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BBA | Semester 6 | UK6DSCMGT302

Accounting for Managers

Course Code: UK6DSCMGT302 • Module 3 Notes

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Module 3: Analysis and Interpretation of Financial Statements

Comparative Statements, Common-Size Analysis, and Comprehensive Ratio Diagnostics

Chapter 1: Theoretical Architecture and Philosophy of Financial Statement Analysis

1.1 Meaning, Nature, and Analytical Significance

Financial statements—comprising the Balance Sheet, the Statement of Profit and Loss, and the Cash Flow Statement—represent the standardized corporate accounting documents through which a commercial enterprise reports its historical operating results and financial position to stakeholders. However, the absolute figures reported in raw financial statements convey limited operational meaning when viewed in isolation. For example, knowing that an enterprise earned a net profit of Rs. 10 crores is uninformative without knowing whether that profit was generated on a capital investment of Rs. 20 crores (an exceptional 50% return) or Rs. 1,000 crores (a meager 1% return). **Financial Statement Analysis** is the systematic process of dissecting, comparing, evaluating, and interpreting financial figures to establish meaningful operational relationships, assess underlying financial health, identify risk vulnerabilities, and project future enterprise performance.

The primary objectives of financial statement analysis span five critical managerial dimensions:

- **Assessing Short-Term Liquidity:** Evaluating the enterprise's operational capacity to settle immediate, maturing short-term current obligations as they fall due, safeguarding against working capital insolvencies.
- **Evaluating Long-Term Financial Solvency:** Analyzing capital structure leverage, debt service coverage, and structural resilience to ensure the firm can meet long-term interest payments and principal debt redemptions.
- **Measuring Operating Efficiency and Asset Turnover:** Gauging how effectively enterprise management utilizes operational capital assets (inventories, trade receivables, plant and machinery) to generate sales revenue.
- **Determining Operating and Investment Profitability:** Evaluating operating profit margins, return on equity (ROE), and return on capital employed (ROCE) to establish whether the business generates sufficient economic returns to compensate capital providers.
- **Facilitating Comparative Benchmarking:** Providing standardized metrics that enable intra-firm historical trend comparisons over time and inter-firm peer comparisons across identical industry sectors.

1.2 Inherent Limitations of Financial Statement Analysis

While an indispensable management tool, financial statement analysis is subject to severe inherent limitations that analysts must critically recognize:

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- *Historical Cost Constraint:* Traditional balance sheets record assets at historical acquisition cost less depreciation, completely ignoring replacement costs or the distorting effects of macroeconomic inflation.
- *Omission of Qualitative Factors:* Balance sheets cannot quantify vital intangible assets—such as leadership talent, employee morale, brand equity, intellectual property innovation, and customer loyalty—despite their decisive role in modern corporate valuation.
- *Differences in Accounting Policies:* Divergent accounting treatments permitted under GAAP and Ind AS (e.g., straight-line vs. written-down value depreciation; FIFO vs. weighted average inventory valuation) severely distort comparative inter-firm benchmarking.
- *Window Dressing:* The deliberate manipulation of accounting records and transaction timing by management near financial year-end to project a false impression of enhanced liquidity or profitability (e.g., delaying vendor payments, booking premature sales).

Chapter 2: Systematic Methodologies of Financial Analysis

2.1 Comparative Financial Statements (Horizontal Analysis)

Comparative Financial Statements present financial metrics for two or more consecutive chronological operating periods side-by-side in adjoining columns, showing absolute monetary changes and percentage changes for each line item. Horizontal analysis reveals directional trends, highlighting which revenue streams are expanding and which operational cost heads are escalating out of control.

$$\text{Absolute Change} = \text{Current Year Figure} - \text{Base Year Figure}$$

$$\text{Percentage Change} = \frac{\text{Absolute Change}}{\text{Base Year Figure}} \times 100$$

2.2 Common-Size Financial Statements (Vertical Analysis)

Common-Size Financial Statements convert absolute rupee figures into uniform relative percentages by setting a common baseline equal to 100%. In a *Common-Size Balance Sheet*, Total Assets (or Total Equities and Liabilities) is established as 100%, expressing each individual asset and liability as a percentage of total resources. In a *Common-Size Income Statement*, Net Sales Revenue is established as 100%, expressing cost of goods sold, operating overheads, and net profit as percentages of net revenue. Vertical analysis eliminates structural size distortions, enabling meaningful direct comparisons between massive multinational corporations and small regional competitors.

2.3 Trend Analysis (Base-Year Index Analysis)

When analyzing corporate financial trajectory across extended time horizons (such as five or ten consecutive years), analysts execute **Trend Analysis**. An initial representative year is established as the **Base Year (Index = 100)**. All subsequent years' figures for specific line items (e.g., sales, inventory, net profit) are expressed as index numbers relative to the base year:

$$\text{Trend Percentage} = \frac{\text{Current Year Absolute Figure}}{\text{Base Year Absolute Figure}} \times 100$$

Chapter 3: The Foundational Taxonomy of Accounting Ratios

3.1 Concept, Classification, and Diagnostic Standards

A financial ratio is a mathematical expression showing the quantitative relationship between two interrelated accounting figures extracted from the balance sheet or income statement. Ratios synthesize voluminous financial statements into precise diagnostic indicators. Financial ratios are categorized functionally into four foundational suites:

3.2 Liquidity Ratios (Short-Term Solvency)

Liquidity ratios evaluate an enterprise's ability to satisfy maturing current liabilities utilizing liquid current assets:

1. **Current Ratio (Working Capital Ratio):**

$$\text{Current Ratio} = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}$$

Standard Benchmark: A ratio of **2:1** is traditionally considered an ideal working capital benchmark, indicating two rupees of current assets for every rupee of short-term debt.

2. **Quick Ratio (Acid-Test Ratio):** Measures immediate liquidity by excluding illiquid inventory and prepaid expenses:

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}} = \frac{\text{Current Assets} - \text{Inventory} - \text{Prepaid Expenses}}{\text{Current Liabilities}}$$

Standard Benchmark: A ratio of **1:1** represents sound immediate liquidity.

3. **Absolute Cash Ratio (Super-Quick Ratio):** Evaluates immediate cash availability:

$$\text{Cash Ratio} = \frac{\text{Cash in Hand} + \text{Cash at Bank} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

Standard Benchmark: A ratio of **0.5:1** is widely accepted as indicating sufficient emergency liquidity.

3.3 Solvency and Leverage Ratios (Long-Term Capital Structure)

Solvency ratios examine the structural composition of enterprise long-term financing and its capacity to service debt obligations:

1. **Debt-Equity Ratio:** Measures the relative financial stake of external long-term creditors versus equity shareholders:

$$\text{Debt-Equity Ratio} = \frac{\text{Long-Term Debt}}{\text{Shareholders Equity (Net Worth)}}$$

Standard Benchmark: A ratio of **2:1** (or 1:1 in conservative industries) is standard. A high ratio indicates high financial leverage and financial risk; a low ratio indicates conservative financing.

2. **Proprietary Ratio:** Highlights the proportion of total enterprise assets funded by equity owners:

$$\text{Proprietary Ratio} = \frac{\text{Shareholders Equity}}{\text{Total Assets}}$$

Standard Benchmark: A ratio exceeding **0.50 (50%)** indicates solid equity ownership and strong long-term solvency.

3. **Interest Coverage Ratio (Debt Service Coverage):** Evaluates operational capacity to pay interest charges out of operating earnings:

$$\text{Interest Coverage Ratio} = \frac{\text{Earnings Before Interest and Tax (EBIT)}}{\text{Fixed Interest Charges}}$$

Benchmark: Ratios exceeding **3.0 to 5.0 times** provide comfort to commercial lending banks.

3.4 Activity and Asset Turnover Ratios (Operational Efficiency)

Turnover ratios measure the velocity with which corporate assets are deployed and converted into sales revenue:

1. **Inventory Turnover Ratio:** Measures how many times average inventory is sold during the year:

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold (COGS)}}{\text{Average Inventory}}$$

$$\text{Average Inventory Holding Period (Days)} = \frac{365}{\text{Inventory Turnover Ratio}}$$

2. **Trade Receivables (Debtors) Turnover Ratio:** Measures speed of customer credit collections:

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Trade Receivables}}$$

$$\text{Average Collection Period (DSO in Days)} = \frac{365}{\text{Debtors Turnover Ratio}}$$

3. **Trade Payables (Creditors) Turnover Ratio:** Measures the velocity of settling vendor obligations:

$$\text{Creditors Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Trade Payables}}$$

$$\text{Average Payment Period (DPO in Days)} = \frac{365}{\text{Creditors Turnover Ratio}}$$

4. **Working Capital Turnover Ratio:** Measures how efficiently net working capital supports sales:

$$\text{Working Capital Turnover} = \frac{\text{Net Revenue from Operations}}{\text{Net Working Capital (Current Assets - Current Liabilities)}}$$

3.5 Profitability Ratios and Investment Returns

Profitability ratios evaluate management's success in generating earnings relative to sales volume and capital investments:

1. **Gross Profit Ratio:** $\frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$
2. **Net Profit Ratio:** $\frac{\text{Net Profit After Tax}}{\text{Net Sales}} \times 100$
3. **Operating Ratio:** $\frac{\text{Cost of Goods Sold} + \text{Operating Expenses}}{\text{Net Sales}} \times 100$
4. **Return on Capital Employed (ROCE / ROI):**

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital Employed}} \times 100$$

Where: Capital Employed = Share Capital + Reserves + Long-Term Debts - Fictitious Assets (or Total Assets - Current Liabilities).

Chapter 4: Working Capital Dynamics and Cash Conversion Cycle Analysis

4.1 The Operating Cycle Concept

The **Operating Cycle (Gross Operating Cycle)** represents the duration in days required for an enterprise to purchase raw materials, manufacture finished products, sell them to customers on credit, and collect cash from receivables:

$$\text{Gross Operating Cycle (Days)} = \text{Raw Material Storage Days} + \text{WIP Conversion Days} + \text{Finished Goods Holding Days} + \text{Debtors Collection Days}$$

4.2 The Net Operating Cycle (Cash Conversion Cycle)

The **Cash Conversion Cycle (CCC)** (or Net Operating Cycle) measures the exact net time span between the cash payment for raw materials and the eventual cash collection from trade debtors. It explicitly accounts for the supplier credit window (trade payables deferral period):

$$\text{Cash Conversion Cycle (CCC)} = \text{Gross Operating Cycle} - \text{Creditors Deferral Period (DPO)}$$

$$\text{CCC (Days)} = (DIO + DSO) - DPO$$

Where: DIO is Days Sales of Inventory, DSO is Days Sales Outstanding (Receivables), and DPO is Days Payables Outstanding.

A shorter or negative cash conversion cycle indicates exceptional working capital efficiency, where the enterprise effectively finances its operating assets using interest-free vendor credit (common in streamlined retail giants like Amazon and Walmart).

Chapter 5: Trading on Equity and the Mathematics of Financial and Operating Leverage

5.1 The Concept of Trading on Equity

Trading on Equity refers to the strategic deployment of fixed-cost debt capital (debentures, long-term bank loans) in the enterprise capital structure to enhance the rate of return earned by equity shareholders. Because interest on debt is a fixed financial obligation and is tax-deductible under the Indian Income Tax Act, any operating earnings generated by the invested debt capital that exceed the after-tax interest rate accrue entirely to the equity shareholders, multiplying their Return on Equity (ROE) and Earnings Per Share (EPS).

5.2 Operating, Financial, and Combined Leverage

Leverage measures the responsiveness of corporate financial performance to percentage shifts in underlying business activity:

$$\text{Degree of Operating Leverage (DOL)} = \frac{\text{Percentage Change in EBIT}}{\text{Percentage Change in Sales Volume}} = \frac{\text{Contribution}}{\text{EBIT}}$$

$$\text{Degree of Financial Leverage (DFL)} = \frac{\text{Percentage Change in EPS}}{\text{Percentage Change in EBIT}} = \frac{\text{EBIT}}{\text{EBT}} = \frac{\text{EBIT}}{\text{EBIT} - I}$$

$$\text{Degree of Combined Leverage (DCL)} = DOL \times DFL = \frac{\text{Contribution}}{\text{EBT}}$$

Where: I represents total fixed annual interest charges. Combined leverage measures the total risk profile of the enterprise resulting from fixed operating costs and fixed debt obligations.

Chapter 6: The DuPont Deconstructive Performance Framework

6.1 The Classical DuPont 3-Stage Model

Developed by the DuPont Corporation, this framework decomposes **Return on Equity (ROE)** into three distinct operational and financial drivers:

$$\text{ROE} = \left(\frac{\text{Net Profit}}{\text{Sales}}\right) \times \left(\frac{\text{Sales}}{\text{Total Assets}}\right) \times \left(\frac{\text{Total Assets}}{\text{Shareholders Equity}}\right)$$

$$\text{ROE} = \text{Net Profit Margin (Profitability)} \times \text{Asset Turnover (Efficiency)} \times \text{Equity Multiplier (Leverage)}$$

Diagnostic Insight: An enterprise can achieve a 20% ROE through high operating margins (luxury goods), rapid asset turnover (discount retail), or aggressive financial debt leverage (commercial banking).

6.2 The Advanced DuPont 5-Stage Model

The 5-stage DuPont decomposition separates operational operating performance from financing decisions and corporate tax burdens:

$$\text{ROE} = \left(\frac{\text{Net Profit}}{\text{EBT}}\right) \times \left(\frac{\text{EBT}}{\text{EBIT}}\right) \times \left(\frac{\text{EBIT}}{\text{Sales}}\right) \times \left(\frac{\text{Sales}}{\text{Assets}}\right) \times \left(\frac{\text{Assets}}{\text{Equity}}\right)$$

$$\text{ROE} = \text{Tax Burden} \times \text{Interest Burden} \times \text{Operating Margin} \times \text{Asset Turnover} \times \text{Financial Leverage}$$

Chapter 7: Comprehensive Worked Numerical Problems in Financial Statement and Ratio Diagnostics

7.1 Worked Problem 1: Full Suite Ratio Computation and Diagnostics

The summarized financial statements of Bharat Consumer Goods Ltd. for the financial year ended 31st March provide the following authenticated data:

Financial Account Item	Monetary Amount (Rs.)
Gross Sales Revenue (80% Credit, 20% Cash)	25,00,000
Sales Returns	1,00,000
Cost of Goods Sold (COGS)	14,40,000
Operating Expenses (Administration and Selling)	3,60,000
10% Debentures Interest Paid	60,000

Financial Account Item	Monetary Amount (Rs.)
Corporate Income Tax Rate	30%
Opening Inventory	2,00,000
Closing Inventory	2,80,000
Trade Receivables (Debtors) at Year-End	3,20,000
Cash and Bank Balances	1,00,000
Prepaid Expenses	20,000
Trade Payables (Creditors)	2,00,000
Outstanding Expenses (Short-Term Liability)	50,000
10% Debentures (Long-Term Debt)	6,00,000
Equity Share Capital (Face Value Rs. 10)	8,00,000
Retained Earnings and General Reserves	4,00,000
Net Fixed Assets (Plant and Machinery)	13,30,000

Step-by-Step Mathematical Resolution:

1. Net Sales and Operating Earnings:

$$\text{Net Sales} = 25,00,000 - 1,00,000 = \text{Rs. } 24,00,000$$

$$\text{Gross Profit} = 24,00,000 - 14,40,000 = \text{Rs. } 9,60,000$$

$$\text{Operating Profit (EBIT)} = 9,60,000 - 3,60,000 = \text{Rs. } 6,00,000$$

$$\text{Earnings Before Tax (EBT)} = 6,00,000 - 60,000 = \text{Rs. } 5,40,000$$

$$\text{Tax Expense } (30\%) = 5,40,000 \times 0.30 = \text{Rs. } 1,62,000$$

$$\text{Net Profit After Tax (PAT)} = 5,40,000 - 1,62,000 = \text{Rs. } 3,78,000$$

2. Working Capital Aggregates:

$$\text{Current Assets} = 2,80,000 + 3,20,000 + 1,00,000 + 20,000 = \text{Rs. } 7,20,000$$

$$\text{Quick Assets} = 7,20,000 - 2,80,000 - 20,000 = \text{Rs. } 4,20,000$$

$$\text{Current Liabilities} = 2,00,000 + 50,000 = \text{Rs. } 2,50,000$$

3. Ratio Computations:

- **Current Ratio:**

> $$\text{Current Ratio} = \frac{7,20,000}{2,50,000} = 2.88 : 1$$
>
> **Evaluation:** Exceeds 2:1 standard, indicating strong liquidity cover.

- **Quick Ratio:**

> $$\text{Quick Ratio} = \frac{4,20,000}{2,50,000} = 1.68 : 1$$
>
> **Evaluation:** Exceeds 1:1 standard, confirming liquid strength.

- **Debt-Equity Ratio:**

> $$\text{Shareholders Equity} = 8,00,000 + 4,00,000 = \text{Rs. } 12,00,000$$
> $$\text{Debt-Equity Ratio} = \frac{6,00,000}{12,00,000} = 0.50 : 1$$
>
> **Evaluation:** Conservative capital structure with very low debt risk.

- **Interest Coverage Ratio:**

> $$\text{Interest Coverage} = \frac{6,00,000}{60,000} = 10.0 \text{ times}$$
>
> **Evaluation:** Highly safe interest service margin (benchmark > 3.0x).

- **Inventory Turnover Ratio and Holding Days:**

> $$\text{Average Inventory} = \frac{2,00,000+2,80,000}{2} = \text{Rs. } 2,40,000$$
> $$\text{Inventory Turnover} = \frac{14,40,000}{2,40,000} = 6.0 \text{ times}$$
> $$\text{Average Inventory Holding Period} = \frac{365}{6.0} \approx 60.83 \text{ days}$$

- **Debtors Turnover Ratio and Collection Days (DSO):**

> $$\text{Credit Sales} = 80\% \times 24,00,000 = \text{Rs. } 19,20,000$$
> $$\text{Debtors Turnover} = \frac{19,20,000}{3,20,000} = 6.0 \text{ times}$$
> $$\text{Average Collection Period} = \frac{365}{6.0} \approx 60.83 \text{ days}$$

- **Return on Capital Employed (ROCE):**

$$\text{Capital Employed} = 12,00,000\ (\text{Equity}) + 6,00,000\ (\text{Debt}) = \text{Rs. } 18,00,000$$

$$\text{ROCE} = \frac{6,00,000}{18,00,000} \times 100 = 33.33\%$$

- **Return on Equity (ROE):**

$$\text{ROE} = \frac{5,78,000}{12,00,000} \times 100 = 31.50\%$$

7.2 Worked Problem 2: Comparative Financial Statement Analysis

The summarized Balance Sheets of Omega Industrial Corporation for two consecutive operating years are presented below:

Balance Sheet Particulars	Year 1 (Rs.)	Year 2 (Rs.)	Absolute Change (Rs.)	Percentage Change (%)
I. Equities and Liabilities:				
Equity Share Capital	10,00,000	12,00,000	+2,00,000	+20.0%
General Reserves & Surplus	4,00,000	5,50,000	+1,50,000	+37.5%
12% Secured Long-Term Debentures	6,00,000	4,00,000	-2,00,000	-33.3%
Trade Payables (Current Liabilities)	3,00,000	4,50,000	+1,50,000	+50.0%
Short-Term Provisions	1,00,000	1,20,000	+20,000	+20.0%
Total Equities and Liabilities	**24,00,000**	**27,20,000**	**+3,20,000**	**+13.3%**
II. Assets:				
Gross Fixed Assets (Plant & Machinery)	16,00,000	19,50,000	+3,50,000	+21.9%
Less: Accumulated Depreciation	(3,00,000)	(4,20,000)	-1,20,000	+40.0%
Net Fixed Assets	13,00,000	15,30,000	+2,30,000	+17.7%

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Balance Sheet Particulars	Year 1 (Rs.)	Year 2 (Rs.)	Absolute Change (Rs.)	Percentage Change (%)
Inventories	5,00,000	6,20,000	+1,20,000	+24.0%
Trade Receivables	4,00,000	4,10,000	+10,000	+2.5%
Cash and Bank Balances	2,00,000	1,60,000	-40,000	-20.0%
Total Assets	**24,00,000**	**27,20,000**	**+3,20,000**	**+13.3%**

Managerial Interpretation of Comparative Statement:

1. **Expansion of Operational Fixed Base:** Gross fixed assets expanded by 21.9% (+Rs. 3,50,000), signaling active capital investment in plant capacity.
2. **De-leveraging of Capital Structure:** Long-term debentures were retired by 33.3% (-Rs. 2,00,000), while equity share capital and reserves expanded by Rs. 3,50,000. This structural shift reduced financial leverage risk.
3. **Working Capital Strain:** Trade payables increased by 50.0% (+Rs. 1,50,000) and inventory rose by 24.0%, while cash reserves declined by 20.0%, indicating short-term liquidity tightening.

7.3 Worked Problem 3: Common-Size Income Statement Analysis

The Statements of Profit and Loss for two competing manufacturing firms, Firm X and Firm Y, are converted into Common-Size Income Statements:

Income Statement Particulars	Firm X (Rs.)	Firm X (%)	Firm Y (Rs.)	Firm Y (%)
Net Revenue from Operations (Sales)	50,00,000	100.0%	80,00,000	100.0%
Cost of Goods Sold (COGS)	30,00,000	60.0%	52,00,000	65.0%
Gross Profit	**20,00,000**	**40.0%**	**28,00,000**	**35.0%**
Selling and Distribution Expenses	6,00,000	12.0%	12,00,000	15.0%
General Administrative Overheads	4,00,000	8.0%	5,60,000	7.0%
Operating Profit (EBIT)	**10,00,000**	**20.0%**	**10,40,000**	**13.0%**
Interest Charges	2,00,000	4.0%	1,60,000	2.0%
Income Tax (30%)	2,40,000	4.8%	2,64,000	3.3%
Net Profit After Tax	**5,60,000**	**11.2%**	**6,16,000**	**7.7%**

Managerial Comparative Evaluation:

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Although Firm Y generates significantly higher absolute sales revenue (Rs. 80 lakhs vs. Rs. 50 lakhs), common-size vertical analysis proves that **Firm X operates with superior operational profitability**. Firm X achieves a Gross Profit Margin of 40.0% compared to 35.0% for Firm Y, and converts 11.2% of its revenue into Net Profit After Tax compared to only 7.7% for Firm Y. Firm Y is burdened by elevated COGS (65.0%) and aggressive selling expenses (15.0%).

7.4 Worked Problem 4: DuPont 3-Stage and 5-Stage Performance Decomposition

Titan Technologies Ltd. provides the following audited operational metrics for the current year:

- Net Sales Revenue: Rs. 40,00,000
- Earnings Before Interest and Tax (EBIT): Rs. 8,00,000
- Interest Expense: Rs. 1,00,000
- Earnings Before Tax (EBT): Rs. 7,00,000
- Corporate Tax Expense (25%): Rs. 1,75,000
- Net Profit After Tax (PAT): Rs. 5,25,000
- Total Assets: Rs. 50,00,000
- Shareholders Equity: Rs. 25,00,000

Required: Decompose Return on Equity (ROE) using both the 3-Stage and 5-Stage DuPont models.

Step-by-Step Mathematical Resolution:

DuPont 3-Stage Resolution:

$$\text{Net Profit Margin} = \frac{\text{PAT}}{\text{Sales}} = \frac{5,25,000}{40,00,000} = 13.125\%$$

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} = \frac{40,00,000}{50,00,000} = 0.80 \text{ times}$$

$$\text{Equity Multiplier} = \frac{\text{Total Assets}}{\text{Shareholders Equity}} = \frac{50,00,000}{25,00,000} = 2.00$$

$$\text{ROE} = 0.13125 \times 0.80 \times 2.00 = 0.2100 = 21.00\%$$

Verification: Direct ROE $= \frac{5,25,000}{25,00,000} \times 100 = 21.00\%$.

DuPont 5-Stage Resolution:

$$\text{Tax Burden Factor} = \frac{\text{PAT}}{\text{EBT}} = \frac{5,25,000}{7,00,000} = 0.750$$

$$\text{Interest Burden Factor} = \frac{\text{EBT}}{\text{EBIT}} = \frac{7,00,000}{8,00,000} = 0.875$$

$$\text{Operating Profit Margin} = \frac{\text{EBIT}}{\text{Sales}} = \frac{8,00,000}{40,00,000} = 0.200 \ (20.0\%)$$

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Assets}} = \frac{40,00,000}{50,00,000} = 0.800$$

$$\text{Financial Leverage} = \frac{\text{Assets}}{\text{Equity}} = \frac{50{,}00{,}000}{25{,}00{,}000} = 2.000$$

$$\text{ROE} = 0.750 \times 0.875 \times 0.200 \times 0.800 \times 2.000 = 0.2100 = 21.00\%$$

Diagnostic Synthesis: Titan Technologies achieves an exceptional 21% ROE primarily driven by robust core operating profitability (20% operating margin), reinforced by a 2x financial leverage multiplier and disciplined debt interest burden (0.875).

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