating expenses.

Strategic purpose

Forecasting tests whether the growth plan is financially feasible before management commits to expansion, borrowing, or new investment.

Pro Forma Statements and External Financing Needed

Pro forma statements estimate future profitability and financing gaps.

Pro forma income statement	Assumption	Forecast
Sales	Given	\$2,300,000
COGS	60% of sales	\$1,380,000
Operating expenses	25% of sales	\$575,000
EBIT	Sales – COGS – OpEx	\$345,000
Interest	Given	\$45,000
Tax	30% of EBT	\$90,000
Net income	EBT – tax	\$210,000

Pro forma balance sheet summary	Forecast
Total assets required	\$1,701,000
Total liabilities + equity available	\$1,541,000
External financing needed	\$160,000

Interpretation

The plan requires \$160,000 of external financing unless management reduces asset needs, increases retained earnings, raises equity, borrows, or slows growth.

Mini-Case, Strategic Interpretation, and Assignment

The final product of financial analysis is a defensible recommendation.

Selected data: Delta Retail Co.	2024	2025
Sales	\$2,000,000	\$2,300,000
Net income	\$140,000	\$160,000
Current assets	\$520,000	\$590,000
Current liabilities	\$260,000	\$340,000
Inventory	\$220,000	\$300,000
Total assets	\$1,400,000	\$1,700,000
Total liabilities	\$630,000	\$900,000
Equity	\$770,000	\$800,000

Required case assignment

Prepare a one-page diagnostic memo. Include: ratio table, trend interpretation, main financial risk, strategic recommendation, and one limitation of the analysis.

Lecture summary

Financial analysis links statements to valuation and planning. Ratios diagnose liquidity, efficiency, leverage, profitability, and market perception. Forecasting and pro forma statements test whether strategy can be financed.

Strategic recommendation examples

Improve working capital, protect margins, manage leverage, align growth with financing capacity, and benchmark against comparable firms.

Solved MCQ 1

Read the question, select the best answer, then review the solution explanation.

Which tool compares the same financial statement item across two or more periods?

- ☐ A Vertical analysis
- ☒ B Horizontal analysis
- ☐ C Market-to-book analysis
- ☐ D Cash ratio analysis

Correct answer: B

Solution: Horizontal analysis studies changes over time by comparing current and base-period amounts.

Solved MCQ 2

Read the question, select the best answer, then review the solution explanation.

In a common-size income statement, each item is usually expressed as a percentage of:

- ☐ A Total assets
- ☐ B Total liabilities
- ☒ C Sales
- ☐ D Common equity

Correct answer: C

Solution: Income statement common-size analysis uses sales as the base.

Solved MCQ 3

Read the question, select the best answer, then review the solution explanation.

A company has current assets of \$500,000 and current liabilities of \$250,000. Its current ratio is:

- ☐ A 0.50 times
- ☐ B 1.25 times
- ☒ C 2.00 times
- ☐ D 4.00 times

Correct answer: C

Solution: Current ratio = $500,000 / 250,000 = 2.00$ times.

Solved MCQ 4

Read the question, select the best answer, then review the solution explanation.

Which ratio is the most conservative measure of liquidity?

- ☐ A Current ratio
- ☐ B Quick ratio
- ☒ C Cash ratio
- ☐ D Total asset turnover

Correct answer: C

Solution: The cash ratio includes only cash and cash equivalents or marketable securities in the numerator.

Solved MCQ 5

Read the question, select the best answer, then review the solution explanation.

Inventory turnover is primarily used to evaluate:

- ☒ A How quickly inventory is sold and replaced
- ☐ B How much debt the firm uses
- ☐ C How investors price earnings
- ☐ D How much profit remains after taxes

Correct answer: A

Solution: Inventory turnover measures how many times inventory is sold and replaced during the period.

Solved MCQ 6

Read the question, select the best answer, then review the solution explanation.

If EBIT is \$300,000 and interest expense is \$60,000, times interest earned equals:

- ☐ A 0.20 times
- ☐ B 2.00 times
- ☒ C 5.00 times
- ☐ D 20.00 times

Correct answer: C

Solution: $TIE = EBIT / \text{interest expense} = 300,000 / 60,000 = 5.00 \text{ times.}$

Solved MCQ 7

Read the question, select the best answer, then review the solution explanation.

Which ratio measures the percentage of sales that becomes net income?

- ☐ A Gross profit margin
- ☒ B Net profit margin
- ☐ C Debt ratio
- ☐ D Receivables turnover

Correct answer: B

Solution: Net profit margin = net income / sales.

Solved MCQ 8

Read the question, select the best answer, then review the solution explanation.

In the three-part DuPont model, ROE is decomposed into:

- ☐ A Current ratio, quick ratio, cash ratio
- ☐ B Debt ratio, debt-to-equity, TIE
- ☒ C Net profit margin, total asset turnover, equity multiplier
- ☐ D EPS, P/E, market-to-book

Correct answer: C

Solution: Three-part DuPont is $ROE = \text{net profit margin} \times \text{total asset turnover} \times \text{equity multiplier}$.

Solved MCQ 9

Read the question, select the best answer, then review the solution explanation.

If forecast sales are \$2,000,000 and COGS is expected to be 60% of sales, forecast COGS equals:

- ☐ A \$800,000
- ☐ B \$1,000,000
- ☒ C \$1,200,000
- ☐ D \$2,600,000

Correct answer: C

Solution: Forecast COGS = $0.60 \times 2,000,000 = 1,200,000$.

Solved MCQ 10

Read the question, select the best answer, then review the solution explanation.

External financing needed exists when forecasted:

- ☒ **A** Assets exceed available liabilities and equity
- ☐ **B** Net income exceeds dividends
- ☐ **C** Sales exceed cost of goods sold
- ☐ **D** Market value exceeds book value

Correct answer: A

Solution: EFN is the financing gap when required assets are greater than projected liabilities and equity available to finance them.

Solved MCQ 11

Read the question, select the best answer, then review the solution explanation.

A firm's sales increased from \$800,000 to \$1,000,000. The horizontal analysis percentage change is:

- ☐ A 20.0%
- ☒ B 25.0%
- ☐ C 80.0%
- ☐ D 125.0%

Correct answer: B

Solution: Percentage change = $(1,000,000 - 800,000) / 800,000 = 25\%$.

Solved MCQ 12

Read the question, select the best answer, then review the solution explanation.

If cash is \$40,000, marketable securities are \$30,000, receivables are \$90,000, inventory is \$120,000, and current liabilities are \$140,000, the quick ratio is:

- ☐ A 0.50 times
- ☒ B 1.14 times
- ☐ C 2.00 times
- ☐ D 2.86 times

Correct answer: B

Solution: Quick ratio = (cash + marketable securities + receivables) / current liabilities =
 $(40,000 + 30,000 + 90,000) / 140,000 = 1.14$ times.

Solved MCQ 13

Read the question, select the best answer, then review the solution explanation.

A decline in inventory turnover may indicate:

- ☐ A Faster inventory movement
- ☒ B Inventory is moving more slowly or becoming excessive
- ☐ C Lower reliance on debt
- ☐ D Higher market valuation

Correct answer: B

Solution: Inventory turnover falls when inventory is large relative to COGS; this can signal slow-moving inventory or weak demand.

Solved MCQ 14

Read the question, select the best answer, then review the solution explanation.

Receivables turnover is calculated as:

- ☒ A Credit sales / accounts receivable
- ☐ B Accounts receivable / credit sales
- ☐ C COGS / inventory
- ☐ D Net income / total assets

Correct answer: A

Solution: Receivables turnover measures how many times receivables are collected during the period.

Solved MCQ 15

Read the question, select the best answer, then review the solution explanation.

A debt ratio of 60% means that:

- ☒ A 60% of assets are financed by liabilities
- ☐ B 60% of sales become profit
- ☐ C 60% of liabilities are current liabilities
- ☐ D 60% of equity is retained earnings

Correct answer: A

Solution: Debt ratio = total liabilities / total assets; it shows the proportion of assets financed by creditors.

Solved MCQ 16

Read the question, select the best answer, then review the solution explanation.

If net income is \$120,000, sales are \$1,500,000, and total assets are \$900,000, ROA equals:

- ☐ A 8.0%
- ☒ B 13.3%
- ☐ C 15.0%
- ☐ D 75.0%

Correct answer: B

Solution: $\text{ROA} = \text{net income} / \text{total assets} = 120,000 / 900,000 = 13.3\%$.

Solved MCQ 17

Read the question, select the best answer, then review the solution explanation.

If a company has net income of \$200,000 and 50,000 common shares outstanding, EPS is:

- ☐ A \$0.25
- ☐ B \$2.50
- ☒ C \$4.00
- ☐ D \$250.00

Correct answer: C

Solution: $\text{EPS} = \text{net income available to common shareholders} / \text{common shares outstanding} = 200,000 / 50,000 = \$4.00.$

Solved MCQ 18

Read the question, select the best answer, then review the solution explanation.

A high P/E ratio usually suggests that investors expect:

- ☐ A No future growth
- ☒ B Higher future growth or lower perceived risk
- ☐ C Immediate bankruptcy
- ☐ D Lower sales only

Correct answer: B

Solution: P/E reflects how much investors pay for each dollar of earnings; high values often reflect growth expectations or lower risk perceptions.

Solved MCQ 19

Read the question, select the best answer, then review the solution explanation.

Under the percentage-of-sales method, which account is most likely to vary directly with sales?

- ☒ A Inventory
- ☐ B Long-term bonds payable
- ☐ C Common stock par value
- ☐ D Patent amortization policy

Correct answer: A

Solution: Inventory often changes with sales because more sales require more goods available for sale.

Solved MCQ 20

Read the question, select the best answer, then review the solution explanation.

Which statement best describes the strategic role of financial analysis?

- ☐ A It replaces managerial judgment
- ☒ B It converts financial data into evidence for operating, investing, and financing decisions
- ☐ C It guarantees future profits
- ☐ D It focuses only on accounting compliance

Correct answer: B

Solution: Financial analysis supports judgment by turning data into evidence; it does not replace strategy or guarantee outcomes.

Core textbook and lecture source

- **Melicher, R. W., & Norton, E. A. Introduction to Finance: Markets, Investments, and Financial Management.**
- **Lecture materials: Financial Analysis, Long-Term Planning, and Strategic Decisions — Merged Teaching Version.**
- **Analytical examples and solved MCQs are adapted from the provided lecture file for instructional use.**



Financial Analysis, Long-Term Planning, and Strategic Decisions

Thank You