THE OHIO STATE UNIVERSITY
FISHER COLLEGE OF BUSINESS

Equity Valuation Without DCF

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Discussant: **Andrei S. Gonçalves**

2026 AFA Meeting

Outline

The Background for this Paper

- We want to compare P (price) with V (fundamental value)
- P satisfies the valuation identity
- V is defined by the DCF equation:

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- Cho & Polk (2024) show DCF $\Rightarrow$ V - P = Discounted Alpha

$$p_{i,t} \;=\; const \;+\; cf_{i,t} \;+\; \sum\nolimits_{\tau=1}^{\infty} \rho^{\tau-1}\cdot\mathbb{E}_t[\Delta cf_{i,t+\tau}] \;-\; \sum\nolimits_{\tau=1}^{\infty} \rho^{\tau-1}\cdot\mathbb{E}_t[r_{i,t+\tau}]$$

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\alpha_{i,t} &= vp_{i,t} - \rho \cdot \mathbb{E}_t[vp_{i,t+1}] \\
&= (\gamma_z z_{i,t} + u_{i,t}) - \rho \cdot (\gamma_z \mathbb{E}_t[z_{i,t+1}] + \mathbb{E}_t[u_{i,t+1}]) \\
&= (\gamma_z z_{i,t} + u_{i,t}) - \rho \cdot (\gamma_z \phi_z z_{i,t} + \mathbb{E}_t[u_{i,t+1}]) \\
&= \gamma_z (\mathrm{I} - \rho \cdot \phi_z) z_{i,t} + (u_{i,t} - \mathbb{E}_t[u_{i,t+1}]) \\
&= b_z z_{i,t} + \mathrm{residual}_{i,t}
\end{aligned}$$

  - Estimate ϕ_z and $b_z = \gamma_z(\mathrm{I} - \rho \cdot \phi_z)$ from regressions
  - Recover $\gamma_z = (\mathrm{I} - \rho \cdot \phi_z)^{-1} b_z$ $\Rightarrow$ $\boxed{\hat{vp}_{i,t} = \gamma_z z_{i,t}}$

This Paper in a Nutshell

Log-Linear :

$$vp_{i,t} = \sum_{\tau=1}^{\infty} \rho^{\tau-1} \cdot \alpha_{i,t+\tau-1}$$

Non-Linear :

$$vp_{i,t} = \sum_{\tau=1}^{\infty} \mathbb{E}_t \left[\widetilde{M}_{t\to t+\tau} \cdot G_{i,t+\tau-1} \cdot \alpha_{i,t+\tau-1} \right]$$

- Cho & Polk (2024) study ex-post mispricing (non-linear)
- The current paper studies ex-ante mispricing (non-linear)
- The implementation logic (in the simpler log-linear setting):

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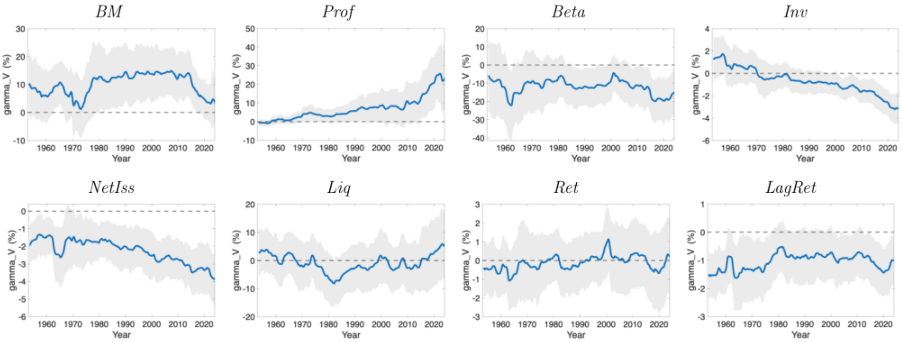

Figure 2: **Moving-Window Multivariate Coefficients of CAPM Underpricing on Stock Characteristics**

This Paper in a Nutshell

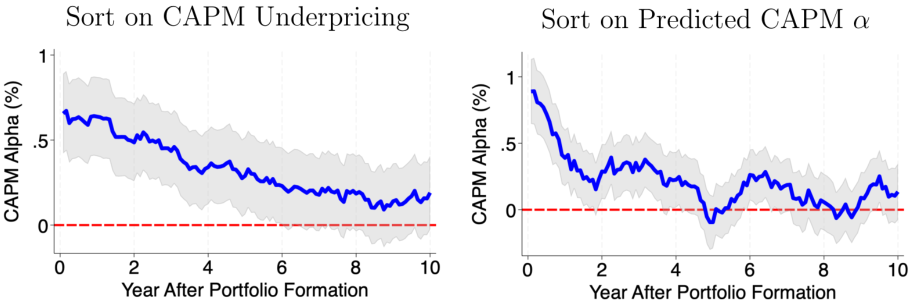

Figure 4: **Out-of-Sample Alphas on Portfolios Sorted on Real-time Underpricing**

This Paper in a Nutshell

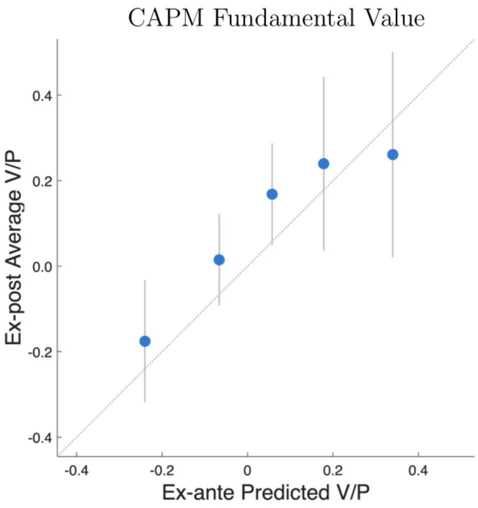

Figure 5: **Ex-Ante Predicted vs. Ex-Post Realized Fundamental Value**

This Paper in a Nutshell

Share of Market Cap > 50% Mispriced

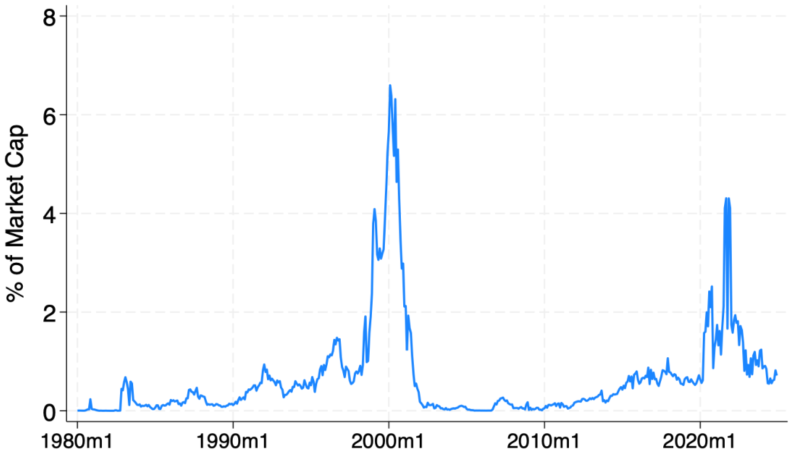

Figure 8: **CAPM-Implied Mispriced Market Share Over Time**

Outline

1) The Discount Rate Sensitivity Argument

- "This formulation directly addresses the main weakness of DCF: cash flows have high duration...leading to extreme sensitivity to discount-rate estimation error...Discounted-alpha valuation sharply reduces this sensitivity because much of an asset's cash flow duration is contained in the price, which is observed without error."

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$$\underbrace{V}_{\text{high duration}} = \underbrace{P}_{\text{high duration}} + \underbrace{\text{discounted alphas}}_{\text{low duration}} \tag{4}$$

The duration of discounted alphas is zero for stocks with zero future alphas

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- The duration argument does not justify using Dα over DCF
- Should we still consider the Dα method?
- Yes: the Dα method has important empirical advantages:
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- Replace duration argument in main text with above arguments

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- Should we still consider the Dα method?
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Some Other Comments

- The CAPM looks like a good model for V
  - It would be useful to also have a model with constant SDF
  - In this case, alphas are expected excess returns
  - How much does the CAPM improves upon such a model?
- Misvaluations have trended up since 2000
  - Is this due to well-known measurement issues with BE/ME?
  - Long estimation window: BE/ME appears important in 2000s
  - What happens if you fully replace BE/ME with FE/ME?
- Is the empirical design equivalent to a VAR?
  - In the log-linear setting, $\gamma_z = (\mathrm{I} - \rho \cdot \phi_z)^{-1} b_z$
  - This is the same you would get with a VAR
  - Is there a VAR interpretation for your full implementation?

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The Paper

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- ...and makes substantial progress
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- Good luck!

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