Advanced Valuation Methods

Estimating Continuing Value

A Perspective of Value

Value = PV of all future cash flows

Value

= PV(CF) during explicit forecast period
+ PV(CF) after explicit forecast period

Continuing value

- Assume a perpetuity
- Constant growth
**Appropriate Explicit Forecast Horizon**

- Allocation of forecast horizon between “explicit” period and “continuing value” period should have no affect on value
  - See Valuation text’s Exhibit 12.2
  - Then why bother with a 2-stage approach?
- Explicit period helps you understand important value drivers
  - Markets, margins, capital expenditures, capital structure, NOPLAT, growth rates ...

**Discounted Cash Flow**

- Long explicit forecast
- Growing free cash flow perpetuity formula
- Value-driver formula
- If underlying assumptions of consistent
  - Three methods give the same continuing value.
**FCF Approach**

- Continuing value\(_t\) = \(\frac{FCF_{t+1}}{(WACC - g)}\)

  - Normalized level
  - Expected growth rate in perpetuity

- Problem:
  - If \(g_{\text{cont. value}} < g_{\text{explicit fcst}}\), then % of NOPLAT needed for investments is less
  - Thus, more NOPLAT available in CV period.

**Value Driver Approach**

Continuing value = \(\frac{\text{NOPLAT}_{t+1}(1 - g/\text{ROIC})}{WACC - g}\)

- Produces same result as FCF approach
- \(g/\text{ROIC} = \text{Reinvestment rate for NOPLAT}\)
  - \(\text{NOPLAT} \times g/\text{ROIC} = \text{Incremental operating investment}\)
  - Thus, numerator = \(\text{FCF}_{t+1}\).
Estimating Value Drivers

- **NOPLAT**
  - Reflect a normalized level of earnings at the midpoint of the business cycle
- **FCF**
  - Based on NOPLAT and level of capital expenditures necessary to sustain growth
- **ROIC**
  - Consistent with competitive conditions, WACC and growth
- **WACC**
  - Consistent with a sustainable capital structure
- **Growth**
  - Level of inflation? Consumption for industry?

Economic Profit Model

Value = Invested capital at beginning of forecast + PV (EP) during the explicit forecast period + PV (EP) after explicit forecast period.

Beginning capital’s value is reasonable
Economic Profit Approach

Value of EP the 1st year of the perpetuity

Continuing value = \( \frac{\text{Economic profit}_{t+1}}{\text{WACC}} \) + \( \frac{\text{NOPLAT}_{t+1}(g / \text{ROIC})(\text{ROIC} - \text{WACC})}{\text{WACC}(\text{WACC} - g)} \)

Incremental value beyond 1st year of the perpetuity created (destroyed) by additional growth

Underlying Process

You input normalized earnings, growth rates, WACC & ROIC.

Slope shows growth for continuing value period.

Detailed Forecast Period

Continuing Value Period
Relationship of FCF to EVA

- FCF’s continuing value
  \[ \text{FCF’s continuing value} = \text{Economic profit continuing value} + \text{invested capital at end of explicit forecast period} \]
- Economic profit approach assumes the assets in place prior to the continuing value period are worth the carrying value.

Be Careful
CV: Cyclical Firm

- Earnings are, by definition, volatile and depend on the state of the economy
- Base-year earnings
  - Adjust the expected growth rate to reflect the economic cycle
  - Use normalized (average) earnings for base-year earnings.

CV: Firm in Financial Distress

- Is there light at the end of the tunnel?
  - Yes
    - Use normalized earnings
    - Carefully estimated the length of the transition period
  - No
    - Liquidation value
    - Product options.
CV: Using P/E Ratios

- Assume the company is worth some multiple of earnings in the continuing value period
- It probably is not appropriate to use the current P/E ratio
  - Circular reasoning
  - Then what?
- Recall earlier discussion re: shortcomings of P/E.

Use & Misuse of P/Es

- Appealing statistic relating price to earnings
- Simple to compute
- Proxy for risk and growth
- However:
  - P/Es avoid explicit understanding of risk, growth, etc...
  - P/Es of comparable firms or industries can introduce systematic error
  - What if earnings are negative?
P/Es & Stock Returns

- Low P/E stocks tend to outperform high P/E stocks over time
- Low P/E stocks are usually large, stable firms with high dividends
- Do investors consistently over-estimate the value of growth and pay too much for high-growth firms and too little for stable firms?

The End