

Investment Redux Ratio Analysis

Presented by:

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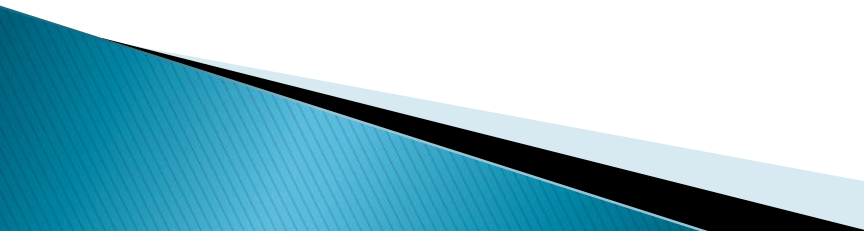
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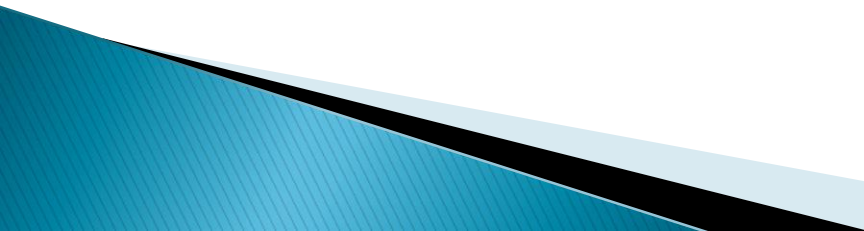
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Ratio Analysis

- ▶ Ratios also allow for better comparison through time or between companies.
 - ▶ As we look at each ratio, ask yourself:
 - How is the ratio computed?
 - What is the ratio trying to measure and why?
 - What is the unit of measurement?
 - What does the value indicate?
 - How can we improve the company's ratio?
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Categories of Financial Ratios

- ▶ Short-term solvency or liquidity ratios
 - ▶ Long-term solvency or financial leverage ratios
 - ▶ Asset management or turnover ratios
 - ▶ Profitability ratios
 - ▶ Market value ratios
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Financial Statements

PRUFROCK CORPORATION 2006 and 2007 Balance Sheets (\$ in millions)			
	2006	2007	Change
Assets			
Current assets			
Cash	\$ 84	\$ 98	+\$ 14
Accounts receivable	165	188	+ 23
Inventory	393	422	+ 29
Total	<u>\$ 642</u>	<u>\$ 708</u>	<u>+\$ 66</u>
Fixed assets			
Net plant and equipment	<u>\$2,731</u>	<u>\$2,880</u>	<u>+\$149</u>
Total assets	<u>\$3,373</u>	<u>\$3,588</u>	<u>+\$215</u>
Liabilities and Owners' Equity			
Current liabilities			
Accounts payable	\$ 312	\$ 344	+\$ 32
Notes payable	231	196	- 35
Total	<u>\$ 543</u>	<u>\$ 540</u>	<u>-\$ 3</u>
Long-term debt	<u>\$ 531</u>	<u>\$ 457</u>	<u>-\$ 74</u>
Owners' equity			
Common stock and paid-in surplus	\$ 500	\$ 550	+\$ 50
Retained earnings	1,799	2,041	+ 242
Total	<u>\$2,299</u>	<u>\$2,591</u>	<u>+\$292</u>
Total liabilities and owners' equity	<u>\$3,373</u>	<u>\$3,588</u>	<u>+\$215</u>

PRUFROCK CORPORATION 2007 Sources and Uses of Cash (\$ in millions)	
Cash, beginning of year	\$ 84
Sources of cash	
Operations:	
Net income	\$363
Depreciation	276
	<u>\$639</u>
Working capital:	
Increase in accounts payable	\$ 32
Long-term financing:	
Increase in common stock	50
Total sources of cash	<u>\$721</u>
Uses of cash	
Working capital:	
Increase in accounts receivable	\$ 23
Increase in inventory	29
Decrease in notes payable	35
Long-term financing:	
Decrease in long-term debt	74
Fixed asset acquisitions	425
Dividends paid	121
Total uses of cash	<u>\$707</u>
Net addition to cash	<u>\$ 14</u>
Cash, end of year	<u>\$ 98</u>

PRUFROCK CORPORATION 2007 Statement of Cash Flows (\$ in millions)	
Cash, beginning of year	\$ 84
Operating activity	
Net income	363
Plus:	
Depreciation	276
Increase in accounts payable	32
Less:	
Increase in accounts receivable	- 23
Increase in inventory	- 29
Net cash from operating activity	<u>\$619</u>
Investment activity	
Fixed asset acquisitions	-\$425
Net cash from investment activity	<u>-\$425</u>
Financing activity	
Decrease in notes payable	-\$ 35
Decrease in long-term debt	- 74
Dividends paid	- 121
Increase in common stock	50
Net cash from financing activity	<u>-\$180</u>
Net increase in cash	<u>\$ 14</u>
Cash, end of year	<u>\$ 98</u>

PRUFROCK CORPORATION 2007 Income Statement (\$ in millions)	
Sales	\$2,311
Cost of goods sold	1,344
Depreciation	276
Earnings before interest and taxes	\$ 691
Interest paid	141
Taxable income	\$ 550
Taxes (34%)	187
Net income	<u>\$ 363</u>
Dividends	\$121
Addition to retained earnings	242

Computing Liquidity Ratios

- ▶ Current Ratio = CA / CL
 - $708 / 540 = 1.31$ times
- ▶ Quick Ratio = $(CA - \text{Inventory}) / CL$
 - $(708 - 422) / 540 = .53$ times
- ▶ Cash Ratio = Cash / CL
 - $98 / 540 = .18$ times

Computing Leverage Ratios

- ▶ Total Debt Ratio = $(TA - TE) / TA$
 - $(3588 - 2591) / 3588 = 28\%$
- ▶ Debt/Equity = TD / TE
 - $(3588 - 2591) / 2591 = 38.5\%$
- ▶ Equity Multiplier = $TA / TE = 1 + D/E$
 - $1 + .385 = 1.385$

Computing Coverage Ratios

- ▶ Times Interest Earned = $\text{EBIT} / \text{Interest}$
 - $691 / 141 = 4.9$ times
- ▶ Cash Coverage = $(\text{EBIT} + \text{Depreciation} + \text{Amortization}) / \text{Interest}$
 - $(691 + 276) / 141 = 6.9$ times

Computing Inventory Ratios

- ▶ Inventory Turnover = Cost of Goods Sold / Inventory
 - $1344 / 422 = 3.2$ times
- ▶ Days' Sales in Inventory = $365 /$ Inventory Turnover
 - $365 / 3.2 = 114$ days

Computing Receivables Ratios

- ▶ Receivables Turnover = Sales / Accounts Receivable
 - $2311 / 188 = 12.3$ times
- ▶ Days' Sales in Receivables = $365 /$ Receivables Turnover
 - $365 / 12.3 = 30$ days

Computing Total Asset Turnover

- ▶ Total Asset Turnover = Sales / Total Assets
 - $2311 / 3588 = .64$ times
 - It is not unusual for TAT < 1, especially if a firm has a large amount of fixed assets.

Computing Profitability Measures

- ▶ Profit Margin = Net Income / Sales
 - $363 / 2311 = 15.7\%$
- ▶ Return on Assets (ROA) = Net Income / Total Assets
 - $363 / 3588 = 10.1\%$
- ▶ Return on Equity (ROE) = Net Income / Total Equity
 - $363 / 2591 = 14.0\%$
- ▶ EBITDA Margin = EBITDA / Sales
 - $967 / 2311 = 41.8\%$

DuPont Identity

$$\text{ROE} = \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

Assets / Equity
ratio

Computing Market Value Measures

- ▶ Market Capitalization = \$88 per share x 33 million shares = 2904 million
- ▶ PE Ratio = Price per share / Earnings per share
 - $88 / 11 = 8$ times
- ▶ Market-to-book ratio = market value per share / book value per share
 - $88 / (2591 / 33) = 1.12$ times
- ▶ Enterprise Value (EV) = Market capitalization + Market value of interest bearing debt - cash
 - $2904 + (196 + 457) - 98 = 3465$
- ▶ EV Multiple = EV / EBITDA
 - $3465 / 967 = 3.6$ times

Using Financial Statements

- ▶ Ratios are not very helpful by themselves: they need to be compared to something
 - ▶ Time–Trend Analysis
 - Used to see how the firm’s performance is changing through time
 - ▶ Peer Group Analysis
 - Compare to similar companies or within industries
 - SIC and NAICS codes
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