Estimating Growth Rates

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Extraordinary Growth Period

- While deciding the length of the extraordinary growth period, three factors should be looked into
    - Size of the firm
    - Existing growth rate and excess returns
    - Magnitude and sustainability of competitive advantages

Historical Growth Rates

- Using average growth rates from the past
    - Arithmetic average and Geometric average
    - Estimation Period
    - Per share versus total earnings
    - Linear and Log Linear models, $Ln(EPS_t) = a + bt$
    - Time series models (using quarterly earnings)
- Dealing with Negative numbers
    - % change in EPS = $(EPS_t - EPS_{t-1})/Max(EPS_t, EPS_{t-1})$
- Value of past growth in predicting future growth depends on issues such as – variability in growth rates; size of the firm; cyclicality in the economy; change in fundamentals; quality of earnings

Analysts' Forecast of Earnings

- They ought to perform extensive analysis
  - Firm-specific information that has been made public since the last earnings report
  - Macroeconomic information that may impact future growth
  - Information revealed by competitors on future prospects
  - Private information about the firm
  - Public information other than earnings
- Accuracy of Forecasts
  - Short-term forecasts
  - Long-term forecasts
  - Analyst forecasts and stock prices

Analysts' Forecast of Earnings

- How much of importance do we give to analyst forecasts in estimating future growth
  - Amount of recent firm specific information
  - Number of analysts following the stock
  - Extent of disagreement between analysts
  - Quality of analysts following the stock
- IBES and Zacks aggregate and summarize data
- In India, CMIE and others do give some data
- One can also get a large amount of information from a company's bankers and quality of auditors they have
- These qualitative indicators do give more insights into the reliability of the company's figures and directors report in annual reports

Determinants of Earnings Growth

- Retention ratio and return on equity
    - NI_t = (Book value of equity$_{t-2}$ + Retained earnings$_{t-1}$) X ROE_t
    - Let us try this out on Wockhardt
- ROE = (Equity reinvestment rate) X (ROE)
- ROE and Leverage
    - ROE = ROCE + D/E(ROA – i(1-t))
    - Where, ROCE = EBIT (1 – tax rate) / (BVD + BVE)
    - Alternatively, g = b(ROCE + D/E(ROCE – i(1 – t))
- Using this, one can evaluate implications of, a) restructuring assets/projects; b) changing capital structure; c) changing dividend policy

Growth Estimation Issues

- ROCE, Profit Margin and Asset Turnover
  - ROCE = Preinterest profit margin X Asset turnover
- Expected growth in net income = (equity reinvestment rate) X (return on equity)
- Product line analysis
- Estimation of inputs
  - Current versus projected values
  - Emphasis on book value
- Level of details ~ noise created
- Consistency of inputs with firm type
- Weighting different estimates of growth
- Smoothening future growth
- Management estimates

Factors Determining Weights

- Historical
    - How much history is available m
    - How variable are past earnings l
    - How cyclical is the firm l
    - Has the firm made any fundamental change (business or leverage) n
    - Has the firms size changed much over time n
- Analysts
    - How much firm specific information come out since the last earnings report l
    - How many analysts follow the stock m
    - How much agreement is there between analysts m
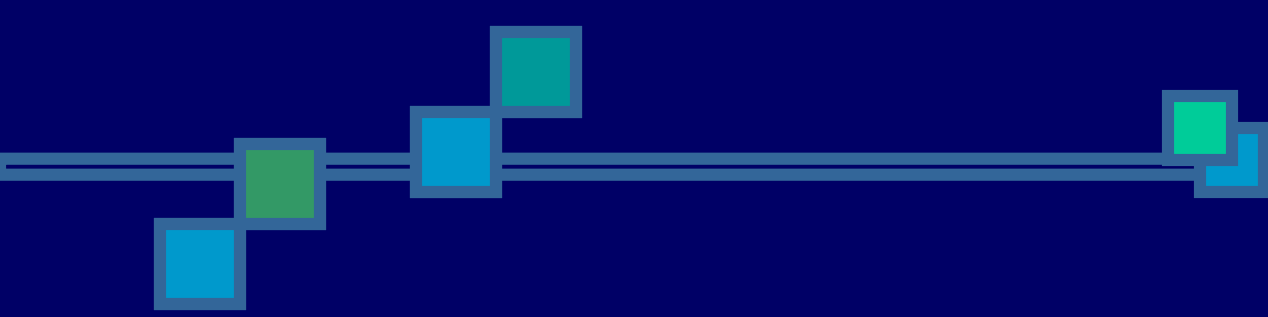   - How good are the analysts g

Other Issues

Fundamental

- How much change has there been in firm fundamentals m

- How well can the inputs to the model be estimated g

Other Issues

- What is the firms competitive advantage (for earning abnormal returns)?

- How permanent is this going to be?

Wockhardt Limited	2006	2005	2004	2003	2002	
Net Income	214	238	208	133	105	
Arithmetic Growth Rate	-10.4%	14.8%	55.8%	26.9%	25.8%	based on 2002-06 figures
Geometric Growth Rate					19.4%	based on 2002-06 figures
EPS	39	44	38	37	29	
Arithmetic Growth Rate	-10.6%	14.5%	3.8%	26.8%	8.7%	based on 2002-06 figures
Geometric Growth Rate					7.7%	based on 2002-06 figures

2013

Wockhardt Limited	2006	2005	2004	2003	2002
Dividend payout ratio	29.2%	26.2%	29.7%	23.1%	23.8%
Return on Equity	24.2%	33.5%	38.0%	32.5%	30.3%
Retention Ratio	70.8%	73.8%	70.3%	76.9%	76.2%
Estimated Growth Rate (using above)	17.2%	24.7%	26.7%	25.0%	23.1%

For future hints, you can try and look at the marginal return on equity (taking temporal factors into account)

2013

Wockhardt Limited	2006	2005	2004	2003	2002	
BV of Equity	957	805	621	473	347	
BV of Debt	708	810	816	301	50	
Net Income	214	238	208	133	105	
Dividend payout ratio	29.2%	26.2%	29.7%	23.1%	23.8%	
D/E Ratio	0.7	1.0	1.3	0.6	0.1	
Interest Coverage Ratio	25	15	16	15	14	AAA (using table
Interest Expense (approx)	8.5%	8.0%	8.0%	8.0%	9.0%	
Tax Rate	15.5%	10.2%	13.6%	8.7%	9.4%	
Return on Capital Employed	13.6%	16.7%	20.0%	24.4%		18.7%
D/E Scenarios ==>	0.0	0.5	1.0	1.5	2.0	
Estimated Growth Rate (using cur. ROCE)	9.6%	12.4%	14.0%	17.8%	20.1%	
D/E Scenarios ==>	0.0	0.5	1.0	1.5	2.0	
Estimated Growth Rate (using avg ROCE)	13.2%	18.1%	21.2%	27.7%	31.8%	