Present Value of Corporate Earnings: A Forecasters’ Survey Perspective

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Present Value of Earnings – WHY?

Questions Asked:

- What is the VALUE of future U.S. corporate earnings?
- What are the properties of earnings forecasts?
- What is the implied equity risk premium?

Expect 2 formulas and 11 pictures...
Approach Taken

Methodology:

1. Use long-range survey forecast for earnings and rates
2. Apply simple ‘dividend-discount model’

Note:

▶ Valuation and earnings in nominal US dollars (billions)
The Valuation Formula

**Methodology:**

\[ V_{t|t} = D_t + \frac{D_{t+1|t}}{R_{t+1|t}} + \frac{D_{t+2|t}}{R_{t+2|t} \times R_{t+1|t}} + \ldots = \sum_{s=0}^{\infty} D_{t+s|t} \frac{1}{\prod_{p}^{s} R_{t+p|t}} , \]

**Two-Step Present Value Model:**

\[ V_{t|t} = \sum_{s=0}^{N} D_{t+s|t} \frac{1}{\prod_{p}^{s} R_{t+p|t}} + \frac{1}{\prod_{p}^{N+1} R_{t+p|t}} \frac{(1 + gn)}{ir - gn} \times D_{N+1|t} \]

- \( D_t \) – dividend,
- \( R_{t+i|t} = (1 + ir_{t+i|t}) \) – (gross) required return
- \( gn \) – long-run nominal dividend growth,
- \( ir \) – long-run required return
BlueChip Economic Indicators survey by ASPEN Publishers

- Long-range surveys with 5Y ahead forecasts + average for the following 5Y
- Available since 1983, updates in March and October
- Available in Haver Analytics database

Variables used:

1. Nominal pre-tax corporate profits (NIPA concept)
2. 10Y Treasury Note Yield
Behavior of Earnings Forecast

Do forecasters account for cyclicality of earnings?

- Is the forecast of earnings growth smooth or not?
- For cyclical shocks the P/E ratio should decline
- For growth-rate and level shock the P/E increases or stable

Can I use a simplified FED/Gordon model? NO!

- Assuming $V_t = D_t/(ir_t - gn_t)$ ignores cycles and increases the variance of valuation, it’s a dangerous thing in general...
- Ignores the time variation, cycle, in interest rates and nominal growth
Cyclical vs. Permanent Level Shocks

Transitory: Growth Rate

Permanent: Growth Rate

Transitory: Log-Level

Baseline: 5% Growth
Baseline + Shock

Permanent: Log-Level
Earnings Growth – Forecast Profiles

U.S. Corporate Earning Growth, 5Y Ahead (1984:2018) in %
Bluechip Survey Forecasts of Pre-Tax Nominal Corporate Earnings
100*log, normalized in 1983
Earnings Levels – Forecast Profiles, Quarterly

U.S. Corporate Earnings (ex IVA and CCAdj) 5 Q Ahead Market Expectations \([100\times \log]\)

Data: Philadelphia SPF
Ten-Year Treasury Note – Forecast Profiles
Survey Views on “(r - g)”

Bluechip Survey Long-Run Estimates (r, g) in %

Nominal Interest Rate
Nominal Profit Growth
Valuation Assumptions

Valuation:
- Two-stage discounted dividend model, using the survey data
- Constant pay-out ratio (50 %)
- Constant equity premium of 4 % (on purpose)
- Using only March data

Comparing to S&P 500:
- NIPA and S&P 500 earnings are not fully comparable
- P/E ratio from March 1984 used to convert the index to USD
Valuation Results

NPV of Corporate Earnings
(normalized by value estimate in 1984)

- estimate
- S&P500

years
0 2 4 6 8 10 12
NPV of Corporate Earnings (normalized by value estimate in 1984)
Recall: constant equity premium
The Inverse Problem – What is the ERP?

What Equity Risk Premium is needed to match S&P500?

Searching for ERP:

- Every period (March), find a risk-premium applied for the whole valuation horizon
- The estimated ERP is strongly influenced by the \((r - g)\) implied by the survey
- Estimates to be interpreted causiously but are informative about trends...
Recall: payout ratio still constant!
Recall: payout ratio still constant!
Nominal Effective Discount Factor (Long-run)

Long-Term Nominal Rate and Required Return

- long-term ir+erp
- long-term ir
- pre-tax corporate returns (BEA)
Conclusions

Tool:
- Real-time survey data + simple two-stage model provide informative valuation with a story
- Survey data updated in early March and October
- Apart from valuation, the implied ERP can be tracked

Results:
- Earnings forecasts tend to mix up trends and cycles
  (a paper-in-progress with a state-space model...)
- Stock prices are expensive but it’s not 1999...
Thank you for your patience...

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