

FINANCIAL STATEMENT ANALYSIS

Analytical Methods, Solvency, Profitability and Investment Evaluation

Dr Abenet Yohannes, Ph.D.

Chapter Introduction

Financial statements contain large amounts of accounting information. Financial-statement analysis converts this information into evidence about:

- Financial position
- Operating performance
- Liquidity
- Solvency
- Profitability
- Efficiency
- Investment return
- Financial risk

Why Financial Analysis Matters

A reported profit alone does not explain whether a business is:

- Financially stable
- Efficiently managed
- Able to pay its debts
- Generating an adequate return
- Improving over time
- Performing better than competitors
- Using its assets effectively

Opening Business Case

A company reports net income of ETB 10 million.

Questions

- Is ETB 10 million a strong result?
- How much capital was required to earn it?
- Did sales increase or decrease?
- Can the company pay its obligations?
- How does its performance compare with last year?
- How does it compare with similar companies?

Key Message

A financial amount has limited meaning when examined by itself.

Central Accounting Question

How can financial-statement information be converted into meaningful conclusions about a company's liquidity, solvency, profitability, efficiency and investment performance?

Learning Objectives

By the end of this chapter, students will be able to:

1. Explain the purpose of financial-statement analysis.
2. Identify users and sources of financial information.
3. Apply horizontal analysis.
4. Apply vertical analysis.
5. Prepare common-size statements.
6. Evaluate short-term liquidity.
7. Analyze accounts receivable.
8. Analyze inventory.
9. Evaluate long-term solvency.
10. Evaluate profitability.
11. Calculate investor-related ratios.
12. Interpret corporate annual reports.
13. Recognize limitations of financial analysis.
14. Prepare an integrated financial assessment.

Chapter Roadmap

1. Nature of financial analysis
2. Sources of analytical information
3. Horizontal analysis
4. Trend analysis
5. Vertical analysis
6. Common-size statements
7. Liquidity and solvency analysis
8. Receivables analysis
9. Inventory analysis
10. Long-term solvency
11. Profitability analysis
12. Investor ratios
13. Annual-report analysis
14. Limitations and integrated interpretation

Opening Reflection

Two companies each report net income of ETB 5 million.

Company A

- Total assets: ETB 25 million
- Equity: ETB 15 million

Company B

- Total assets: ETB 100 million
- Equity: ETB 70 million

Question

Did the companies perform equally well?

Answer

Not necessarily. Their returns relative to assets and equity are very different.

SECTION 1

Nature of Financial-Statement Analysis

Purpose, questions and users of analysis

What Is Financial-Statement Analysis?

Financial-statement analysis is the systematic examination of financial information to evaluate:

- Relationships
- Changes
- Trends
- Strengths
- Weaknesses
- Risks
- Operating results

Main Analytical Questions

Financial analysis seeks to answer:

- Is the company growing?
- Can it pay current obligations?
- Can it service long-term debt?
- Are receivables collected efficiently?
- Is inventory moving efficiently?
- Are assets generating adequate sales?
- Is the company earning satisfactory returns?
- Are stockholders receiving appropriate benefits?

Major Users of Financial Analysis

Internal Users

- Management
- Board of directors
- Department heads
- Internal auditors
- Finance staff

External Users

- Investors
- Banks
- Suppliers
- Employees
- Regulators
- Tax authorities
- Donors and funding partners

Management Perspective

Management uses financial analysis to:

- Evaluate performance
- Control costs
- Improve working capital
- Plan financing
- Allocate resources
- Set targets
- Identify operational problems
- Compare departments or segments

Investor Perspective

Investors are interested in:

- Profitability
- Growth
- Earnings per share
- Dividend return
- Market valuation
- Financial risk
- Capital appreciation
- Management effectiveness

Lender Perspective

Banks and other lenders focus on:

- Liquidity
- Cash-flow capacity
- Debt levels
- Interest coverage
- Security for loans
- Repayment history
- Stability of earnings
- Compliance with loan conditions

Supplier Perspective

Suppliers may analyze whether the customer can:

- Pay invoices on time
- Maintain sufficient working capital
- Continue operating
- Manage inventory effectively
- Avoid excessive borrowing

Employee Perspective

Employees may be interested in:

- Financial stability
- Job security
- Growth potential
- Ability to pay salaries
- Pension sustainability
- Performance-based compensation
- Long-term organizational continuity

SECTION 2

Sources of Financial Information

Statements, notes and comparative benchmarks

Primary Financial Statements

The main analytical sources are:

1. Income Statement
2. Balance Sheet
3. Statement of Cash Flows
4. Statement of Stockholders' Equity
5. Statement of Retained Earnings

Income-Statement Information

The Income Statement provides information about:

- Sales or revenue
- Cost of sales
- Gross profit
- Operating expenses
- Operating income
- Interest expense
- Income tax
- Net income

Balance-Sheet Information

The Balance Sheet provides information about:

- Liquidity
- Asset structure
- Working capital
- Debt
- Capital structure
- Equity
- Long-term investment
- Financial position at a specific date

Statement-of-Cash-Flows Information

The Statement of Cash Flows explains cash generated or used by:

- Operating activities
- Investing activities
- Financing activities

It helps users assess whether reported profit is supported by cash generation.

Notes to Financial Statements

Notes may provide information about:

- Accounting policies
- Debt maturity
- Inventory methods
- Contingencies
- Related-party transactions
- Asset commitments
- Segment information
- Significant estimates

Comparative Information

Financial analysis is strengthened by comparing the company with:

- Prior periods
- Budgets
- Competitors
- Industry averages
- Management targets
- Loan requirements
- Economic benchmarks

Types of Comparison

Intracompany Comparison

The same company across different periods or divisions.

Intercompany Comparison

One company compared with another.

Industry Comparison

The company compared with industry averages or standards.

Analytical Methods

The principal methods include:

1. Horizontal analysis
2. Vertical analysis
3. Common-size statements
4. Ratio analysis

Horizontal analysis studies change over time, while vertical analysis studies relationships within one statement or reporting period.

SECTION 3

Horizontal Analysis

Measuring change between accounting periods

What Is Horizontal Analysis?

Horizontal analysis compares financial-statement items across two or more accounting periods. It identifies:

- Amount increases
- Amount decreases
- Percentage increases
- Percentage decreases
- Long-term trends

Horizontal-Analysis Formula

Amount of Change

$$\text{Amount of Change} = \text{Current-Year Amount} - \text{Base-Year Amount}$$

Percentage Change

$$\text{Percentage Change} = (\text{Amount of Change} \div \text{Base-Year Amount}) \times 100$$

Comparative Balance-Sheet Data

Jigjiga Retail Share Company

Item	2025	2026
Cash	ETB 150,000	ETB 180,000
Accounts Receivable	300,000	360,000
Inventory	400,000	480,000
Prepaid Expenses	50,000	60,000
Fixed Assets, Net	1,600,000	1,920,000
Total Assets	2,500,000	3,000,000

Horizontal Analysis of Cash

Amount Increase

$$180,000 - 150,000 = \text{ETB } 30,000$$

Percentage Increase

$$(30,000 \div 150,000) \times 100 = 20\%$$

Horizontal Analysis of Receivables

$$\begin{aligned} 360,000 - 300,000 &= \text{ETB } 60,000 \\ (60,000 \div 300,000) \times 100 &= 20\% \end{aligned}$$

Accounts Receivable increased by ETB 60,000, or 20%.

Horizontal Analysis of Inventory

$$\begin{aligned} 480,000 - 400,000 &= \text{ETB } 80,000 \\ (80,000 \div 400,000) \times 100 &= 20\% \end{aligned}$$

Inventory increased by ETB 80,000, or 20%.

Horizontal Balance-Sheet Analysis

Item	2025	2026	Change	%
Cash	150,000	180,000	30,000	20%
Accounts Receivable	300,000	360,000	60,000	20%
Inventory	400,000	480,000	80,000	20%
Prepaid Expenses	50,000	60,000	10,000	20%
Fixed Assets, Net	1,600,000	1,920,000	320,000	20%
Total Assets	2,500,000	3,000,000	500,000	20%

Comparative Liability and Equity Data

Item	2025	2026
Current Liabilities	ETB 500,000	ETB 600,000
Long-Term Liabilities	800,000	900,000
Stockholders' Equity	1,200,000	1,500,000
Total Liabilities and Equity	2,500,000	3,000,000

Horizontal Liability Analysis

Current Liabilities

$$\begin{aligned} 600,000 - 500,000 &= \text{ETB } 100,000 \\ (100,000 \div 500,000) \times 100 &= 20\% \end{aligned}$$

Long-Term Liabilities

$$\begin{aligned} 900,000 - 800,000 &= \text{ETB } 100,000 \\ (100,000 \div 800,000) \times 100 &= 12.5\% \end{aligned}$$

Horizontal Equity Analysis

$$\begin{aligned} 1,500,000 - 1,200,000 &= \text{ETB } 300,000 \\ (300,000 \div 1,200,000) \times 100 &= 25\% \end{aligned}$$

Stockholders' equity increased faster than long-term liabilities.

Comparative Income-Statement Data

Item	2025	2026
Net Sales	ETB 4,000,000	ETB 4,800,000
Cost of Merchandise Sold	2,600,000	3,120,000
Gross Profit	1,400,000	1,680,000
Operating Expenses	840,000	1,000,000
Income from Operations	560,000	680,000
Interest Expense	100,000	120,000
Income before Tax	460,000	560,000
Income Tax	138,000	168,000
Net Income	322,000	392,000

Horizontal Analysis of Sales

$$\begin{aligned} 4,800,000 - 4,000,000 &= \text{ETB } 800,000 \\ (800,000 \div 4,000,000) \times 100 &= 20\% \end{aligned}$$

Net sales increased by 20%.

Horizontal Analysis of Gross Profit

$$\begin{aligned} 1,680,000 - 1,400,000 &= \text{ETB } 280,000 \\ (280,000 \div 1,400,000) \times 100 &= 20\% \end{aligned}$$

Gross profit increased at the same rate as sales.

Horizontal Analysis of Operating Expenses

$$\begin{aligned} 1,000,000 - 840,000 &= \text{ETB } 160,000 \\ (160,000 \div 840,000) \times 100 &\approx 19.05\% \end{aligned}$$

Operating expenses increased slightly more slowly than sales.

Horizontal Analysis of Net Income

$$\begin{aligned} 392,000 - 322,000 &= \text{ETB } 70,000 \\ (70,000 \div 322,000) \times 100 &\approx 21.74\% \end{aligned}$$

Net income grew faster than sales.

Interpretation of Horizontal Results

The analysis indicates that:

- Sales increased by 20%.
- Gross profit increased by 20%.
- Operating expenses increased by approximately 19.05%.
- Net income increased by approximately 21.74%.
- Equity increased by 25%.
- Long-term debt increased by 12.5%.

Preliminary Conclusion

Growth appears profitable, but further liquidity and efficiency analysis is required.

Decrease Example

Advertising expense decreased from ETB 200,000 to ETB 170,000.

Amount Decrease

$$170,000 - 200,000 = - \text{ETB } 30,000$$

Percentage Decrease

$$(-30,000 \div 200,000) \times 100 = -15\%$$

When the Base Amount Is Zero

Percentage change cannot be meaningfully calculated when the base-year amount is zero.

Example

- Prior-year loss: ETB 0
- Current-year loss: ETB 50,000

The ETB 50,000 change can be reported, but a conventional percentage change is not meaningful.

SECTION 4

Trend Analysis

Comparing several years against a base year

What Is Trend Analysis?

Trend analysis expresses multiple years relative to a selected base year. The base year is assigned 100%, and each later year is expressed as a percentage of the base year.

$$\text{Base Year} = 100\%$$

Trend-Percentage Formula

$$\text{Trend Percentage} = \left(\frac{\text{Current-Year Amount}}{\text{Base-Year Amount}} \right) \times 100$$

Five-Year Sales Data

Year	Net Sales
2022	ETB 3,000,000
2023	3,300,000
2024	3,600,000
2025	4,000,000
2026	4,800,000

Use 2022 as the base year.

Sales Trend Percentages

Year	Calculation	Trend
2022	$3,000,000 \div 3,000,000$	100%
2023	$3,300,000 \div 3,000,000$	110%
2024	$3,600,000 \div 3,000,000$	120%
2025	$4,000,000 \div 3,000,000$	133.33%
2026	$4,800,000 \div 3,000,000$	160%

Trend Interpretation

The 160% trend percentage means that 2026 sales are:

- 160% of 2022 sales, or
- 60% higher than the base-year amount

It does not mean sales increased by 160%.

Comparing Sales and Profit Trends

Year	Sales Trend	Net-Income Trend
2022	100%	100%
2023	110%	108%
2024	120%	116%
2025	133%	125%
2026	160%	152%

Interpretation

Profit increased substantially, but slightly less rapidly than sales over the full period.

SECTION 5

Vertical Analysis

Expressing items as percentages of a base amount

What Is Vertical Analysis?

Vertical analysis expresses each item in a financial statement as a percentage of a selected base amount.

Income Statement Base

$$\text{Net Sales} = 100\%$$

Balance Sheet Base

$$\text{Total Assets} = 100\%$$

Vertical analysis and common-size statements reveal proportional relationships within the statements.

Vertical-Analysis Formula

$$\text{Component Percentage} = (\text{Individual Item} \div \text{Base Amount}) \times 100$$

Vertical Income-Statement Analysis

2026 net sales:

ETB 4,800,000

Each income-statement item will be divided by ETB 4,800,000.

Cost-of-Sales Percentage

$$(3,120,000 \div 4,800,000) \times 100 = 65\%$$

This means 65 cents of each ETB 1 of sales was used to cover merchandise cost.

Gross-Profit Percentage

$$(1,680,000 \div 4,800,000) \times 100 = 35\%$$

Alternatively:

$$100\% - 65\% = 35\%$$

Operating-Expense Percentage

$$(1,000,000 \div 4,800,000) \times 100 \approx 20.83\%$$

Operating-Income Percentage

$$(680,000 \div 4,800,000) \times 100 \approx 14.17\%$$

Net-Profit Percentage

$$(392,000 \div 4,800,000) \times 100 \approx 8.17\%$$

Approximately ETB 0.0817 of each ETB 1 of sales remains as net income.

Common-Size Income Statement

Item	ETB	% of Sales
Net Sales	4,800,000	100.00%
Cost of Merchandise Sold	(3,120,000)	65.00%
Gross Profit	1,680,000	35.00%
Operating Expenses	(1,000,000)	20.83%
Income from Operations	680,000	14.17%
Interest Expense	(120,000)	2.50%
Income Tax	(168,000)	3.50%
Net Income	392,000	8.17%

Comparative Vertical Analysis

Item	2025	2026
Net Sales	100.00%	100.00%
Cost of Merchandise Sold	65.00%	65.00%
Gross Profit	35.00%	35.00%
Operating Expenses	21.00%	20.83%
Income from Operations	14.00%	14.17%
Net Income	8.05%	8.17%

Income-Statement Interpretation

The comparative common-size statements indicate that:

- Gross margin remained stable.
- Operating-expense percentage improved slightly.
- Operating margin improved slightly.
- Net-profit percentage increased slightly.

Vertical Balance-Sheet Analysis

2026 total assets:

ETB 3,000,000

Each asset is divided by ETB 3,000,000.

Cash Percentage

$$(180,000 \div 3,000,000) \times 100 = 6\%$$

Receivables Percentage

$$(360,000 \div 3,000,000) \times 100 = 12\%$$

Inventory Percentage

$$(480,000 \div 3,000,000) \times 100 = 16\%$$

Fixed-Asset Percentage

$$(1,920,000 \div 3,000,000) \times 100 = 64\%$$

Common-Size Balance Sheet

Assets	ETB	%
Cash	180,000	6%
Accounts Receivable	360,000	12%
Inventory	480,000	16%
Prepaid Expenses	60,000	2%
Fixed Assets, Net	1,920,000	64%
Total Assets	3,000,000	100%

Financing Structure

Liabilities and Equity	ETB	%
Current Liabilities	600,000	20%
Long-Term Liabilities	900,000	30%
Stockholders' Equity	1,500,000	50%
Total	3,000,000	100%

Vertical Balance-Sheet Interpretation

The company finances its assets through:

- 20% current liabilities
- 30% long-term liabilities
- 50% stockholders' equity

Total Debt Financing = 50%

Equity Financing = 50%

SECTION 6

Common-Size Statements

Comparing organizations of different sizes

Purpose of Common-Size Statements

Common-size statements help users compare organizations of different sizes.

Example

- Company A sales: ETB 5 million
- Company B sales: ETB 500 million

Absolute amounts are very different, but percentage margins may still be compared.

Intercompany Comparison

Item	Company A	Company B
Cost of Sales	65%	72%
Gross Profit	35%	28%
Operating Expenses	21%	17%
Operating Income	14%	11%
Net Income	8%	6%

Interpretation

Company A reports stronger gross and net profit percentages.

Classroom Activity

Prepare a vertical analysis using:

- Sales: ETB 2,000,000
- Cost of sales: ETB 1,300,000
- Operating expenses: ETB 400,000
- Interest expense: ETB 50,000
- Income tax: ETB 75,000

Required

- Gross-profit percentage
- Operating-expense percentage
- Net-profit percentage

Activity Solution

Gross Profit

$$\begin{aligned} 2,000,000 - 1,300,000 &= \text{ETB } 700,000 \\ (700,000 \div 2,000,000) \times 100 &= 35\% \end{aligned}$$

Operating Expenses

$$(400,000 \div 2,000,000) \times 100 = 20\%$$

Net Income

$$\begin{aligned} 700,000 - 400,000 - 50,000 - 75,000 &= \text{ETB } 175,000 \\ (175,000 \div 2,000,000) \times 100 &= 8.75\% \end{aligned}$$

SECTION 7

Liquidity and Solvency Analysis

Working capital, current ratio and quick ratio

Liquidity and Solvency

Liquidity

The ability to convert assets into cash and meet short-term obligations.

Solvency

The ability to meet debts and remain financially viable over the long term.

The textbook assesses liquidity and solvency through working capital, current and quick ratios, receivables and inventory measures, long-term asset coverage, leverage and interest coverage.

Current-Position Analysis

Current-position analysis commonly includes:

- Working capital
- Current ratio
- Quick ratio

These measures evaluate short-term financial capacity.

Working Capital

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

Working-Capital Calculation

2026 current assets:

$$180,000 + 360,000 + 480,000 + 60,000 = \text{ETB } 1,080,000$$

Current liabilities: ETB 600,000

Working Capital

$$1,080,000 - 600,000 = \text{ETB } 480,000$$

Comparative Working Capital

2025

$$900,000 - 500,000 = \text{ETB } 400,000$$

2026

$$1,080,000 - 600,000 = \text{ETB } 480,000$$

Change

$$480,000 - 400,000 = \text{ETB } 80,000$$

Working-Capital Interpretation

Positive working capital means current assets exceed current liabilities. However, the amount should be evaluated with:

- Business size
- Industry requirements
- Quality of receivables
- Inventory liquidity
- Seasonal needs
- Cash-flow patterns

Current Ratio

$$\text{Current Ratio} = \text{Current Assets} \div \text{Current Liabilities}$$

Current-Ratio Calculation

2026

$$1,080,000 \div 600,000 = 1.80$$

Interpretation

The company reports ETB 1.80 of current assets for every ETB 1 of current liabilities.

Comparative Current Ratio

2025

$$900,000 \div 500,000 = 1.80$$

2026

$$1,080,000 \div 600,000 = 1.80$$

Working capital increased, but the proportional short-term position remained unchanged.

Quick Assets

Normally Include

- Cash
- Short-term investments
- Accounts receivable

Exclude

- Inventory
- Supplies
- Prepaid expenses

Quick Ratio

$$\text{Quick Ratio} = \frac{\text{Cash} + \text{Short-Term Investments} + \text{Receivables}}{\text{Current Liabilities}}$$

Quick-Ratio Calculation

$$\begin{aligned} & (180,000 + 360,000) \div 600,000 \\ & 540,000 \div 600,000 = 0.90 \end{aligned}$$

The company has ETB 0.90 of quick assets for each ETB 1 of current liabilities.

Current Ratio versus Quick Ratio

Measure	Result
Current Ratio	1.80
Quick Ratio	0.90

Interpretation

A significant portion of current assets consists of inventory and prepaid expenses.

SECTION 8

Accounts Receivable Analysis

Turnover and collection period

Why Analyze Receivables?

A high receivable balance may indicate:

- Increased credit sales
- Slow collection
- Weak credit control
- Customer financial difficulty
- Greater bad-debt risk

Receivables should be evaluated relative to sales and collection time.

Average Accounts Receivable

$$\begin{aligned}\text{Average Accounts Receivable} &= (\text{Beginning Receivables} + \text{Ending} \\ &\quad \text{Receivables}) \div 2 \\ (300,000 + 360,000) \div 2 &= \text{ETB } 330,000\end{aligned}$$

Accounts Receivable Turnover

$$\text{Accounts Receivable Turnover} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$$

When credit-sales data are unavailable, net sales may be used cautiously as an approximation.

Receivables-Turnover Calculation

Assume all ETB 4,800,000 of sales are credit sales.

$$4,800,000 \div 330,000 \approx 14.55 \text{ times}$$

Turnover Interpretation

An Accounts Receivable Turnover of 14.55 means the average receivable balance was collected approximately 14.55 times during the year.

A higher turnover may indicate:

- Faster collection
- Strong credit control
- More restrictive credit policy

Number of Days' Sales in Receivables

$$\text{Days' Sales in Receivables} = 365 \div \text{Accounts Receivable Turnover}$$

Receivable-Days Calculation

$$365 \div 14.55 \approx 25.1 \text{ days}$$

The average receivable remains outstanding for approximately 25 days.

Receivable-Days Interpretation

If the company's normal credit term is 30 days, an average collection period of approximately 25 days may indicate timely collection.

Interpretation should also consider:

- Overdue accounts
- Customer concentration
- Bad-debt allowance
- Seasonal sales
- Credit-policy changes

SECTION 9

Inventory Analysis

Turnover and days' sales in inventory

Why Analyze Inventory?

Excess Inventory May Cause

- Storage costs
- Damage
- Obsolescence
- Expiration
- Insurance costs
- Cash-flow pressure

Insufficient Inventory May Cause

- Lost sales
- Production interruption
- Customer dissatisfaction

Average Inventory

$$\begin{aligned}\text{Average Inventory} &= (\text{Beginning Inventory} + \text{Ending Inventory}) \div 2 \\ &= (400,000 + 480,000) \div 2 = \text{ETB } 440,000\end{aligned}$$

Inventory Turnover

$$\text{Inventory Turnover} = \text{Cost of Merchandise Sold} \div \text{Average Inventory}$$

Inventory-Turnover Calculation

$$3,120,000 \div 440,000 \approx 7.09 \text{ times}$$

The company sells and replaces its average inventory approximately 7.09 times per year.

Days' Sales in Inventory

$$\begin{aligned}\text{Days' Sales in Inventory} &= 365 \div \text{Inventory Turnover} \\ 365 \div 7.09 &\approx 51.5 \text{ days}\end{aligned}$$

Inventory Interpretation

The company holds approximately 52 days of inventory. Whether this is strong or weak depends on:

- Product type
- Industry
- Supply reliability
- Expiration risk
- Sales seasonality
- Customer demand
- Inventory policy

SECTION 10

Long-Term Solvency Analysis

Asset coverage, leverage and interest coverage

Fixed Assets to Long-Term Liabilities

$$\text{Ratio of Fixed Assets to Long-Term Liabilities} = \frac{\text{Net Fixed Assets}}{\text{Long-Term Liabilities}}$$

This ratio considers the relationship between long-term operating assets and long-term debt.

Fixed-Asset Coverage Calculation

$$1,920,000 \div 900,000 \approx 2.13$$

The company has approximately ETB 2.13 of net fixed assets for every ETB 1 of long-term liabilities.

Liabilities to Stockholders' Equity

$$\text{Liabilities-to-Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

Liabilities-to-Equity Calculation

Total liabilities:

$$600,000 + 900,000 = \text{ETB } 1,500,000$$

Equity: ETB 1,500,000

$$1,500,000 \div 1,500,000 = 1.00$$

Leverage Interpretation

A ratio of 1.00 means:

- Creditors provide ETB 1 of financing for every ETB 1 provided by stockholders.
- Total financing is divided equally between liabilities and equity.

A higher ratio generally indicates greater financial leverage and creditor risk.

Times Interest Earned

$$\text{Times Interest Earned} = \frac{(\text{Income before Income Tax} + \text{Interest Expense})}{\text{Interest Expense}}$$

The numerator represents income before interest and income tax.

Interest-Coverage Calculation

$$\begin{aligned} & (560,000 + 120,000) \div 120,000 \\ 680,000 \div 120,000 & \approx 5.67 \text{ times} \end{aligned}$$

Interest-Coverage Interpretation

The company's earnings before interest and tax cover interest expense approximately 5.67 times. Interpretation should consider:

- Stability of earnings
- Cash-flow generation
- Debt maturity
- Interest-rate exposure
- Industry standards
- Future borrowing requirements

SECTION 11

Profitability Analysis

Returns on sales, assets, equity and investment

Purpose of Profitability Analysis

Profitability analysis evaluates the company's ability to generate returns from:

- Sales
- Assets
- Stockholders' equity
- Common stockholders' investment

The Warren, Reeve and Duchac framework includes sales-to-assets, return on total assets, return on total equity, return on common equity, earnings per share, price-earnings ratio and dividend measures.

Ratio of Net Sales to Assets

$$\text{Ratio of Net Sales to Assets} = \text{Net Sales} \div \text{Average Total Assets}$$

This ratio is also called total asset turnover.

Average Total Assets

$$(2,500,000 + 3,000,000) \div 2 = \text{ETB } 2,750,000$$

Sales-to-Assets Calculation

$$4,800,000 \div 2,750,000 \approx 1.75 \text{ times}$$

The company generates approximately ETB 1.75 of sales for each ETB 1 invested in average assets.

Rate Earned on Total Assets

$$\text{Rate Earned on Total Assets} = \frac{(\text{Net Income} + \text{Interest Expense})}{\text{Average Total Assets}} \times 100$$

Interest is added because total assets are financed by both creditors and stockholders.

Return-on-Assets Calculation

$$\frac{(392,000 + 120,000)}{512,000} \div 2,750,000 \times 100 \approx 18.62\%$$

Rate Earned on Stockholders' Equity

$$\text{Rate Earned on Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Stockholders' Equity}} \times 100$$

Average Equity

$$(1,200,000 + 1,500,000) \div 2 = \text{ETB } 1,350,000$$

Return-on-Equity Calculation

$$392,000 \div 1,350,000 \times 100 \approx 29.04\%$$

Interpretation

The company generated approximately ETB 0.2904 of net income for every ETB 1 of average stockholders' equity.

Rate Earned on Common Stockholders' Equity

$$\text{Return on Common Equity} = \frac{(\text{Net Income} - \text{Preferred Dividends})}{\text{Average Common Equity}} \times 100$$

Assume net income of ETB 392,000, preferred dividends of ETB 20,000 and average common equity of ETB 1,200,000.

$$(392,000 - 20,000) \div 1,200,000 \times 100 = 31\%$$

Earnings per Share

$$\text{EPS} = \frac{(\text{Net Income} - \text{Preferred Dividends})}{\text{Average Common Shares Outstanding}}$$

Assume 100,000 average common shares:

$$(392,000 - 20,000) \div 100,000 = \text{ETB } 3.72$$

Price-Earnings Ratio

$$\text{Price-Earnings Ratio} = \text{Market Price per Share} \div \text{Earnings per Share}$$

Assume a market price of ETB 37.20:

$$37.20 \div 3.72 = 10 \text{ times}$$

Investors are paying ETB 10 for each ETB 1 of current earnings per share.

Dividends per Share and Dividend Yield

Assume common cash dividends of ETB 120,000:

$$\text{Dividends per Share} = 120,000 \div 100,000 = \text{ETB } 1.20$$

$$\text{Dividend Yield} = \frac{\text{Dividends per Share}}{\text{Market Price per Share}} \times 100$$

$$1.20 \div 37.20 \times 100 \approx 3.23\%$$

SECTION 12

Integrated Exercise and Annual Reports

Bringing the measures together

Comprehensive Data: Balance Sheet

Item	2025	2026
Cash	ETB 150,000	ETB 180,000
Accounts Receivable	300,000	360,000
Inventory	400,000	480,000
Prepaid Expenses	50,000	60,000
Fixed Assets, Net	1,600,000	1,920,000
Total Assets	2,500,000	3,000,000
Current Liabilities	500,000	600,000
Long-Term Liabilities	800,000	900,000
Stockholders' Equity	1,200,000	1,500,000

Comprehensive Data: Income Statement

Item	2025	2026
Net Sales	ETB 4,000,000	ETB 4,800,000
Cost of Merchandise Sold	2,600,000	3,120,000
Operating Expenses	840,000	1,000,000
Interest Expense	100,000	120,000
Income before Tax	460,000	560,000
Net Income	322,000	392,000

Comprehensive Results

Measure	Result
Sales growth	20.00%
Net-income growth	21.74%
Gross-profit percentage	35.00%
Net-profit percentage	8.17%
Working capital	ETB 480,000
Current ratio	1.80
Quick ratio	0.90
Receivables turnover	14.55 times
Days' sales in receivables	25.1 days

Measure	Result
Inventory turnover	7.09 times
Days' sales in inventory	51.5 days
Fixed assets to LT liabilities	2.13
Liabilities to equity	1.00
Times interest earned	5.67 times
Sales to assets	1.75 times
Return on total assets	18.62%
Return on equity	29.04%

Integrated Interpretation: Growth and Profitability

Growth

Sales and net income increased, with net income growing slightly faster than sales.

Profitability

Gross margin remained stable, while operating and net-profit percentages improved slightly.

Return

The company generated a return on assets of approximately 18.62% and a return on equity of approximately 29.04%.

Integrated Interpretation: Liquidity, Efficiency and Solvency

Liquidity

Working capital increased, but the current ratio remained unchanged at 1.80. The quick ratio of 0.90 shows reliance on inventory for short-term coverage.

Efficiency

Receivables are collected in approximately 25 days, while inventory remains on hand for approximately 52 days.

Solvency

Debt and equity provide equal proportions of financing. Interest coverage of 5.67 times suggests an earnings cushion, subject to cash-flow and industry analysis.

Contents of a Corporate Annual Report

A corporate annual report may include:

- Financial statements
- Notes to financial statements
- Management discussion and analysis
- Report on internal control
- Independent auditor's report
- Selected financial information
- Business and risk information

Management Discussion and Analysis

Management discussion and analysis may explain:

- Changes in revenue
- Changes in profitability
- Liquidity
- Capital resources
- Significant risks
- Business trends
- Major uncertainties
- Expected future developments

Management's discussion should be evaluated together with the audited statements and notes.

Report on Internal Control

The internal-control report may address:

- Management's responsibility
- Financial-reporting controls
- Evaluation of effectiveness
- Identified material weaknesses
- Control framework used
- Auditor involvement where applicable

Independent Auditor's Report

The auditor's report communicates the independent auditor's conclusion concerning whether the financial statements are presented fairly under the applicable reporting framework.

The report does not guarantee:

- Future profitability
- Business success
- Absence of every fraud
- Accuracy of every estimate
- Investment performance

SECTION 13

Limitations and Interpretation

Reading ratios with judgment

Limitations of Financial Analysis

Results may be affected by:

- Different accounting policies
- Different inventory methods
- Different depreciation methods
- Changes in estimates
- Inflation
- Seasonal operations
- One-time transactions
- Acquisitions or disposals
- Different year-end dates
- Industry differences

Qualitative Factors

Financial ratios do not fully measure:

- Management quality
- Employee competence
- Customer satisfaction
- Product quality
- Organizational culture
- Legal exposure
- Environmental risk
- Reputation
- Innovation capacity

Ratio Interpretation Principles

A ratio should not be interpreted in isolation. Use:

- Multiple ratios
- Multiple years
- Competitor information
- Industry averages
- Cash-flow information
- Notes and disclosures
- Qualitative evidence

Warning Signs

Possible warning signs include:

- Sales rising while operating cash flow declines
- Receivables growing faster than sales
- Inventory growing faster than sales
- Declining gross margin
- Increasing leverage
- Declining interest coverage
- Repeated unusual gains
- Frequent accounting-policy changes
- Large unexplained related-party balances

Financial-Statement Analysis Cycle

1. Obtain reliable financial information

2. Understand the business and industry

3. Perform horizontal analysis

4. Perform vertical analysis

5. Calculate liquidity and solvency ratios

6. Calculate efficiency and profitability ratios

7. Compare results with benchmarks

8. Review annual-report disclosures

9. Identify strengths, risks and trends

10. Form an integrated conclusion

Chapter Summary: Analytical Methods

- Financial analysis converts accounting information into useful evidence.
- Horizontal analysis measures changes between accounting periods.
- Trend analysis compares multiple years with a base year.
- Vertical analysis expresses statement items as percentages of a base amount.
- Common-size statements support intercompany comparison.
- Working capital measures the excess of current assets over current liabilities.
- The current ratio evaluates general short-term coverage.
- The quick ratio focuses on highly liquid assets.

Chapter Summary: Efficiency and Solvency

- Receivables turnover measures collection efficiency.
- Days' sales in receivables estimates the collection period.
- Inventory turnover measures inventory movement.
- Days' sales in inventory estimates the holding period.
- The liabilities-to-equity ratio evaluates financial leverage.
- Times interest earned evaluates interest-payment capacity.
- Sales-to-assets measures asset-use efficiency.

Chapter Summary: Returns and Reporting

- Return on assets evaluates earnings generated by total resources.
- Return on equity evaluates returns generated for stockholders.
- EPS reports earnings attributable to each common share.
- The price-earnings ratio relates share price to earnings.
- Dividend yield relates cash dividends to market price.
- Annual reports provide financial statements, disclosures and management commentary.
- Ratios must be interpreted together with accounting policies, industry conditions and qualitative evidence.

Key Message

Financial-statement analysis is not simply the calculation of percentages and ratios. Its real purpose is to connect the numbers, explain the relationships and form a balanced conclusion about financial performance, risk and future capacity.

THANK YOU

Questions and Discussion

Dr Abenet Yohannes, Ph.D.

Principles of Accounting | Email: abenetyohannes@gmail.com