Advanced Valuation Methods

Analyzing Historical Performance

Financial Analysis

- **Goal**
  - Assess performance of a firm in the context of shareholder value versus competitive advantage
    - Productivity of employed capital (ROA versus WACC)
    - Long-term versus short-term viewpoints
      - Financial markets: Long-term
      - Management: Short-term

- **Principal tools**
  - Ratio analysis
  - Cash flow analysis.
Ratio Analysis

- Value of a firm
  - Function of profitability and growth
- Levers to achieve growth and profit targets
  - Operating management
  - Investment management
  - Financing strategy
  - Dividend policies.

Profitability & Growth Drivers

- **Profitability & Growth**
  - Product Market Strategies
  - Financial Market Strategies
  - Operating Management
  - Investment Management
  - Financing Strategy
  - Dividend Policy
  - Managing Revenue & Expenses
  - Managing Working Capital & Fixed Assets
  - Managing Liabilities & Equity
  - Managing Payout
Benefits of Ratio Analysis

- Frame questions for further probing
- Time series analysis
  - Assess effectiveness of strategy over time
- Cross-sectional analysis
  - Assess relative performance within an industry
- Evaluate against some benchmark
  - Most ratios have no absolute benchmark
  - Rates of return ratios versus cost of capitals.

Return on Equity

- Simply stated:
  \[
  \text{ROE} = \frac{\text{Net income}}{\text{equity}}
  \]
- Fails to reveal underlying factors affecting profitability
  - What is the contribution of operating activity to profitability?
  - Can asset management improve profitability?
  - Has debt financing provided favorable leverage?
  - How have income taxes impacted profitability?
  - What is the influence of non-operating activities on profitability?
  - Can the firm sustain its current level of growth?
- Decompose to obtain an understanding.
Illustration

- Let's work along with the Excel spreadsheet
- Return-on-equity ratio is made up of different components:
  - Operating return
  - Efficiency in managing assets
  - Financial leverage
  - Income tax effect
  - Non-operating effects.

Common-Sized Income Statement

- Usefulness:
  - Are the company's margins consistent with its stated competitive strategy?
  - Are the company's margins changing? Why? What are the underlying causes?
  - Is the company managing its overhead and administrative costs well? What are the activities driving these costs? Are the activities necessary?
Efficiency in Managing Assets

- Detailed analysis reveals effectiveness of investment management
- Two primary areas:
  - Net working capital management
    - Receivables, inventory, payables
    - Support normal operations
  - Long-term asset management
    - Assets generate long-term earnings.

Net Working Capital Management

- Net current assets / sales
  = (Cash + marketable securities) / sales
  + Accounts receivable / sales
  + Inventories / sales
  + Prepaid / sales
  - Payables / sales
- 1/(Net current assets / sales)
  = Sales / net current assets
  = Turnover of net current assets.
**Turnover: Receivables Issues**

- How well does the company manage its credit policies?
- Are these policies consistent with its marketing strategy?
- Is the company artificially increasing sales by loading distribution channels?

**Turnover: Inventory Issues**

- How well does the company manage its inventory?
- Does the company use modern manufacturing techniques?
- What is the underlying business reason for change in inventory ratios?
- Are new products being planned?
- Is there a mismatch between demand forecasts and actual sales?
Long-Term Asset Management

- Long-term assets / sales
  = Gross fixed assets / sales
    - Accumulated depreciation / sales
    + Other long-term assets / sales
- 1 / (Long-term assets / sales)
  = Sales / long-term assets
  = Turnover of long-term assets.

Long-Term Investment Issues

- Is investment in plant and equipment consistent with the competitive strategy?
- Does the company have a sound policy of acquisitions and divestitures?
- What is the estimated age of the assets? How is product quality affected?
Operating Return on Assets

- Operating return on assets before taxes is the product of:
  - Operating return on sales = \( \frac{EBIT}{sales} \)
  - Asset turnover ratio = \( \frac{Sales}{assets} \)
- Note:
  - All financing costs are excluded from EBIT
  - Taxes have been excluded from EBIT
    - Show a separate tax effect later.

Financial Leverage Effect

- Financial leverage increases ROE if rate of return earned on the invested funds > cost of debt financing
- However, financial leverage increases risk of financial distress
- Debt obligations have priority over equity payments
- Financial leverage consists of two components
  - Interest expense multiplier
  - Balance sheet financing multiplier.
**Interest Expense Multiplier**

- Defined as:
  
  1. \(1 - \frac{\text{interest expense}}{\text{operating earnings}}\)
  
  or as \(1 - \frac{\text{interest expense}}{\text{EBIT}}\)

  or as \(\frac{\text{EBIT} - \text{interest expense}}{\text{EBIT}}\)

  or as \(\frac{\text{EBT}}{\text{EBIT}}\)

- Interpretation:
  
  The proportion of $1 of operating earnings (before interest expense) that is left after paying interest.

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**Balance Sheet Financing Multiplier**

- Financial leverage = \(\frac{\text{Assets}}{\text{equity}}\)

- But, \(\text{Assets} = \text{Debt} + \text{Equity}\)

  Thus, \(\frac{\text{Assets}}{\text{equity}} = \frac{\text{Debt}}{\text{equity}} + 1\)

- \(\frac{\text{Assets}}{\text{equity}}\) = Current interest-bearing liabilities / equity 

  + Long-term debt / equity 

  + Other LT liabilities / equity 

  + Preferred stock / equity 

  + 1
**Joint Financial Leverage Effect**

- Defined as the product of:
  - Interest expense multiplier
  - Balance sheet financing multiplier

- Interpretation of joint effect:
  - Positive financial leverage if product > 1
  - Negative financial leverage if product < 1

**Income Tax Multiplier**

- Income tax multiplier
- Defined as:
  - $1 - (income tax) / (pretax income)
  - or as \((EBT - \text{income taxes}) / EBT\)
  - or as \(\text{NI} / EBT\)

- Interpretation
  - The proportion of $1 of pretax income left after paying income tax.
**ROE: Excluding Unusual Items**

- ROE is the product of:
  - Operating return on sales
  - Asset turnover ratio
  - Joint interest & financial leverage multiplier
  - After income tax multiplier
- By excluding unusual items
  - Better fix on profitability of normal operations.

**Effect of Unusual Items**

- Restructuring charges, extraordinary gains/losses, etc... can seriously change ROE
- Adjusting ROE for these items lets you see the impact of nonrecurring items.
- Although not unusual, an adjustment for preferred dividends is necessary
  - Why?
    - Preferred shareholders are not residual owners of the business.
Sustainable Growth

- What is it?
  - Growth the firm can sustain in perpetuity
- How is it defined?
  - \((\text{Retention rate}) \times \text{ROE}\)
  - \(1 - (\text{retention rate}) \times \text{ROE}\)
- What do you measure it against?
  - Growth in sales, assets, debt, and equity.

Influences on the Sustainable Growth Rate

- Sustainable Growth Rate
  - Dividend Payout
    - Return on Equity
      - Return on Sales
      - Asset Turnover
      - Financial Leverage
      - Tax Effects
**Cash Flow Analysis**

- Provides insight about the quality of info in the balance sheet and income statement
- Divides cash flows into:
  - Operating activities
  - Investing activities
  - Financing activities.

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**Rules for Identifying Cash Flows**

<table>
<thead>
<tr>
<th>Balance Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets increase</td>
</tr>
<tr>
<td>Assets decrease</td>
</tr>
</tbody>
</table>

Revenues = Source
Expenses = Use
**Formats**

- **Indirect approach**
  - Converts accrual income statement to a cash income statement
  - Does so by using changes in receivables, inventories, prepaids, payables, accruals, deferred taxes.

- **Direct approach**
  - Starts with accrual based net income and makes adjustments to derive operating cash flows
  - Must also show indirect approach
  - Most firms use indirect method.

**Questions Raised by the SCF...**

- How strong is internal cash flow generation?
- Is cash flow from operations positive? Why? If negative, why?
- Is the company growing? Too quickly?
- Are operations profitable?
- Are there problems managing working capital?
Questions...

- Can the company meet short-term obligations from operating cash flows?
- Can it continue to meet these obligations without reducing operating flexibility?
- How much is invested in growth?
- Are these investments consistent with the business strategy?
- Was internal cash used to finance growth?

Questions...

- Does free cash flow exist? Is this a long-term trend?
- What plans does management have to deploy free cash flow?
- Were dividends paid from free cash flow? Or was external financing used?
- If external financing is used for dividends, is the dividend policy sustainable?
Questions...

- What type of external financing does the company rely on?
  - Equity
  - Short-term debt
  - Long-term debt
- Is the financing consistent with the company's overall business risk?

Questions...

- Are there significant differences between a firm's net income and its operating cash flow?
- Is it possible to identify the sources of this difference?
- Which accounting policies contribute to it?
- Do one-time events contribute to the difference?
Questions...

- Is the relationship between operating cash flow and net income changing over time? Why?
- Is it because of changes in business conditions or accounting policies and estimates?
- What is the time lag between the recognition of revenue and expenses and the receipt and disbursement of cash flows?

Questions

- Are the changes in receivables, inventories, and payables normal?
- If not, is there adequate explanation for the changes?
The End