# Discussion of Erasing Alpha

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# A Hundred-Billion-to-Trillion Question

- How much capital must move to eliminate the alpha of an investment strategy?
- Method: translate the quantity reallocation to change in alpha via

$$\Delta\alpha \approx \underbrace{(\text{price impact per \$})}_{\text{multiplier}} \times \underbrace{(\text{pass-through})}_{\text{price}\to E[r]} \times \underbrace{(\text{ownership overlap})}_{\text{holdings exposure}}$$

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  - The draft estimates: **trillions**
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- **Main finding**: to eliminate the value alpha, we need to move _____
  - The draft estimates: **trillions**
  - The talk's updated numbers: **hundreds of billions**
- **My take**: both can be right
  - It depends on the horizon
  - The paper needs an explicit stance on the horizon of the counterfactual
  - I argue trillion is the better answer

## How Much Capital to Erase the Value Alpha?

Buy into the top-half B/M portfolio until the alpha disappears:

$$C = \underbrace{\frac{\alpha}{\theta}}_{\text{pass-through}} \times \underbrace{\frac{1}{M}}_{\text{multiplier}} \times \underbrace{\$\text{MarketCap}}_{\text{top-half B/M}}$$

- Annual alpha $\alpha$ (top $-$ bottom half long-short): **3%**
- Multiplier $M$ (1% inflow $\Rightarrow$ $M$% price impact): $M = 2$ (1-3 pick your favorite)
- \$MarketCap (top-half B/M, 2019-Dec): **\$7 trn**
- Pass-through $\theta$ (price $\to E[r]$) — the only thing that changes:
  - Paper $\theta = 0.04$: $C = \frac{3\%}{0.04} \times \frac{1}{2} \times \$7\text{trn} \approx \$\mathbf{2.5}$ trn
  - Talk $\theta = 0.4$: $C \approx \$\mathbf{250}$ bn

## What Is the "Right" Passthrough?

Campbell–Shiller:

$$r_{t+1} = \kappa + (1-\rho)\, d_{t+1} + \rho\, p_{t+1} - p_t$$

Assume the price impact does not change cash flows, price to expected return is given as:

$$\Delta\mu_{t+1} \approx -\theta\, \Delta p_t, \qquad \theta \equiv 1 - \rho\psi$$

- $\rho = P/(P+D) \approx 0.96$
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**Permanent** impact ($\psi = 1$): price stays $\Rightarrow \theta = 1-\rho \approx$ **0.04** (small $\Rightarrow$ trillions needed)

**Transitory** impact (price reverts, $\psi \ll 1$): $\theta \approx$ **0.4** (literature calibration; used in the talk baseline)

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Which $\theta$? It depends on the horizon of the counterfactual.

## Price Impact Persistence Is Shock-Specific

Two strategies for a $100 inflow into the value portfolio:

- **Transitory:** gradually withdraw within one year
- **Permanent:** buy and hold forever

Both answers are correct — they target different objectives:

- ∼$250bn: one-year reallocation to erase the alpha for one year
- Trillions: permanent reallocation to permanently erase the alpha

The permanent counterfactual is more meaningful and simpler to analyze:

- Transitory strategy: dynamics and expectations matter; multiplier may not be policy-invariant
- Permanent strategy: needs only the long-term multiplier and the P/D ratio

## The Narrative-Methodology Mismatch

- Narrative hints at **persistent** reallocation
- But estimates **mix horizons**
- Multipliers from KY demand system $\Rightarrow$ **long-term**
- Pass-through from literature: $r_{t+1} = \hat{\theta} f_t + \varepsilon$ at **monthly/quarterly** freq
- KRY: C-S decomposition (adj. for $\mu_t$ dynamics)
- More relevant for this paper!

*Calibrating pass-through $\theta$*

| Study | $\theta$ |
|---|---|
| Koijen, Richmond & Yogo (2024) | 0.10 |
| Davis, Kargar & Li (2025) | 0.12 |
| **Huang, Song & Xiang (2025)** | **0.40** |
| van der Beck (2025) | 0.57 |
| Huang, Hu, Song & Xiang (2026) | 0.64 |

## Permanent Reallocation Needs Trillions

Yet another back-of-the-envelope:

- Top half of B/M portfolio: \$7T at P/D $\approx 30$
- Bottom half: \$20T at P/D $\approx 50$
- To permanently erase the alpha, raise the top-half valuation by 67% $(50/30 \approx 1.67)$
- That takes *trillions* of permanent capital reallocation

Just a ballpark estimate. The paper is much richer and meticulous!

- Substitution and spillover effects
- Ownership structure of stocks
- ...

## Conclusion

**This paper:** putting dollar tags to trading strategies

- Value alpha is huge—a hugely underappreciated point in the literature

**My discussion:** horizon matters—take an explicit stance

- Transitory vs. permanent reallocation give very different answers
- The permanent counterfactual is more meaningful and points to trillions

**Potential applications:** capacity of the factor zoo

- Which strategies have larger or smaller capacity?
- Can pre-existing capacity predict alpha decay?