Measures of Liquidity

Financial Statement Analysis

Ratio Analysis

Comparisons of information provided in the financial statements designed to provide insights on a company's financial status and prospects for the future.

Measures of Liquidity

(Liquidity refers to a company's ability to meet its short-term obligations.)

Current Ratio: $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

20X1: $\frac{41,817}{21,015} = 1.99$

20X2: $\frac{86,673}{43,516} = 1.99$

Hot Cars, Inc.
Balance Sheet
December 31, 20X1 and 20X2

ASSETS	12/31/X1	12/31/X2
Current Assets:		
Cash	$12,665	$21,808
Accounts Receivable	11,750	34,315
Inventory	11,432	25,000
Office Supplies	470	750
Prepaid Insurance	350	400
Prepaid Rent	4,400	4,400
Notes Receivable	750	0
	41,817	86,673
Long-Term Assets:		
Warehouse Equipment	14,700	37,394
Total Assets	$56,517	$124,067

LIABILITIES & STOCKHOLDER'S EQUITY	12/31/X1	12/31/X2
Current Liabilities:		
Accounts Payable	$13,511	$22,250
Salaries Payable	4,125	0
Income Tax Payable	1,644	6,408
Dividend Payable	1,250	0
Unearned Rent Revenue	0	280
Utilities Payable	485	400
Interest Payable	0	178
Current Portion of Notes Payable	0	14,000
	21,015	43,516
Long-Term Liabilities:		
Notes Payable	0	8,000
Total Liabilities	21,015	51,516
Stockholder's Equity:		
Capital Stock (2,400 and 4,250 shares outstanding)	24,000	42,500
Retained Earnings	11,502	30,051
Total Stockholder's Equity	35,502	72,551
Total Liabilities and Stockholder's Equity	$56,517	$124,067

Acid Test Ratio (Quick Ratio):

$\frac{\text{Selected Current Assets}}{\text{Current Liabilities}}$

20X1: $\frac{24,415}{21,015} = 1.16$

20X2: $\frac{56,123}{43,516} = 1.29$

Cash Only Acid Test Ratio:

20X1: $\frac{12,665}{21,015} = 0.60$

20X2: $\frac{21,808}{43,516} = 0.50$

- **Is it possible for a company to have an acid test ratio, or even a current ratio less than 1 to 1 and still have adequate liquidity for ongoing operations?**

Balance Sheet

Current Assets:		Current Liabilities:	
Cash	$ 10,000	A/P	$ 25,000
A/R	20,000	Wage Payable	5,000
Inventory	40,000	Other Payables	5,000
	$ 70,000	Notes Payable	50,000
			$ 85,000

Measures of Leverage

Measure of Leverage

(Leverage is the measure of a company's debt relative to equity financing)

Debt Ratio (Debt to Total Asset Ratio):

$$\frac{\text{Total Liabilities}}{\text{Total Assets}}$$

20X1: $\frac{\$21,015}{\$56,517} = .37$

20X2: $\frac{\$51,516}{\$124,067} = .42$

Example: **A home is purchased for $300,000 with $30,000 cash downpayment and a $270,000 mortgage note payable.**

$$\frac{\text{Debt}}{\text{Asset}} = \frac{\$270,000}{\$300,000} = 90\% \text{ Leverage}$$

$$\frac{\$300,000}{\$300,000} = 100\% \text{ Leverage}$$

Debt to Equity Ratio:

$$\frac{\text{Total Liabilities}}{\text{Total Owners' Equity}}$$

20X1: $\frac{21,015}{35,502} = .59$

20X2: $\frac{51,516}{72,551} = .71$

Assume: $\frac{\text{Debt}}{\text{Equity}} = \frac{21,015}{21,015} = 1.00$ or $\frac{1}{1}$

Measures of Management

Measures of Management

Control of Accounts Receivable-

Accounts Receivable Turnover:

$$\frac{\text{Net Credit Sales Revenues}}{\text{Average Balance of A/R during the Period}}$$

Average Balance of A/R during the Period:

$$\frac{\text{Cumulative Daily Ending Balance of A/R}}{\text{365 Days}}$$

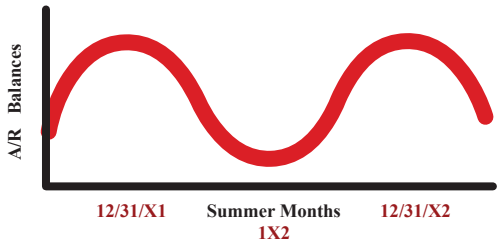
$$\frac{\text{Cumulative Monthly Ending Balance of A/R}}{\text{12 Months}}$$

$$\frac{\text{Beginning Balance + Ending Balance of A/R}}{2}$$

20X1: $\dfrac{185{,}043}{\left(\frac{11{,}750+11{,}750}{2}\right)}$ = 15.7 times

20X2: $\dfrac{261{,}950}{\left(\frac{11{,}750+11{,}750}{2}\right)}$ = 11.37 times

A/R Balances



12/31/X1 Summer Months 12/31/X2
1X2

Hot Cars, Inc.
Income Statement
for the years ended December 31, 20X1 and 20X2

	20X1	20X2
Sales Revenue	$185,043	$261,950
Cost of Goods Sold	111,026	164,026
Gross Margin	74,017	97,924
Operating Expenses:		
Salaries Expense	49,500	53,600
Office Supplies Expense	3,893	3,958
Rent Expense	4,150	4,800
Utilities Expense	6,345	6,850
Misc. Expense	2,336	1,952
Insurance Expense	1,055	1,105
Postage Expenses	298	321
Operating Expenses	67,577	72,586
Operating Income	6,440	25,338
Other Revenues and Expenses		
Rental Revenue	0	420
Interest Revenue	135	52
Other Revenue	135	472
Less: Interest Expense	0	178
Other Revenue (Expenses)	135	294
Income Before Income Taxes	6,575	25,632
Less: Income Taxes	1,644	6,408
Net Income (Loss)	$4,931	$19,224
Earnings Per Share	$2.05	$4.52

Days Sales in A/R

(Average Collection Period):

$$\frac{\text{365 Days}}{\text{A/R Turnover}}$$

20X1: $\dfrac{365}{15.75}$ = 23.18 days

20X2: $\dfrac{365}{11.37}$ = 32.10 days

Management of Inventory

Inventory Turnover:

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory Balance during the Period}}$$

Average Inventory Balance during the Period:

$$\frac{\text{Cumulative Daily Balance of Ending Inventory}}{\text{365 Days}}$$

$$\frac{\text{Beginning + Ending Balance of Inventory}}{2}$$

20X1: $\dfrac{\$111{,}026}{\$11{,}432}$ = 9.71 times

20X2: $\dfrac{\$164{,}026}{\left(\frac{\$11{,}432+\$25{,}000}{2}\right)}$ = 9.01 times

Days Sales in Inventory

(Average Inventory Holding Period):

$$\frac{\text{365}}{\text{Inventory Turnover}}$$

20X1: $\dfrac{365}{9.71}$ = 37.59 days

20X2: $\dfrac{365}{9.01}$ = 40.51 days

Measures of Profitability

Measure of Profitability

Earnings Per Share (EPS):

$$\frac{\text{Net Income}}{\text{\# of Shares of Stock Outstanding}}$$

Measures of Stock Value

Measures of Stock Value

Book Value Per Share:

$$\frac{\text{Owners' Equity}}{\text{\# Shares of Stock Outstanding}}$$

20X2: $\frac{72{,}551}{4{,}250}$ = $ 17.07 per share

Is Eric's proposal an offer to sell 1,000 shares of the 4,250 shares he already owns? Eric's contribution to the company for these shares was $10 per share.

Eric's profit on sale of 1,000 shares:

Sales Price Per Share	$ 60
Less: Contribution Per Share	(10)
Profit Per Share	50
	x 1,000
Eric's Total Profit	$50,000

Percentage of ownership if 1,000 shares is purchased from Eric.

$\frac{\text{1,000 shares}}{\text{4,250 shares}}$ = 23.5%

Is Eric's proposal to issue 1,000 new shares of HCI stock?

Percentage of ownership if 1,000 new shares issued by HCI:

$\frac{\text{1,000 shares}}{\text{5,250 shares}}$ = 19.1%

Price Earnings Ratio (P/E Ratio):

$$\frac{\text{Market Price Per Share}}{\text{EPS}}$$

12/31/X2: $\frac{\$60}{\$4.52}$ = 13.27

1. For every $1 of earnings the stock has a price (value) of $13.27.
2. A stock is selling at a multiple of 13.27 times its most recent earnings.

Net Income as a % of Investment

$$\frac{\text{EPS}}{\text{Market Price Per Share}}$$

20X2: $\frac{\$4.52}{\$60}$ = 7.5%

20X3: $\frac{\$9.04}{\$60}$ = 15.1%

20X4: $\frac{\$18.08}{\$60}$ = 30.1%

Price Earnings Ratio (P/E Ratio)

$$\frac{\text{Market Price Per Share}}{\text{EPS}}$$

20X2: $\frac{\$60}{\$4.52}$ = 13.27

The P/E ratio serves as an index of the investor's expectations of a company's earnings potential in the future.

YTD % Chg	52-Week Hi	52-Week Lo	Stock (SYM)	Div	Yld %	PE	Vol 100$	Close	Net Chg
-11.5	46.56	26.50	**Mattel** (MAT)	.32	.9	23	15499	35.81	-0.94
5.4	70.86	49.75	**MayDeptStrs** (MAY)	1.27	2.1	18	8978	60.25	1.25
20.6	55.75	30.60	**Maytag** (MYG)	.721	1.5	17	7625	48.50	0.25
-25.4	43.87	19.25	**McDermint** (MDR)	.20	.7	8	1235	28.76	-1.12
20.7	74.90	42.20	**McDonalds** (MCD)	.36	.5	29	18800	67.25	1.85

Measures of Stock Value

If HCI is a growth company, what is its stock's value?

P/E Ratio			
25	x 4.52	=	$113
40	x 4.52	=	$180

If EPS projections for

EPS				
20X3:	$9.04			
20X4:	$18.08	x 25 PE	=	$452

Vertical Analysis

Hot Cars, Inc.
Income Statement
for the years ended December 31, 20X1 and 20X2

	20X1	20X2	
Sales Revenue	$185,043	$261,950	$261,950 - $185,043 / $185,043 = 41.6%
Cost of Goods Sold	111,026	164,026	
Gross Margin	74,017	97,924	
Operating Expenses:			
Salaries Expense	49,500	53,600	
Office Supplies Expense	3,893	3,958	
Rent Expense	4,150	4,800	
Utilities Expense	6,345	6,850	
Misc. Expense	2,336	1,952	
Insurance Expense	1,055	1,105	
Postage Expenses	298	321	
Operating Expenses	67,577	72,586	
Operating Income	6,440	25,338	
Other Revenues and Expenses			
Rental Revenue	0	420	
Interest Revenue	135	52	
Other Revenue	135	472	
Less: Interest Expense	0	178	
Other Revenue (Expenses)	135	294	
Income Before Income Taxes	6,575	25,632	
Less: Income Taxes	1,644	6,408	
Net Income (Loss)	$4,931	$19,224	$14,293 / $4,931 = 290%
Earnings Per Share	$2.05	$4.52	

Hot Cars Inc.
Income Statements
for the years ended December 31, 20X2 and 20X1

	20X1		20X2	
Sales Revenue	$185,043	100.0%	$261,950	100.0%
Cost of Goods Sold	111,026	60.0	164,026	62.6
Gross Margin	74,017	40.0	97,924	37.4
Operating Expenses:				
Salaries Expense	49,500	26.8%	53,600	20.5%
Office Supplies Expense	3,893	2.1	3,958	1.5
Rent Expense	4,150	2.2	4,800	1.8
Utilities Expense	6,345	3.4	6,850	2.6
Misc. Expense	2,336	1.3	1,952	0.8
Insurance Expense	1,055	0.6	1,105	0.4
Postage Expenses	298	0.2	321	0.1
Operating Expenses	67,577	36.5	72,586	27.7
Operating Income	6,440	3.5	25,338	9.7
Other Revenues and Expenses				
Rental Revenue	0	0.0%	420	0.2%
Interest Revenue	135	0.1	52	0.0
Other Revenue	135	0.1	472	0.2
Less: Interest Expense	0	0.0	178	0.1
Other Revenue (Expenses)	135	0.1	294	0.1
Income Before Income Taxes	6,575	3.6	25,632	9.8
Less: Income Taxes	1,644	0.9	6,408	2.4
Net Income (Loss)	$4,931	2.7	$19,224	7.3
Earnings Per Share	$2.05		$4.52	