Investment Redux

Financial Statement Review

Class 2

March 20, 2014

Sample Balance Sheet

Numbers in millions

	2003	2002		2003	2002
Cash	696	58	A/P	307	303
A/R	956	992	N/P	26	119
Inventory	301	361	Other CL	1,662	1,353
Other CA	303	264	Total CL	1,995	1,775
Total CA	2,256	1,675	LT Debt	843	1,091
Net FA	3,138	3,358	C/S	2,556	2,167
Total Assets	5,394	5,033	Total Liab. & Equity	5,394	5,033

Sample Income Statement

Numbers in millions, except EPS & DPS

Revenues		5,000
Cost of Goods Sold		2,006
Expenses		1,740
Depreciation		116
EBIT		1,138
Interest Expense		7
Taxable Income		1,131
Taxes		442
Net Income		689
EPS	3.61	
Dividends per share	1.08	

Sources and Uses

- Sources
  - Cash inflow – occurs when we “sell” something
  - Decrease in asset account (Sample B/S)
    - Accounts receivable, inventory, and net fixed assets
  - Increase in liability or equity account
    - Accounts payable, other current liabilities, and common stock
- Uses
  - Cash outflow – occurs when we “buy” something
  - Increase in asset account
    - Cash and other current assets
  - Decrease in liability or equity account
    - Notes payable and long-term debt

Statement of Cash Flows

- Statement that summarizes the sources and uses of cash
- Changes divided into three major categories
  - Operating Activity – includes net income and changes in most current accounts
  - Investment Activity – includes changes in fixed assets
  - Financing Activity – includes changes in notes payable, long-term debt and equity accounts as well as dividends

Sample Statement of Cash Flows

Numbers in millions

Cash, beginning of year	58	Financing Activity	
Operating Activity		Decrease in Notes Payable	-93
Net Income	689	Decrease in LT Debt	-248
Plus: Depreciation	116	Decrease in C/S (minus RE)	-94
Decrease in A/R	36	Dividends Paid	-206
Decrease in Inventory	60	Net Cash from Financing	-641
Increase in A/P	4	Net Increase in Cash	638
Increase in Other CL	309	Cash End of Year	696
Less: Increase in CA	-39		
Net Cash from Operations	1,175		
Investment Activity			
Sale of Fixed Assets	104		
Net Cash from Investments	104		

Standardized Financial Statements

- Common-Size Balance Sheets
  - Compute all accounts as a percent of total assets
- Common-Size Income Statements
  - Compute all line items as a percent of sales
- Standardized statements make it easier to compare financial information, particularly as the company grows
- They are also useful for comparing companies of different sizes, particularly within the same industry

Ratio Analysis

- Ratios also allow for better comparison through time or between companies
- As we look at each ratio, ask yourself what the ratio is trying to measure and why is that information is important
- Ratios are used both internally and externally

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

Computing Liquidity Ratios

- Current Ratio = CA / CL
  - 2256 / 1995 = 1.13 times
- Quick Ratio = (CA – Inventory) / CL
  - (2256 – 1995) / 1995 = .1308 times
- Cash Ratio = Cash / CL
  - 696 / 1995 = .35 times
- NWC to Total Assets = NWC / TA
  - (2256 – 1995) / 5394 = .05
- Interval Measure = CA / average daily operating costs
  - 2256 / ((2006 + 1740)/365) = 219.8 days

Computing Long-term Solvency Ratios

- Total Debt Ratio = (TA – TE) / TA
  - (5394 – 2556) / 5394 = 52.61%
- Debt/Equity = TD / TE
  - (5394 – 2556) / 2556 = 1.11 times
- Equity Multiplier = TA / TE = 1 + D/E
  - 1 + 1.11 = 2.11
- Long-term debt ratio = LTD / (LTD + TE)
  - 843 / (843 + 2556) = 24.80%

Computing Coverage Ratios

- Times Interest Earned = EBIT / Interest
  - 1138 / 7 = 162.57 times
- Cash Coverage = (EBIT + Depreciation) / Interest
  - (1138 + 116) / 7 = 179.14 times

Computing Inventory Ratios

- Inventory Turnover = Cost of Goods Sold / Inventory
  - 2006 / 301 = 6.66 times
- Days' Sales in Inventory = 365 / Inventory Turnover
  - 365 / 6.66 = 55 days

Computing Receivables Ratios

- Receivables Turnover = Sales / Accounts Receivable
  - 5000 / 956 = 5.23 times
- Days' Sales in Receivables = 365 / Receivables Turnover
  - 365 / 5.23 = 70 days

Computing Total Asset Turnover

- Total Asset Turnover = Sales / Total Assets
  - 5000 / 5394 = .93
  - It is not unusual for TAT < 1, especially if a firm has a large amount of fixed assets
- NWC Turnover = Sales / NWC
  - 5000 / (2256 – 1995) = 19.16 times
- Fixed Asset Turnover = Sales / NFA
  - 5000 / 3138 = 1.59 times

Computing Profitability Measures

- Profit Margin = Net Income / Sales
  - 689 / 5000 = 13.78%
- Return on Assets (ROA) = Net Income / Total Assets
  - 689 / 5394 = 12.77%
- Return on Equity (ROE) = Net Income / Total Equity
  - 689 / 2556 = 26.96%

Computing Market Value Measures

- Market Price = $87.65 per share
- Shares outstanding = 190.9 million
- PE Ratio = Price per share / Earnings per share
  - 87.65 / 3.61 = 24.28 times
- Market-to-book ratio = market value per share / book value per share
  - 87.65 / (2556 / 190.9) = 6.56 times

The DuPont Identity (1)

The DuPont Identity = Relationship of ROI and ROE:

ROI: Return on Investment (sometimes called ROA-return on assets): Initially compares income as a percentage of total investment, a basic measure of profitability

$$\text{ROI} = \frac{\text{Net Income}}{\text{Total Assets}}$$

The DuPont model divides this into two factors: profit margin & asset turnover, illustrating both profitability of operations (profit margin) and efficient use of assets (turnover)

$$\text{ROI} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}}$$

ROI = (Profit margin) x (Asset Turnover)

The DuPont Identity (2)

Return on Equity = basic measure of profitability on assets actually provided by owners of a firm:

$$ROE = \frac{\text{Net Income}}{\text{Owner's Equity}}$$

The DuPont identity combines ROI & ROE into a three part analysis:

$$ROE = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Owner's Equity}}$$

Or ROE = Return on Investment x Equity Multiplier

Or ROE = Profit Margin x Asset Turnover x Equity Multiplier

The DuPont Identity (3)

Putting it all together gives the DuPont identity:

ROE = ROA x Equity multiplier

= *Profit margin x Total asset turnover x Equity multiplier*

Profitability (or the lack thereof!) thus has three parts:

- Operating efficiency (profit margin)
- Asset use efficiency (asset turnover)
- Financial leverage (equity multiplier)

The DuPont Identity (4)

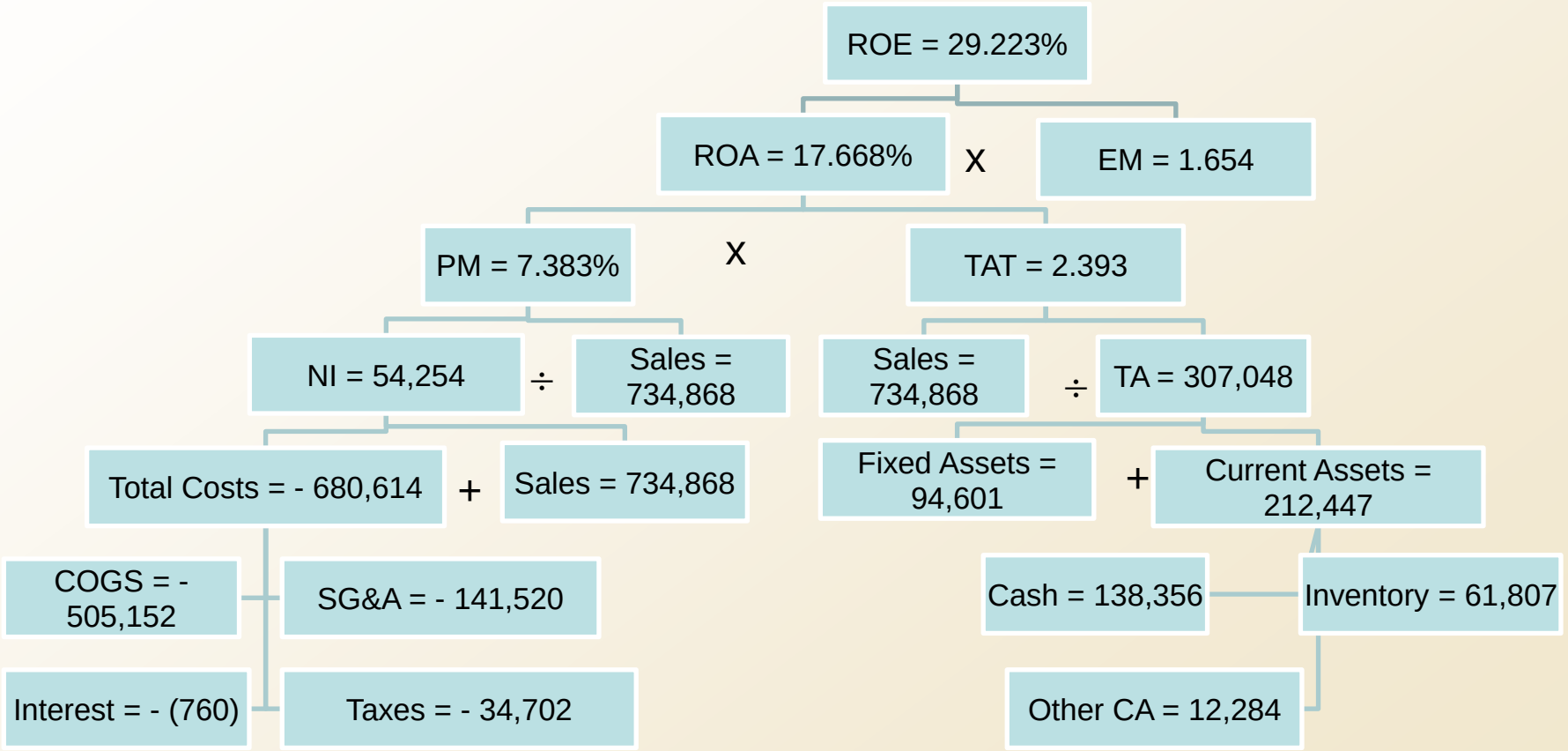
- To survive at all, the firm must be effective in its use of revenues to generate profits (**operating efficiency--profit margin**)
- To generate profitability, the firm must utilize its investment in assets wisely to convert revenues to profit **(asset turnover-efficiency)**
- But if a firm can generate a return on assets greater than its net borrowing costs, it can return profits to investors more effectively by **financial leverage—**using borrowed money to generate profits rather than tying up owners' funds **(equity multiplier)**

Expanded DuPont Analysis – Aeropostale Data

- Balance Sheet Data
  - Cash = 138,356
  - Inventory = 61,807
  - Other CA = 12,284
  - Fixed Assets = 94,601
  - EM = 1.654
- Computations
  - TA = 307,048
  - TAT = 2.393

- Income Statement Data
  - Sales = 734,868
  - COGS = 505,152
  - SG&A = 141,520
  - Interest = (760)
  - Taxes = 34,702
- Computations
  - NI = 54,254
  - PM = 7.383%
  - ROA = 17.668%
  - ROE = 29.223%

Aeropostale Extended DuPont Chart



Benchmarking

- 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
  - Internal and external uses
- Peer Group Analysis
  - Compare to similar companies or within industries
  - SIC and NAICS codes

Potential Problems

- There is no underlying theory, so there is no way to know which ratios are most relevant
- Benchmarking is difficult for diversified firms
- Globalization and international competition makes comparison more difficult because of differences in accounting regulations
- Varying accounting procedures, i.e. FIFO vs. LIFO
- Different fiscal years
- Extraordinary events