THE OHIO STATE UNIVERSITY
FISHER COLLEGE OF BUSINESS

The Cross-Section of Subjective Expectations: Understanding Prices and Anomalies

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Discussant: **Andrei S. Gonçalves**

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Outline

This Paper in a Nutshell

- Literature:
- This paper:
- Empirical Setting

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  - FIRE: dr "drives" time variation in aggregate equity prices
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$$1 \approx \frac{Cov\left(\sum_{j=1}^{h} \rho^{j-1} \cdot E_t^*[\Delta x_{t+j}], \widetilde{px}\right)}{Var(\widetilde{px})} - \frac{Cov\left(\sum_{j=1}^{h} \rho^{j-1} \cdot E_t^*[r_{t+j}], \widetilde{px}\right)}{Var(\widetilde{px})} + \frac{Cov\left(\rho^h \cdot E_t^*[\widetilde{px}_{t+h}], \widetilde{p}\right.}{Var(\widetilde{px})}$$

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  - Need to measure log prices (p) and log earnings (x)
  - FIRE: Realized earnings and prices (CRSP+COMPUSTAT)
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Empirics: FIRE vs SubE Mismatch

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$$0 \approx (\Delta\widetilde{x}_{i,t+1} - E_t^*[\Delta\widetilde{x}_{i,t+1}]) - (\widetilde{r}_{i,t+1} - E_t^*[\widetilde{r}_{i,t+1}]) + \rho \cdot (\widetilde{px}_{i,t+1} - E_t^*[\widetilde{px}_{i,t+1}])$$

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Table I Decomposition of dispersion in price-earnings ratios

	One-year horizon ($h = 1$)		One-to-four year horizon ($h = 4$)
	FIRE	Expected	
CF_h	0.103***	0.331***	
DR_h	0.143***	0.033***	
FPX_h	0.746***	0.620***	

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Table III

$$E_{t+1}^*[\Delta\tilde{x}_{i,t+2}] - E_t^*[\Delta\tilde{x}_{i,t+2}] = \beta\left(\Delta x_{i,t+1} - E_t^*[\Delta x_{i,t+1}]\right) + u_{t+1}$$

Panel B: Revisions after Surprises	
Main Sample 1999-2020	−0.863***
Long Sample 1982-2020	−0.786***

Model: Slow Moving Learning + Preference for LT CFs

$$x_{i,t} = x_t^{agg} + \widetilde{x}_{i,t} \qquad x_t^{agg} = \phi \cdot x_{t-1}^{agg} + u_t \qquad \widetilde{x}_{i,t} = g_i \cdot t + \nu_{i,t}$$

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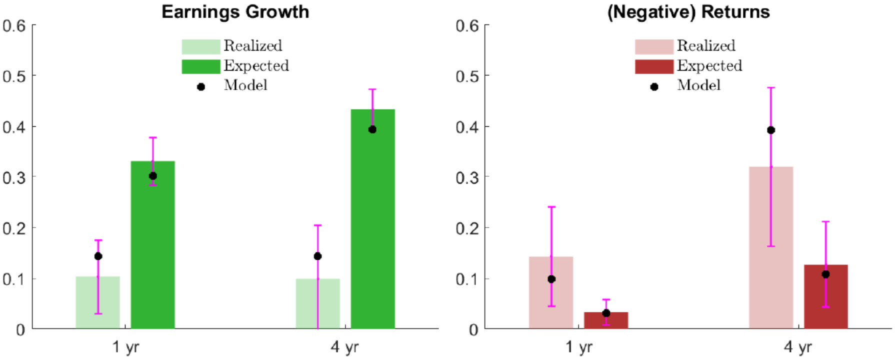

Figure 3. Empirical decomposition and model decomposition.

Outline

The Paper

My Comments

Final Remarks


Coming up with comments was never this hard...

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- Relation to Chen, Da, and Zhao (2013) needs to be clearer:

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Table 2
Return decomposition using ICC approach

	Horizons (Quarters)								
	1	2	4	8	12	16	20	24	28
Panel B: Firm-level									
Decomposition									
CF	0.19	0.32	0.48	0.63	0.68	0.68	0.67	0.66	0.62
DR	0.81	0.68	0.52	0.37	0.32	0.32	0.33	0.34	0.38

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- The objective is to decompose prices (proxied by P/E)
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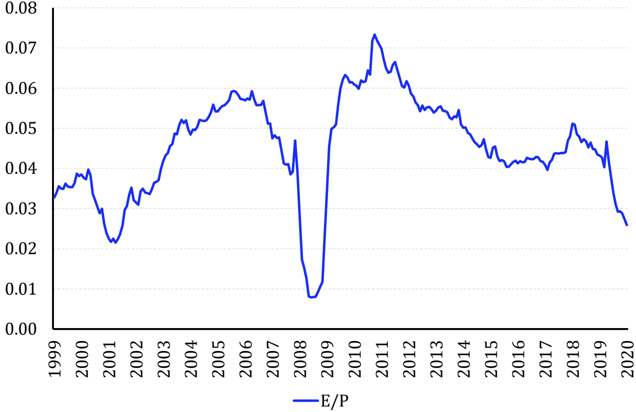

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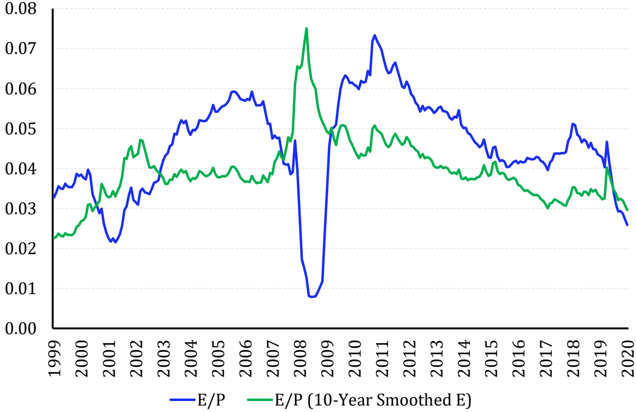

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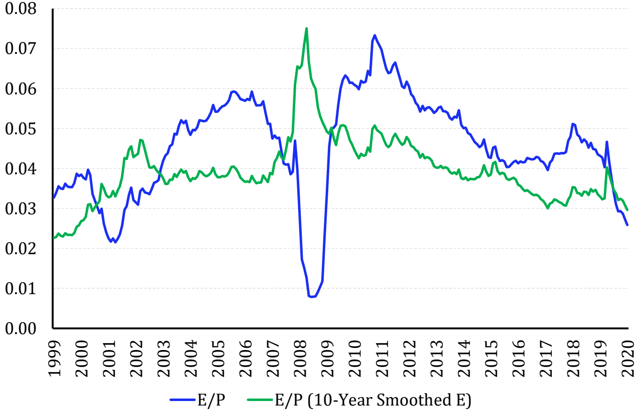

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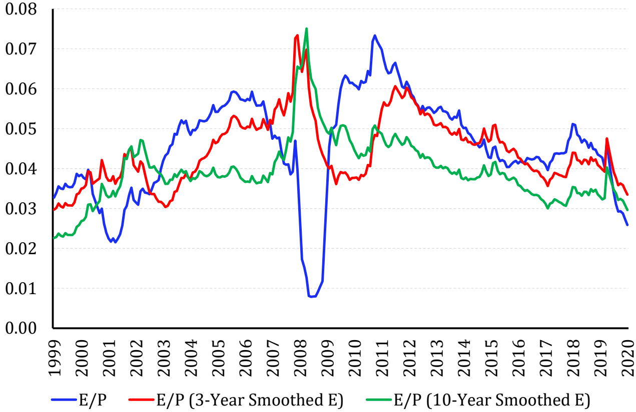

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- It seems 3-year smoothed earnings goes a long way
  (cannot check your E/P because different months reflect different firms)
- However, there are still some counterfactual "price patterns"
- I suggest you add an analysis using P/D
  (analysts also provide D forecasts)
- Or (less preferred), add an analysis using 10-year smoothed earnings

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- The objective is to decompose prices (proxied by P/E)
- But E is more volatile than P (at least in the time series)
- So, the P/E dynamics may largely reflect E dynamics
- Using 3-year smoothed earnings helps, but is it enough?
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  - $E^*[r]$ from analysts (aggregate equity time-series) (Wu (2018), Bastianello (2024))
  - $E^*[r]$ from analysts (cross-section of stocks) (Décaire, Graham (2024))
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- Is the model consistent with $b \approx 1$?

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  - $E^*[g]$ from analysts have a small pass through to investors (B)
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- Your model is consistent with $B \approx 0$ ($E_A^*[r]$ proxy for $E_I^*[r]$)
- Is your model consistent with low M_g? I am not sure

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Some Other Comments

1) We disagree on why FIRE models fail

   - You think they have too little variation in risk premia (e.g., second paragraph of page 16)

   - I think they have too much variation in expected cash flows

2) Bayesian Learning vs Constant-Gain Learning

   - Suppose we let g_i differ across firms (Internet Appendix H.3)

   - Is the β value the only difference between learning models?

   - If so, how far is the $\beta = 1.8\%$ from the Bayesian β?

3) $E^*[g]$ based on EPS while realized earnings are not per share

4) I think $w_{i,t,1}$ in Equation 18 should have a $E_t^*[\Delta\widetilde{x}_{i,t+1}]$ term

Outline

Final Remarks

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