FN 201 BUSINESS FINANCE

Lecture 6

Financial Statement Analysis (2)

Agenda

- Efficiency / Activity
- Leverage ratio
- Liquidity ratio
- Marketable ratio
- Dupont analysis
- Case: CHOTI
- Q & A

Aspects of analysis

- Profitability
  - Profitability: Ability to earn profit
  - Will firm survive in long run?
- Efficiency / Activity
  - Efficiency: How well does the firm use its resource in production and running the business
- Leverage
  - Leverage: How much debt the firm has?
  - Solvency: Ability of firms to pay its (long-term) debts with available cash, or ability of a firm to meet its long-term fixed expenses and to accomplish long-term expansion and growth
- Liquidity
  - Liquidity: Ability to meet its (short-term) payment obligations
- Marketable Ratio

2. Efficiency / Activity

Efficiency / Activity

- Total assets turnover (unit in x-times)
  - Sales revenue / total asset
- Fixed assets turnover (unit in x-times)
  - Sales revenue / total fixed asset
- Fixed assets turnover (unit in x-times)
  - Sales revenue / Equity
- Marketing expense to sales (unit in %)
  - Marketing expense x 100 / Sales revenue
- Admin. expense to sales (unit in %)
  - Admin. Expense x 100/ Sales revenue

Efficiency / Activity (2)

- Family of cost to income ratio
- Income per staff
- Income per branch
- ……..

3. Leverage

Leverage

- Debt ratio (unit in %)
  - Total debt x 100 / total asset
  - Net debt x 100 / total asset excluding cash
- Equity ratio (unit in %
  - Total equity x 100 / total asset
- DE ratio (unit in x-times)
  - Total debt / Total equity
- Long term debt ratio (unit in %)
  - Long term debt x 100 / Total equity

Leverage(2)

- Times Interest Coverage – Interest Coverage Ratio (unit in x-times)
  - Earning before interest and tax (EBIT) / Interest expense
- Dividend coverage (unit in x-times)
  - Net profit/ Dividend

D/E ratio

- Or “Gearing” or “leverage” ratio
- 0.5x, 1x, 2x, 3x, 10x
- Reflects firm’s funding structure
  - Need benchmark and information to judge
  - Closely monitor by lenders and bondholders

Ex. Leverage improve ROE

- Firm need to borrow some funds to improve ROE
  - Cost vs Benefit of borrowing
  - Improving ROE vs Chance of bankruptcy all the associated cost

- Leverage improves ROE only if ROA > Cost of Debt,
  - what is the intuition?
- Example:
  - Firm with Assets = 1000, Debt = 800, Equity = 200 and cost of debt = 10%
  - Compute ROE and ROA when i) EBIT=150 and ii) EBIT=90 (tax rate = 30%)
  - Which case does firm should leverage more?

Ex. Leverage improve ROE (2)

Interest Coverage Ratio

- a number of times which profits before interest exceeds the interest charge
  - 2x, 3x, 10x
  - The higher the better
- = (Pre-tax profit + Net interest paid) / Net interest paid
  - Or EBIT / Net interest paid
  - Why before tax?
- Closely monitor by lenders and bondholders
- Also reflects sensitivity to change in interest rate

How much is too much leverage?

- Bear Sterns

4. Liquidity

Liquidity

- Current ratio (unit in x-times)
  - Current Asset/ Current Liability
- Quick ratio (unit in x-times)
  - [Cash + Mkt Securities + A/R] / Current Liability
- Cash ratio (unit in x-times)
  - [Cash + Mkt Securities] / Current Liability

Liquidity (2)

- Days of Sales (unit in days)
  - a.k.a. Average Inventory Days
  - 365 / Inventory turnover
  - Ability to turn inventory into sale

- Inventory turnover (unit in x-times)
  - COGS / average inventory

Liquidity (3)

- Collection days (unit in days)
  - a.k.a. Receivable Days
  - 365 / Collection turnover
  - 365 / Receivable turnover
  - Ability to collect cash, turn receivable into cash

- Collection turnover (unit in x-times)
- Receivable turnover (unit in x-times)
  - Sales / average receivable or
  - Sales on credit / average receivable

Liquidity (4)

- Payable days (unit in days)
  - 365 / Payable turnover
  - Ability to keep cash, delay payable payment for raw material and purchased inputs

- Payable turnover (unit in x-times)
  - COGS / average payable or
  - Purchase/ average payable

Liquidity (5)

- Cash Operating Cycle (COC) (unit in days)
- Provide insight into firm's potential cash position
- Reflects working capital need of firm
- Also reflects market position and bargaining power

  - Days of Sales (unit in days) + Collection days (unit in days) – Payable days (unit in days)

Profitability vs. Solvency vs. Liquidity

- Separated issues

- Businesses can be profitable without being solvent

- Cash pay debt, not profit

- Cash is King!!!

-Are these profitability or solvency or liquidity issues?

- Northern Rock (Sep 08)
- Bear Sterns (Mar 08)
- Fannie Mae and Freddie Mac (Sep 08)
- Merrill Lynch (Sep 08)
- Lehman Brothers (Sep 08)
- AIG (Sep 08)
- Washington Mutual (Sep 08)
- Bradford & Bingley (Sep 08)
- Fortis (Oct 08)

- Difficult to judge

Ex: Different businesses have different structure

- Different businesses have different structure
  - In terms of Turnover / Margin / Leverage
- Grocery stores
  - Low profit margins on sales but high turnover
- Fashion
  - High margin not so much on turnover
- Finance
  - Very high leverage

Ex: Current Ratio

- = Current assets / Current liabilities
  - The higher the better
  - Current A = inventory, account receivable and cash also highly marketable securities
  - Current L = short-term debt due in 1 year
- Ability to meet short-term debt (1 year)
- Reflects liquidity position of the company

Ex. Days of Sales

- Company A has average inventory of THB 3,200,000 and COGS (adj. by depreciation) of THB 22,000,000 Calculate avg. inventory days

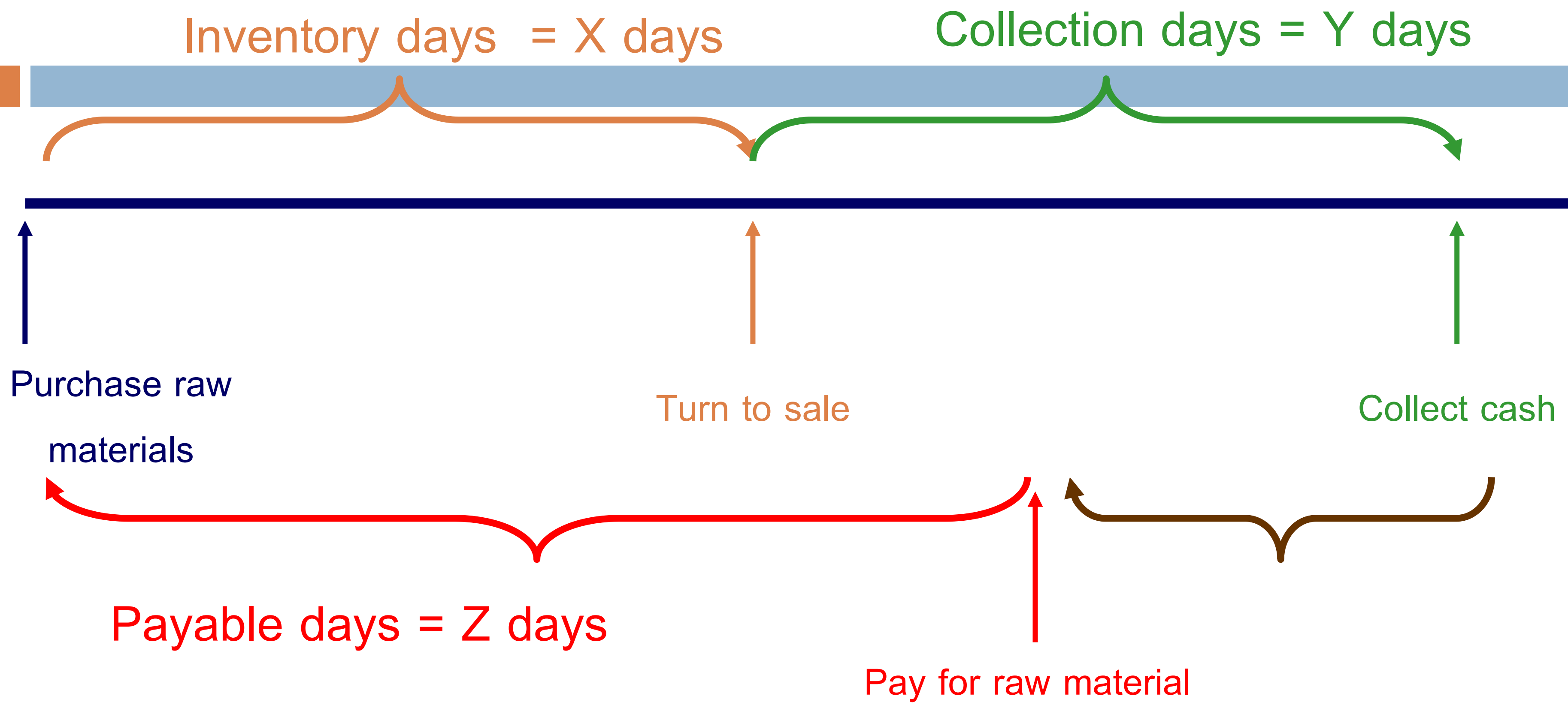
Ex. Collection Days

- Company A has average A/R of THB 2,600,000 and sales of THB 30,000,000
- Calculate avg. collection days and what does it mean to the company if it can collect cash faster by 1 days

Ex. Payable days

- Company A has average AP of1,000,000 and purchase of 10,000,000
- Calculate avg. account payable days

Ex: Cash operating Cycle (COC)



$$COC = X + Y - Z$$

Working Capital Needed

Ex: COC and Working Capital Management

- What it means to have Cash operating Cycle negative?
- Who have the longest and shortest COC?
  - Boeing, Toyota, Gap, Lotus

5. Marketable Ratios

Marketable Ratios

- Earning Per Share – EPS (unit in THB/share)
  - Net Profit/ Number of outstanding shares
- Price to Earning Per Share – (unit in x-times)
  - A.k.a PE ratio
  - Market price per share/ EPS
- Dividend yield – (unit in %)
  - Dividend per share/ Market price per share

Marketable Ratios (2)

- Book Value per share– BVPS (unit in THB/share
  - Total Equity/ Number of outstanding shares
- Dividend payout ratio (unit in %)
  - Dividend per share x 100 / EPS
- Price to Book Value – P/BV (unit in x-times)
  - Market price per share/ BVPS

Dupont Analysis

Ties many ratios together: Dupont Analysis

$$ROE = \frac{\text{Net Profit}}{\text{Equity}}$$

$$ROE = \underbrace{\frac{\text{Net Profit}}{\text{pre-Tax Profit}}}_{\text{(Tax-Burden)}} \times \underbrace{\frac{\text{Pre-Tax Profit}}{\text{EBIT}}}_{\text{(Interest Burden)}} \times \underbrace{\frac{\text{EBIT}}{\text{Sales}}}_{\text{(Return on Sales)}} \times \underbrace{\frac{\text{Sales}}{\text{Assets}}}_{\text{(Asset Turnover)}} \times \underbrace{\frac{\text{Assets}}{\text{Equity}}}_{\text{(Leverage)}}$$

Profit Margin / Operating Efficiency

Asset Use Efficiency

Equity Multiplier / Financial Leverage

- DuPont analysis helps locate the part of the business that is underperforming

Ties many ratios together: Dupont Analysis (2)

$$ROA = \frac{EBIAT}{Total\ Asset}$$

$$ROA = \underbrace{\frac{EBIAT}{Sales}}_{\text{(Profit Margin)}} \times \underbrace{\frac{Sales}{Total\ Asset}}_{\text{(Total Asset Turnover)}}$$

Pay attentions to Depreciation Expense & Other Incomes

- 1) Depreciation causes deviation between profit and cash especially firm with high fixed assets
  - Cash outlay at the time of asset purchase, but depreciation spreads over life of asset
  - Company could have lots of cash even with small net profit
- 2) Depreciation causes a rise in profit figure when depreciation ends
- 3) Sometimes other incomes are big, likes sale of fixed assets, insurance claim
- 4) Profit should come from normal business operation
  - Profit from normal business operation is likely to continue, other income isn't

Last notes on Fin. Ratio Analysis

- There are tons more ratios
- Even same ratio, some people define differently
- Financial managers must realize what ratios are important to firm and what is the industry standards or benchmarks

Case: CHOTI

"In crisis, there are opportunities"

"Be greedy when others are scared" : Warren Buffet

B/S as of March 200X	Mill. THB
Asset	
- Cash	68.00
- ST Investment	138.69
- Receivable	267.87
- Inventory	528.48
- Other current asset	57.37
Total Current Asset	**1061.15**
- Investment and Lending	0.07
- Investment and Lending to Subsidiary	0.05
- Property Plant and Equipment(net of depreciation)	267.81
- Other asset	0.24
Total Asset	**1329.32**

B/S as of March 200X	Mill. THB
Liability / Shareholders Equity	
- O/D and ST Loan	161.74
- Payable	10.86
- Other current liability	50.22
Total Current asset	**222.64**
- LT Loan	0
Total Liability	**222.64**
- Minority Interest	0.06
- Registered equity (7.5 mil @ 10 THB)	75.00
- Equity surplus	156.00
- Retained profit	875.62
Total Shareholders' Equity	**1106.62**
Total Liability / Shareholders Equity	**1329.32**

P/L as of March 200X	Mill. THB
- Sales	1023.51
- Other revenue	28.52
Total Revenue	1052.03
- Cost of goods sold	832.90
- Sale expense and services	40.71
- Interest Expense	5.44
- Income before tax and extraordinary item	172.98
- Tax	3.85
- Income before extraordinary item	169.13
- Minority interest	0.02
- Net income	169.11
- EPS (=169.11/7.5)	22.55
- Share price	160

- Sale

- Gross margin

- Sale expenses and services

- Interest Expense

- Net profit

- EPS

- Avg. Collection Day

- Avg. Inventory Day

- Avg. Payable Day

- COC

- Return on Asset / Fixed Asset

- Liability

- D/E

- Book Value & P/E

Q & A