Financial Statement Analysis

The Interrelationships of the 4 Financial Statements

Statement of Cash Flows

For the year ended December 31, 20x2

	(000)
Net cash flows from operating activities	$ 1,470
Net cash used by investing activities	$ (4,100)
Net cash provided by financing activities	$ 2,750
Increase in cash balance	$ 120
Beginning cash balance (12/31/x1)	$ 100
Ending cash balance (12/31/x2)	$ 220

BALANCE SHEET

As of December 31, 20x1

	(000)
Assets	
Cash	$ 100
Other Current Assets	$ 1,300
Long-term Investments	$ 3,000
Long-term Assets	$ 10,000
Intangible Assets	$ 1,600
Total Assets	$ 16,000
Liabilities and Owner's Equity	
Current Liabilities	$ 1,000
Long-term Liabilities	$ 4,950
Joe Owner, Capital	$ 10,050
Total Liabilities and Equity	$ 16,000

Income Statement

For the year ended December 31, 20x2

	(000)
Revenues	$ 5,880
Expenses	$ 4,795
Net Income	$ 1,085

Statement of Changes in Owner's Equity

For the year ended December 31, 20x2

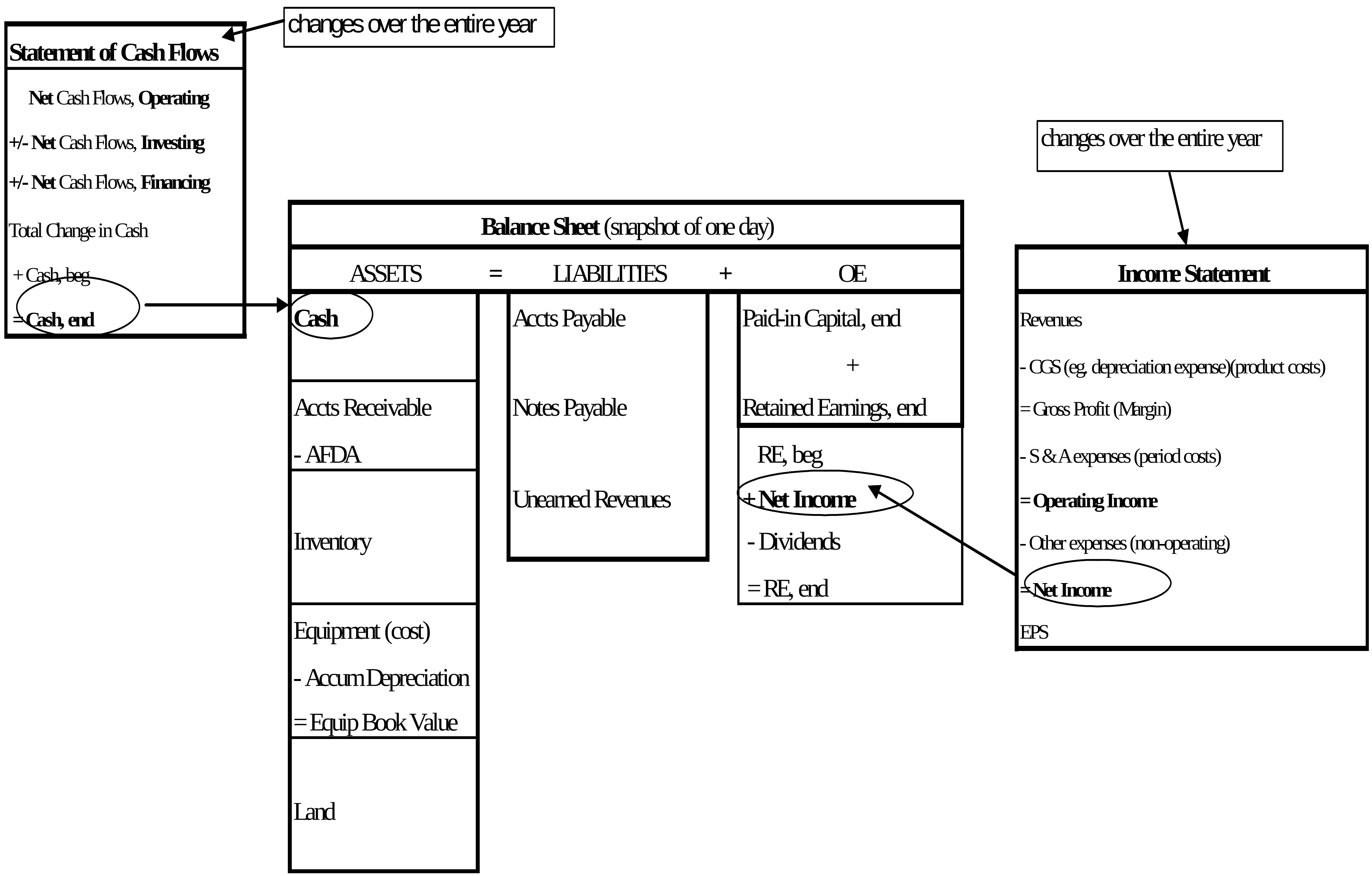
	(000)
Joe Owner, capital, 1/1/x2	$ 10,050
Plus: Investments by owner	$ -
Plus: Net Income	$ 1,085
Less: Withdrawals by owner	$ 200
Joe Owner, capital, 12/31/x2	$ 10,935

BALANCE SHEET

As of December 31, 20x2

	(000)
Assets	
Cash	$ 220
Other Current Assets	$ 1,195
Long-term Investments	$ 4,000
Long-term Assets	$ 11,500
Intangible Assets	$ 1,700
Total Assets	$ 18,615
Liabilities and Owner's Equity	
Current Liabilities	$ 740
Long-term Liabilities	$ 6,940
Joe Owner, Capital	$ 10,935
Total Liabilities and Equity	$ 18,615

The Interrelationships of the 4 Financial Statements



ANALYSIS TOOLS

HORIZONTAL (TREND) ANALYSIS
evaluates a series of financial statement data over a period of time.

VERTICAL ANALYSIS
expresses each item in a financial statement as a percent of a base amount

RATIO ANALYSIS
expresses the relationship among selected items of financial statement data.

HORIZONTAL ANALYSIS

Changes are measured against a base year with the following formula.

$$\text{Change since base period} = \frac{\text{Current year amount} - \text{Base year amount}}{\text{Base year amount}}$$

HORIZONTAL ANALYSIS OF BALANCE SHEET

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets
December 31

	2003	2002	Increase or (Decrease) during 2003 Amount	Percent
Assets				
Current assets	$1,020,000	$ 945,000	$ 75,000	7.9%
Plant assets (net)	800,000	632,500	167,500	26.5%
Intangible assets	15,000	17,500	(2,500)	(14.3%)
Total assets	$1,835,000	$1,595,000	$240,000	15.0%
Liabilities				
Current liabilities	$ 344,500	$ 303,000	$ 41,500	13.7%
Long-term liabilities	487,500	497,000	(9,500)	(1.9%)
Total liabilities	832,000	800,000	32,000	4.0%
Stockholders' Equity				
Common stock, $1 par	275,400	270,000	5,400	2.0%
Retained earnings	727,600	525,000	202,600	38.6%
Total stockholders' equity	1,003,000	795,000	208,000	26.2%
Total liabilities and stockholders' equity	$1,835,000	$1,595,000	$240,000	15.0%

HORIZONTAL ANALYSIS OF INCOME STATEMENT

Quality Department Store Inc.
Condensed Income Statements
For the Years Ended December 31

	2003	2002	Increase or (Decrease) during 2003 Amount	Percent
Sales	$2,195,000	$1,960,000	$235,000	12.0%
Sales returns and allowances	98,000	123,000	(25,000)	(20.3%)
Net sales	2,097,000	1,837,000	260,000	14.2%
Cost of goods sold	1,281,000	1,140,000	141,000	12.4%
Gross profit	816,000	697,000	119,000	17.1%
Selling expenses	253,000	211,500	41,500	19.6%
Administrative expenses	104,000	108,500	(4,500)	(4.1%)
Total operating expenses	357,000	320,000	37,000	11.6%
Income from operations	459,000	377,000	82,000	21.8%
Other revenues and gains				
Interest and dividends	9,000	11,000	(2,000)	(18.2%)
Other expenses and losses				
Interest expense	36,000	40,500	(4,500)	(11.1%)
Income before income taxes	432,000	347,500	84,500	24.3%
Income tax expense	168,200	139,000	29,200	21.0%
Net income	$ 263,800	$ 208,500	$ 55,300	26.5%

HORIZONTAL ANALYSIS OF RETAINED EARNINGS STATEMENT

The change in January 1 retained earnings is calculated as follows

$$39.4\% = \frac{525{,}000-376{,}500}{376{,}500}$$

ILLUSTRATION 15-7

QUALITY DEPARTMENT STORE INC.
Retained Earnings Statement
For the Years Ended December 31

			Increase or (Decrease) during 1999	
	2003	2002	Amount	Percentage
Retained earnings, January 1	$ 525,000	$ 376,500	$ 148,500	39.4%
Add: Net income	263,800	208,500	55,300	26.5%
	788,800	585,000	203,800	
Deduct: Dividends	61,200	60,000	1,200	2.0%
Retained earnings, December 31	$ 727,600	$ 525,000	$ 202,600	38.6%

VERTICAL ANALYSIS

Financial statement elements are measured as a percent of the total.

Balance Sheet	**Income Statement**
Elements are a percent of total assets	Elements are a percent of total sales

VERTICAL ANALYSIS OF BALANCE SHEET

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets
December 31

	2003		2002	
	Amount	Percent	Amount	Percent
Assets				
Current assets	$ 1,020,000	55.6%	$ 945,000	59.2%
Plant assets (net)	800,000	43.6%	632,500	39.7%
Intangible assets	15,000	0.8%	17,500	1.1%
Total assets	$ 1,835,000	100.0%	$ 1,595,000	100.0%
Liabilities				
Current liabilities	$ 344,500	18.8%	$ 303,000	19.0%
Long-term liabilities	487,500	26.5%	497,000	31.2%
Total liabilities	832,000	45.3%	800,000	50.2%
Stockholders' Equity				
Common stock, $1 par	275,400	15.0%	270,000	16.9%
Retained earnings	727,600	39.7%	525,000	32.9%
Total stockholders' equity	1,003,000	54.7%	795,000	49.8%
Total liabilities and stockholders' equity	$ 1,835,000	100.0%	$1,595,000	100.0%

VERTICAL ANALYSIS
OF BALANCE SHEET

QUALITY DEPARTMENT STORE INC.
Condensed Income Statements
For the Years Ended December 31

	2003		2002	
	Amount	Percent	Amount	Percent
Sales	$ 2,195,000	104.7%	$ 1,960,000	106.7%
Sales returns and allowances	98,000	4.7%	123,000	6.7%
Net sales	2,097,000	100.0%	1,837,000	100.0%
Cost of goods sold	1,281,000	61.1%	1,140,000	62.1%
Gross profit	816,000	38.9%	697,000	37.9%
Selling expenses	253,000	12.0%	211,500	11.5%
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Other expenses and losses				
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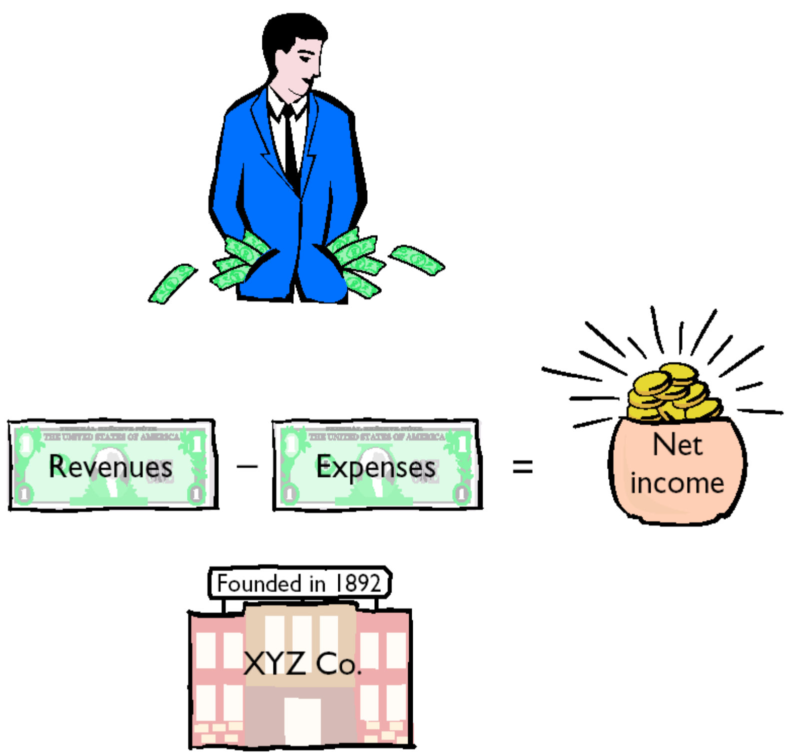
Income tax expense	168,200	8.0%	139,000	7.5%
Net income	$ 263,800	12.6%	$ 208,500	11.4%

RATIO ANALYSIS



Liquidity Ratios

Measures of short-term ability of the enterprise to pay its maturing obligations and to meet unexpected needs for cash

Profitability Ratios

Measures of the income or operating success of an enterprise for a given period of time

Solvency Ratios

Measures of the ability of the enterprise to survive over a long period of time

Ratio Analysis

- Profitability Ratios
  - Reveals a company's ability to generate profits
- Turnover Ratios
  - Reveals the company's efficiency with regard to the use of its assets
- Debt-Related Ratios
  - Reveals a company's ability to re-pay its obligations

Profitability Ratios

- Earnings Per Share (EPS)
  - Measures the earnings per each share of common stock outstanding
- Price-Earnings Ratio (PE)
  - Measures an investor's expectations of future profitability
- Gross Margin Percentage
  - Estimates the incremental profit generated by each dollar of sales
- Return on Total Assets
  - Measures the net income generated for each dollar invested in assets
- Return on Common Stockholders' Equity
  - Measures the net income generated for each dollar invested by the shareholders

Profitability Ratio Formulas

Earnings per share	(Net income − Preferred dividends) ÷ Number of common shares outstanding
Price-earnings ratio	Market price per share ÷ Earnings per share
Gross margin percentage	Gross margin ÷ Net sales
Return on total assets	[Net income + (Interest expense × (1 − Tax rate))] ÷ Total assets
Return on common stockholders' equity	(Net income − Preferred dividends) ÷ Common stockholders' equity

Turnover Ratios

- Asset Turnover
  - Measures how efficiently assets are utilized
- Accounts Receivable Turnover
  - Measures the number of times each year receivables are collected
- Days' Sales in Receivables
  - Measures the average number of days necessary to collect credit sales
- Inventory Turnover
  - Measures the number of times each year inventory is sold
- Days' Sales in Inventory
  - Measures the average number of days necessary to sell all inventory

Turnover Ratio Formulas

Asset turnover	Net sales ÷ Total assets
Accounts receivable turnover	Net credit sales ÷ Accounts receivable
Days' sales in receivables	365 ÷ Accounts receivable turnover
Inventory turnover	Cost of goods sold ÷ Inventory
Days' sales in inventory	365 ÷ Inventory turnover

Debt-Related Ratios

- Current Ratio
  - Measures a company's ability to meet short-term obligations
- Acid-Test Ratio (Quick Ratio)
  - More stringent measure of the current ratio
- Debt-to-Equity Ratio
  - Assesses the company's debt position
- Times Interest Earned
  - Measures a company's ability to re-pay long-term debt

Debt-Related Ratios

Current ratio	Current assets ÷ Current liabilities
Acid test (Quick ratio)	[(Cash + Marketable securities) + Short-term receivables] ÷ Current liabilities
Debt-to-equity ratio	Total liabilities ÷ Stockholders' equity
Times interest earned	Operating income ÷ Interest expense

Summary of Ratio Formulas

Profitability Ratios	
Earnings per share	(Net income − Preferred dividends) ÷ Number of common shares outstanding
Price–earnings ratio	Market price per share ÷ Earnings per share
Gross margin percentage	Gross margin ÷ Net sales
Return on total assets	[Net income + (Interest expense × (1 − Tax rate))] ÷ Total assets
Return on common stockholders' equity	(Net income − Preferred dividends) ÷ Common stockholders' equity
Turnover Ratios	
Asset turnover	Net sales ÷ Total assets
Accounts receivable turnover	Net credit sales ÷ Accounts receivable
Days' sales in receivables	365 ÷ Accounts receivable turnover
Inventory turnover	Cost of goods sold ÷ Inventory
Days' sales in inventory	365 ÷ Inventory turnover
Debt Related Ratios	
Current ratio	Current assets ÷ Current liabilities
Acid test (Quick ratio)	[(Cash + Marketable securities) + Short-term receivables] ÷ Current liabilities
Debt-to-equity ratio	Total liabilities ÷ Stockholders' equity
Times interest earned	Operating income ÷ Interest expense

LIMITATIONS OF F/S ANALYSIS

Estimates	Depreciation, allowances, contingencies
Cost	Historical data not adjusted for inflation/deflation
Alternative methods	FIFO, LIFO, Average Cost. Completed contract, percentage of completion
Atypical data	Seasonal accounting data may not be representative
Firm diversification	Conglomerates hard to identify with single industry.