

Chapter 17

Financial Statement Analysis

Basics of Financial Statement Analysis

Analysing financial statements involves evaluating **3 characteristics** of a company:

1. its **liquidity**
2. its **profitability**
3. its **solvency**



Comparative Analysis

- Three types of comparisons:
 - Intracompany *basis* (current vs. previous years)
 - Intercompany *basis* (vs. competing companies)
 - Industry averages



Comparative Analysis

- 3 tools:
 - Horizontal analysis
 - Vertical analysis
 - Ratio analysis



ANALYSIS
SOLUTION
PROCESS
OBJECTIVES
TEAMWORK
VISION
SALES

Horizontal Analysis (Trend Analysis)

- Compares a series of financial data
 - To determine the increase or decrease over time
- Horizontal percentage of base-period amount
 - Expresses specified amount as a percent of a base year

$$\text{Horizontal Percentage of Base-Period Amount} = \frac{\text{Analysis-Period Amount}}{\text{Base-Period Amount}}$$

- Horizontal percentage change for period
 - Measures change in any one specific period

$$\text{Change since base year} = \frac{\text{Current Year Amount} - \text{Base Year Amount}}{\text{Base Year Amount}}$$

Horizontal Analysis Balance Sheet

HOMETOWN TIRES AND MORE INC.
Balance Sheet
December 31

	2011	2010	Increase (Decrease) Amount	Percentage
Assets				
Current assets				
Cash	\$ 50,000	\$ 55,000	\$ (5,000)	(9.1)%
Trading investments	20,000	35,000	(15,000)	(42.9)%
Accounts receivable	72,500	50,000	22,500	45.0%
Inventory	372,500	340,000	32,500	9.6%
Prepaid expenses	30,000	20,000	10,000	50.0%
Total current assets	545,000	500,000	45,000	9.0%
Property, plant, and equipment	400,000	450,000	(50,000)	(11.1)%
Intangible assets	55,000	65,000	(10,000)	(15.4)%
Total assets	\$1,000,000	\$1,015,000	\$(15,000)	(1.5)%
Liabilities and Shareholders' Equity				
Liabilities				
Current liabilities	\$ 337,700	\$ 333,500	\$ 4,200	1.3%
Non-current liabilities	400,000	475,000	(75,000)	(15.8)%
Total liabilities	737,700	808,500	(70,800)	(8.8)%
Shareholders' equity				
Common shares (300,000 shares issued)	90,000	90,000	0	0.0%
Retained earnings	152,300	96,500	55,800	57.8%
Accumulated other comprehensive income	20,000	20,000	0	0.0%
Total shareholders' equity	262,300	206,500	55,800	27.0%
Total liabilities and shareholders' equity	\$1,000,000	\$1,015,000	\$(15,000)	(1.5)%

Horizontal Analysis Income Statement				
HOMETOWN TIRES AND MORE INC. Income Statement Years Ended December 31				
	2011	2010	Increase (Decrease)	
	Amount	Amount	Amount	Percentage
Sales	\$2,095,000	\$1,960,000	\$135,000	6.9%
Sales returns and allowances	98,000	123,000	(25,000)	(20.3)%
Net sales	1,997,000	1,837,000	160,000	8.7%
Cost of goods sold	1,381,000	1,240,000	141,000	11.4%
Gross profit	616,000	597,000	19,000	3.2%
Operating expenses	457,000	440,000	17,000	3.9%
Profit from operations	159,000	157,000	2,000	1.3%
Other expenses				
Interest expense	27,000	29,500	(2,500)	(8.5)%
Loss on fair value adjustment of trading investments	15,000	0	15,000	n/a
Profit before income tax	117,000	127,500	(10,500)	(8.2)%
Income tax expense	23,400	25,500	(2,100)	(8.2)%
Profit	\$ 93,600	\$ 102,000	\$ (8,400)	(8.2)%

VERTICAL ANALYSIS

- Expresses each item in a financial statement as a % of a base amount
- Commonly used base amounts are:
 - Balance sheet:** total assets; total liabilities and shareholders' equity
 - Income statement:** net sales

$$\text{Vertical Percentage of Base Amount} = \frac{\text{Analysis Amount}}{\text{Base Amount}}$$

Useful for intracompany and intercompany comparisons

Vertical Analysis Balance Sheet				
HOMETOWN TIRES AND MORE INC. Balance Sheet December 31				
	2011		2010	
	Amount	Percentage	Amount	Percentage
Assets				
Current assets				
Cash	\$ 50,000	5.0%	\$ 55,000	5.4%
Trading investments	20,000	2.0%	35,000	3.5%
Accounts receivable	72,500	7.2%	50,000	4.9%
Inventory	372,500	37.3%	340,000	33.5%
Prepaid expenses	30,000	3.0%	20,000	2.0%
Total current assets	545,000	54.5%	500,000	49.3%
Property, plant, and equipment	400,000	40.0%	450,000	44.3%
Intangible assets	55,000	5.5%	65,000	6.4%
Total assets	\$1,000,000	100.0%	\$1,015,000	100.0%
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Net sales	1,997,000	100.0%	1,837,000	100.0%
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Ratio Analysis

Liquidity Ratios


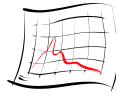

- Measure short-term ability of the company to pay its obligations and to meet unexpected needs for cash.

Profitability Ratios

- Measure the income of a company for a given period of time.

Solvency Ratios

- Measure the ability of the company to survive over a long period of time.

Liquidity Ratios			
Liquidity Ratio	Formula	Purpose	Desired Result
Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Measures short-term debt-paying ability.	Higher
Acid-test	$\frac{\text{Cash} + \text{Short-term investments} + \text{Accounts receivable}}{\text{Current liabilities}}$	Measures immediate short-term debt-paying ability.	Higher
Receivables turnover	$\frac{\text{Net credit sales}}{\text{Average gross accounts receivable}}$	Measures liquidity of receivables.	Higher
Collection period	$\frac{\text{Days in year}}{\text{Receivables turnover}}$	Measures number of days receivables are outstanding.	Lower
Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	Measures liquidity of inventory.	Higher
Days sales in inventory	$\frac{\text{Days in year}}{\text{Inventory turnover}}$	Measures number of days inventory is on hand.	Lower
Operating cycle	Days sales in inventory + Collection period	Measures number of days to purchase inventory, sell it on account, and collect the cash.	Lower

Profitability Ratios			
Profitability Ratio	Formula	Purpose	Desired Result
Gross profit margin	$\frac{\text{Gross profit}}{\text{Net sales}}$	Measures margin between selling price and cost of goods sold.	Higher
Profit margin	$\frac{\text{Profit}}{\text{Net sales}}$	Measures amount of profit generated by each dollar of sales.	Higher
Asset turnover	$\frac{\text{Net sales}}{\text{Average total assets}}$	Measures how efficiently assets are used to generate sales.	Higher
Return on assets	$\frac{\text{Profit}}{\text{Average total assets}}$	Measures overall profitability of assets.	Higher
Return on equity	$\frac{\text{Profit}}{\text{Average shareholders' equity}}$	Measures profitability of shareholders' investment.	Higher
Earnings per share	$\frac{\text{Profit} - \text{Preferred dividends}}{\text{Weighted average number of common shares}}$	Measures amount of profit earned on each common share.	Higher
Price-earnings ratio	$\frac{\text{Market price per share}}{\text{Earnings per share}}$	Measures relationship between market price per share and earnings per share.	Higher
Payout ratio	$\frac{\text{Cash dividends}}{\text{Profit}}$	Measures percentage of profit distributed as cash dividends.	Higher

Solvency Ratios			
Solvency Ratio	Formula	Purpose	Desired Result
Debt to total assets	$\frac{\text{Total liabilities}}{\text{Total assets}}$	Measures percentage of total assets provided by creditors.	Lower
Interest coverage	$\frac{\text{Profit} + \text{Interest expense} + \text{Income tax expense (EBIT)}}{\text{Income expense}}$	Measures ability to meet interest payments.	Higher
Free cash flow	Cash provided (used) by operating activities – Cash used (provided) by investing activities	Measures cash generated from operating activities that management can use after paying capital expenditures.	Higher

Benefits of Financial Analysis

- Helps perform trend analysis
- Comparative analysis – compare among companies in the same industry
- Comparative analysis – compare past and present of the same company
- Project future success / failure

Limitations of Financial Analysis

- Estimates**
- Historical cost** (value of items changes overtime)
- Alternative accounting methods** (IFRS vs ASPE)
- Economic Factors**
 - Atypical Data: data of the past may not realistically reflect the present
 - Irregular items (e.g. – discontinued operations) must be excluded
 - Losses make it difficult to calculate and interpret ratios
- Other comprehensive income** (usually excluded from analysis, should be assessed if significant)
- Quality of information** (full and transparent reporting aids in accurate financial analysis)
- Diversification**