FN201: Lecture Note 2
Working with financial statements

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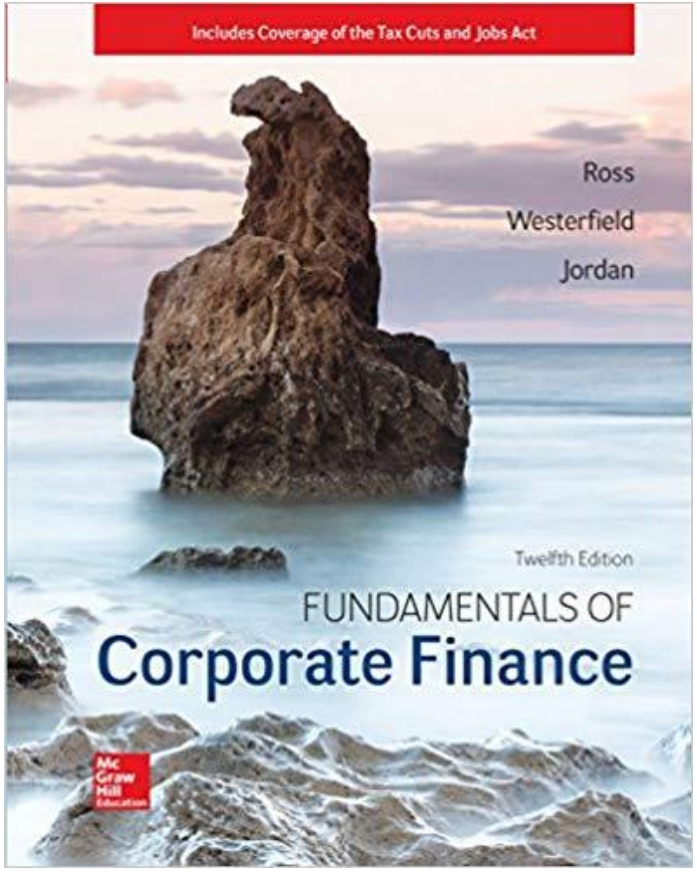
Reading

- Ross, S.A., Westerfield, R.W., Jordan, B.D., (2012). Fundamentals of Corporate Finance. 10th Edition. New York: McGraw-Hill/Irwin.

Chapter 3



Key Concepts and Skills

- Standardize financial statements for comparison purposes
- Compute, and more importantly, interpret some common ratios
- Name the determinants of a firm’s profitability
- Explain some of the problems and pitfalls in financial statement analysis

Outline

1. Standardized Financial Statements
2. Ratio Analysis and the DuPont Identity
3. Using Financial Statement Information

Sample Balance Sheet

	2018	2017		2018	2017
Cash	108	58	A/P	307	303
A/R	1,156	992	N/P	26	119
Inventory	501	361	Other CL	1,662	1,353
Other CA	403	264	Total CL	1,995	1,775
Total CA	2,168	1,675	LT Debt	843	1,091
Net FA	3,438	3,358	C/S	2,768	2,167
Total Assets	5,606	5,033	Total Liab. & Equity	5,606	5,033

Numbers in millions of dollars

Sample Income Statement

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		(238)
Net Income		893
EPS	4.68	
Dividends per share	1.53	

Numbers in millions of dollars, except EPS & DPS

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

Cash, beginning of year	58	Financing Activity	
Operating Activity		Decrease in Notes Payable	-93
Net Income	893	Decrease in LT Debt	-248
Plus: Depreciation	116	Change in C/S (less RE)	0
Increase in A/P	4	Dividends Paid	-292
Increase in Other CL	309	Net Cash from Financing	-633
Less: Increase in other CA	-139		
Increase in A/R	-164	Net Increase in Cash	50
Increase in Inventory	-140		
Net Cash from Operations	879	Cash End of Year	108
Investment Activity			
Purchase of Fixed Assets	-196		
Net Cash from Investments	-196		

Numbers in millions of dollars

Why Evaluate Financial Statements?

- Internal uses
  - Performance evaluation – compensation and comparison between divisions
  - Planning for the future – guide in estimating future cash flows
- External uses
  - Creditors
  - Suppliers
  - Customers
  - Stockholders

1. Standardized Financial Statements

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.

Common-size Balance Sheet

	Dec-09	(%)	Dec-08	(%)
Assets				
Current assets:				
Cash	25	4.35	20	3.88
Marketable securities	25	4.35	0	0.00
Receivables	150	26.09	125	24.27
Inventory	125	21.74	130	25.24
Total current assets	325	56.52	275	53.40
Fixed assets:				
Property, plant, and equipment	350	60.87	320	62.14
Less accumulated depreciation	100	17.39	80	15.53
Net fixed assets	250	43.48	240	46.60
Total assets	**575.0**	**100.00**	**515**	**100.00**

Common-size Balance Sheet

	Industrials	Paper	Oil	Chemicals	Metals	Machinery	Pharmaceuticals	Computers	Software	Semiconductors	Telecoms	Utilities	Food	Retail
Assets:														
Cash & securities	14	5	7	6	11	12	25	26	31	43	3	2	4	12
Receivables	12	14	11	15	15	18	10	17	13	11	5	7	11	7
Inventory	9	10	4	11	14	13	9	6	1	9	1	2	11	27
Other current assets	4	2	2	3	4	5	5	6	5	4	3	7	3	3
Total current assets	39	31	23	34	43	48	49	54	49	66	12	18	28	49
Fixed assets	54	78	104	90	63	38	33	25	20	43	121	88	58	61
Depreciation	25	41	39	55	35	21	13	14	11	25	73	31	30	25
Net fixed assets	29	37	65	36	27	17	20	11	9	19	49	57	28	36
Other long-term assets	32	32	12	30	30	35	31	35	43	16	40	25	44	16
Total assets	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Liabilities:														
Short-term debt	3	5	1	6	2	5	5	2	1	1	3	5	6	2
Payables	8	8	12	7	9	7	3	13	3	9	3	4	7	16
Other current liabilities	13	11	8	10	11	12	13	19	22	11	8	10	11	13
Total current liabilities	24	24	21	23	22	24	21	34	26	21	14	19	24	31
Long-term debt	18	24	17	22	18	14	12	8	7	8	31	32	28	14
Other long-term liabilities	14	15	19	22	17	10	7	10	12	3	21	26	14	7
Equity	45	37	44	33	43	51	59	49	55	69	34	23	33	48
Total liabilities	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Common-size Income statement

	Dec-09	(%)	Dec-08	(%)
Liabilities and Shareholders' Equity				
Current liabilities:				
Debt due within 1 year	0	0.00	25	4.85
Payables	135	23.48	110	21.36
Total current liabilities	135	23.48	135	26.21
Long-term debt	**90**	**15.65**	**60**	**11.65**
Shareholders' equity	350	60.87	320	62.14
Total liabilities and shareholders' equity	**575**	**100.00**	**515**	**100.00**

Common-size Income statement

	Industrials	Paper	Oil	Chemicals	Metals	Machinery	Pharmaceuticals	Computers	Software	Semiconductors	Telecoms	Utilities	Food	Retail
Revenues	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Costs	79.1	83.4	63.0	81.1	84.2	83.2	68.9	84.1	77.6	73.6	60.9	76.5	82.7	90.1
Depreciation	5.5	4.9	10.3	5.9	3.4	3.7	6.3	3.5	5.1	7.1	18.4	9.1	3.9	2.3
EBIT	15.4	11.7	26.7	13.0	12.4	13.0	24.8	12.4	17.3	19.2	20.7	14.4	13.4	7.5
Interest	2.0	2.0	3.0	2.0	1.2	1.2	1.1	0.7	0.5	0.5	6.2	6.8	2.0	0.6
Nonoperating income & special items	0.0	−0.3	−0.1	−0.9	−0.3	0.4	−1.2	0.1	0.6	0.2	0.8	2.7	0.0	0.2
Pretax income	13.4	9.3	23.6	10.1	11.0	12.2	22.5	11.8	20.3	18.9	15.2	10.2	11.4	7.1
Tax	4.4	2.5	8.6	3.0	2.8	3.3	6.5	3.2	6.8	5.2	5.1	3.3	3.5	2.4
Minority interests	0.1	0.1	0.1	0.2	0.5	0.0	0.2	0.0	0.1	−0.1	0.5	−0.2	0.1	0.0
Net income	8.9	6.7	14.9	6.9	7.7	8.8	15.8	8.5	13.4	13.8	9.5	7.0	7.8	4.7

2. Ratio Analysis and DuPont Identity

Ratio Analysis

- Ratios 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 that information is important.
- Ratios are used both internally and externally.

Categories of Financial Ratios

1. Short-term solvency, or liquidity, ratios
2. Long-term solvency, or financial leverage, ratios
3. Asset management, or turnover, ratios
4. Profitability ratios
5. Market value ratios

1. Liquidity Ratios

- Current Ratio = CA / CL

- Quick Ratio = (CA - Inventory) / CL

- Cash Ratio = Cash / CL

2. Long-term Solvency Ratios

- Total Debt Ratio = (TA - TE) / TA
- Debt/Equity = TD / TE
- Equity Multiplier = TA / TE = 1 + D/E
- Long-term debt ratio = LTD / (LTD + TE)

2. Long-term Solvency Ratios

- Times Interest Earned = EBIT / Interest

- Cash Coverage = (EBIT + Depreciation) / Interest

3. Asset management / turnover ratios

- Account receivable turnover $= \dfrac{\text{Sale}}{\text{Account Receivable}}$
- Account receivable days / Collection period / Days sales outstanding

$$= \frac{\text{365 days (for 1 year)}}{\text{Account Receivable Turnover}} = \frac{\text{Account Receivable}}{\text{Sale per Day}}$$

- Inventory turnover $= \dfrac{\text{Cost of Goods Sold}}{\text{Inventory}}$
- Inventory days $= \dfrac{\text{365 days (for 1 year)}}{\text{Inventory Turnover}} = \dfrac{\text{Inventory}}{\text{Cost of Goods Sold per day}}$

3. Asset management / turnover ratios

- Accounts payable turnover $= \dfrac{\text{Cost of Goods Sold}}{\text{Account Payable}}$

- Accounts payable days $= \dfrac{\text{365 days (for 1 year)}}{\text{Account Payable Turnover}}$

$= \dfrac{\text{Account Payable}}{\text{Cost of Goods Sold per day}}$

3. Asset management / turnover ratios

- Total Asset Turnover = Sales / Total Assets

- Fixed Asset Turnover = Sales / NFA

- NWC Turnover = Sales / NWC

4. Profitability ratios

- Gross profit margin (%) $= \dfrac{\text{Gross Profit}}{\text{Sale}}$

- Operating profit margin (%) $= \dfrac{\text{Operating Profit}}{\text{Sale}}$

- Net profit margin (%) $= \dfrac{\text{Net Profit}}{\text{Sale}}$

4. Profitability ratios

- Return on Assets (ROA) = Net Income / Total Assets

- Return on Equity (ROE) = Net Income / Total Equity

5. Market value ratios

- Market Price = $87.65 per share
- Shares outstanding = 190.9 million

- PE Ratio = Price per share / Earnings per share

- Market-to-book ratio = Market value per share / Book value per share

DuPont identity

DuPont Analysis - A breakdown of ROE and ROA into component ratios

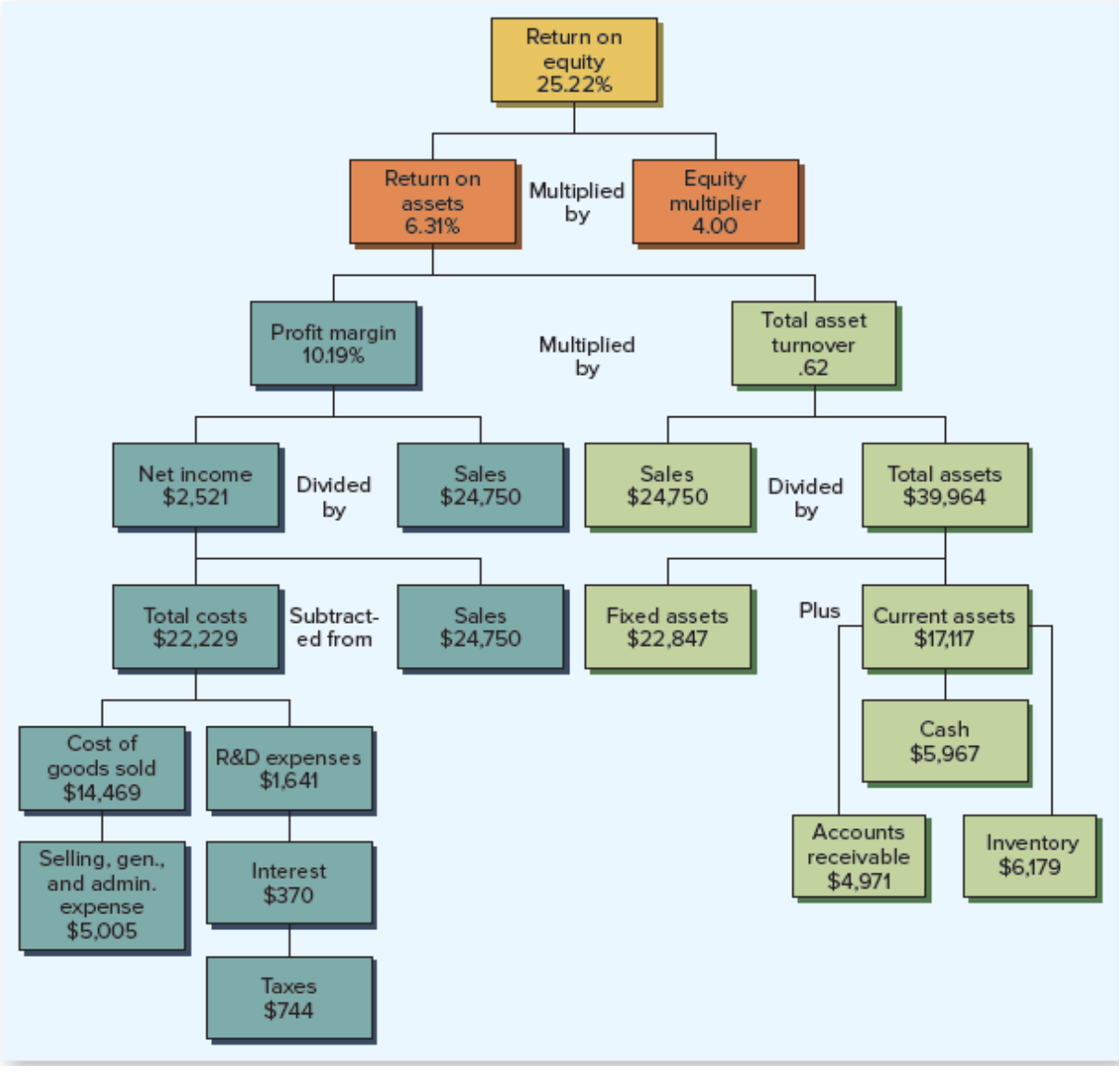
- Return on asset: ROA (%) $= \dfrac{\text{Net Profit}}{\text{Total Asset}}$

$$= \frac{\text{Net Profit}}{\text{Sale}} \times \frac{\text{Sale}}{\text{Total Asset}}$$

- Return on Equity: ROE (%) $= \dfrac{\text{Net Profit}}{\text{Equity}}$

$$= \frac{\text{Net Profit}}{\text{Sale}} \times \frac{\text{Sale}}{\text{Total Asset}} \times \frac{\text{Total Asset}}{\text{Equity}}$$

DuPont identity



3. Using Financial Statement Information

Other necessary information

- One key customer
- One key product
- Single supplier
- Percentage of sale from overseas business
- Competition
- Research and Development (R&D)
- Law and regulations

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

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

Question?