Systematic Risk in Earnings and Expected Stock Returns

Chen, Chen, and Jiang (2020)

AAA 2020 Discussion

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Overview

- **Question**: What are the returns to aggregate earnings risk exposure?
- **Methodology**:
  1. In each month, estimate β_i^{EA} using past data:

$$ER_{i,t+1} = \alpha_i + \left(\beta_i + \beta_i^{EA} d_{i,t}^{EA}\right) ER_{m,t+1}$$

$$d_{i,t}^{EA} = 1, \text{ if firm } i \text{ announces within 1 day of time } t$$

  2. See whether β_i^{EA} predicts next month returns:

$$R_i = \lambda_a 1(\text{Announcer}) \hat{\beta}_i^{EA} + \lambda_{na} 1(\text{Non-Announcer}) \hat{\beta}_i^{EA} + \text{controls} + \eta_i$$

- **Findings**:
  - Earnings risk "priced" for announcers only: $\hat{\lambda}_a > 0$, $\hat{\lambda}_{na} = 0$
  - FF5 alpha from monthly portfolio sorts on $\hat{\beta}^{EA} \approx 10.2\%$ annualized

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- **My focus**: interpretation of findings

Compensation for earnings risk?

- Reformulation of last slide as a conditional model:

$$E_t R_{i,t+1} = \alpha_i + \beta_{it} E_t R_{m,t+1}, \quad \beta_{it} = \beta_i^0 + \beta_i^1 \cdot z_t,$$

$$z_t = \begin{pmatrix} 1(t = \text{EA date}_1) & \dots & 1(t = \text{EA date}_j) & \dots \end{pmatrix}'$$

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- β_i^{QE} is a measure of "systematic earnings risk"
  - $\text{Earnings growth}_{i,t} = \delta_i + \beta_i^{QE} \text{Earnings growth}_{m,t} + \epsilon_{i,t}$
  - But β_i^{QE} doesn't forecast returns $\Rightarrow$ **is it really earnings risk**?

Comments on earnings beta

- **Interpretation problem:** β_i^{EA} measured in **event** (not calendar) time
  - Effectively rules out e.g. Apple having a "beta" to Google's earnings
    - Why should we rule this out?
  - Difficult to interpret coefficients in Fama-MacBeth regressions
    - λ_a, $\lambda_{na} \neq$ risk prices

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- **Suggestion:** implement tests using conditional model setup
  - Everything would be aligned in calendar time
  - Easy interpretation of risk prices $=$ time variation in MRP
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  - Could the result be mechanical? (I don't think so, but one could)
    - Better price discovery at EAs $\overset{?}{\Rightarrow}$ "better" betas?

Miscellaneous comments

- How does the size of FF5 alpha compare with arbitrage limits?
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- More discussion of placing the paper into the literature
  - How is the objective different from Da and Warachka (2009)?
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- How well-identified is β_i^{EA} off of so few observations?
  - Weak identification $\Longrightarrow$ non-standard asymptotic distribution for risk premia (Kleibergen (2009))

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