

Financial Statement Analysis

The Interrelationships of the 4 Financial Statements

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

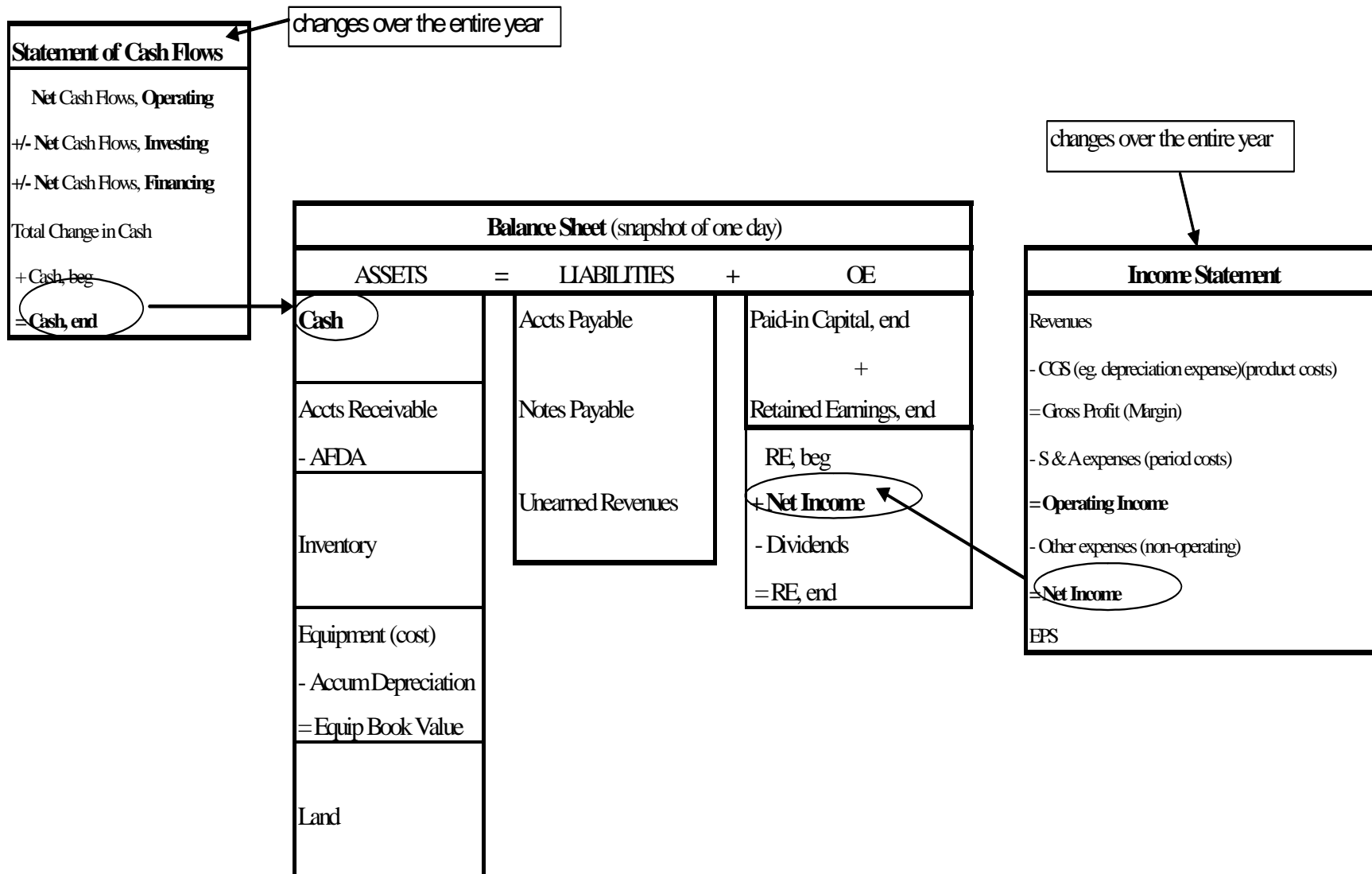
Statement of Cash Flows	
For the year ended December 31, 20x2	
	(000)
Net cash flows from operating activities	\$ 1,470
Net cash used by investing activities	\$ (4,100)
Net cash provided by financing activities	\$ 2,750
Increase in cash balance	\$ 120
Beginning cash balance (12/31/x1)	\$ 100
Ending cash balance (12/31/x2)	\$ 220

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.

**Change
since base
period**

=

Current year amount — Base year amount

Base year amount

HORIZONTAL ANALYSIS OF BALANCE SHEET

QUALITY DEPARTMENT STORE INC.

Condensed Balance Sheets
December 31

	<u>2003</u>	<u>2002</u>	<u>Increase or (Decrease) during 2003</u>	
			<u>Amount</u>	<u>Percent</u>
<u>Assets</u>				
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	<u>\$1,835,000</u>	<u>\$1,595,000</u>	<u>\$240,000</u>	<u>15.0%</u>
<u>Liabilities</u>				
Current liabilities	\$ 344,500	\$ 303,000	\$ 41,500	13.7%
Long-term liabilities	487,500	497,000	(9,500)	(1.9%)
Total liabilities	<u>832,000</u>	<u>800,000</u>	<u>32,000</u>	<u>4.0%</u>
<u>Stockholders' Equity</u>				
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	<u>1,003,000</u>	<u>795,000</u>	<u>208,000</u>	<u>26.2%</u>
Total liabilities and stockholders' equity	<u>\$1,835,000</u>	<u>\$1,595,000</u>	<u>\$240,000</u>	<u>15.0%</u>

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	<u>\$ 263,800</u>	<u>\$ 208,500</u>	<u>\$ 55,300</u>	<u>26.5%</u>

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

	2003	2002	Increase or (Decrease) during 1999	
			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	<u>\$ 727,600</u>	<u>\$ 525,000</u>	<u>\$ 202,600</u>	<u>38.6%</u>

VERTICAL ANALYSIS

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

<u>Balance Sheet</u>	<u>Income Statement</u>
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	<u>\$ 1,835,000</u>	<u>100.0%</u>	<u>\$ 1,595,000</u>	<u>100.0%</u>
Liabilities				
Current liabilities	\$ 344,500	18.8%	\$ 303,000	19.0%
Long-term liabilities	487,500	26.5%	497,000	31.2%
Total liabilities	<u>832,000</u>	<u>45.3%</u>	<u>800,000</u>	<u>50.2%</u>
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	<u>1,003,000</u>	<u>54.7%</u>	<u>795,000</u>	<u>49.8%</u>
Total liabilities and stockholders' equity	<u>\$ 1,835,000</u>	<u>100.0%</u>	<u>\$1,595,000</u>	<u>100.0%</u>

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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Income from operations	459,000	21.9%	377,000	20.5%
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Net income	\$ 263,800	12.6%	\$ 208,500	11.4%

RATIO ANALYSIS

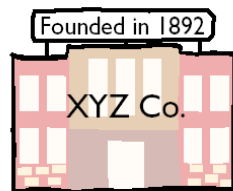


Revenues

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Expenses

=



Liquidity Ratios

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

Profitability Ratios

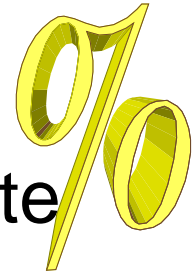
Measures of the income or operating success of an enterprise for a given period of time

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	$\frac{(\text{Net income} - \text{Preferred dividends})}{\div \text{Number of common shares outstanding}}$
Price-earnings ratio	$\text{Market price per share} \div \text{Earnings per share}$
Gross margin percentage	$\text{Gross margin} \div \text{Net sales}$
Return on total assets	$\frac{[\text{Net income} + (\text{Interest expense} \times (1 - \text{Tax rate}))]}{\div \text{Total assets}}$
Return on common stockholders' equity	$\frac{(\text{Net income} - \text{Preferred dividends})}{\div \text{Common stockholders' equity}}$

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	$\text{Net sales} \div \text{Total assets}$
Accounts receivable turnover	$\text{Net credit sales} \div \text{Accounts receivable}$
Days' sales in receivables	$365 \div \text{Accounts receivable turnover}$
Inventory turnover	$\text{Cost of goods sold} \div \text{Inventory}$
Days' sales in inventory	$365 \div \text{Inventory turnover}$

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

Summary of Ratio Formulas

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

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.