We find that more **passive ETF ownership** lowers **market quality** in US equities.

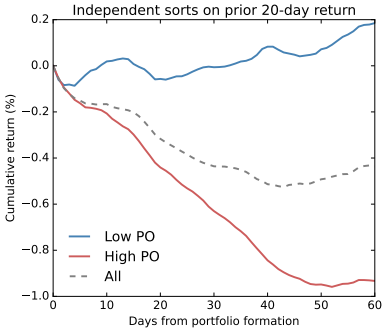
Passive Investing and Market Quality

Philipp Höfler, Christian Schlag, Maik Schmeling (Goethe University Frankfurt)

1 Motivation

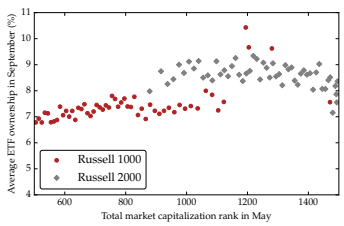
- Large growth in passive products over recent years, especially ETFs due to their high liquidity and low cost
- How do passive ETFs affect **market quality**, i.e. **liquidity and price efficiency** of a market (O'Hara and Ye, 2011)?
- Passive ETFs might lower market quality by (i) attracting unsophisticated noise traders and (ii) crowding out active investors that collect and process information
- However, cheap trading and ease of shorting might also facilitate the incorporation of new information into prices
  → Literature inconclusive

2 Short-term reversal



- Short-term reversals proxy for returns to liquidity provision because recent returns are a noisy measure of unobserved market-maker inventory imbalances
- Figure shows value-weighted independent double sorts
  → **Stronger return reversal** among stocks with high PO

3 Identification strategy



- Use assignment to the top of the Russell 2000 instead of the bottom of Russell 1000 as an instrument for PO (e.g., Appel et al., 2016, 2019; Pavlova and Sikorskaya, 2023)

4 Regression results

- Why does PO reduce market-making capacity?

→ We test the impact of PO on liquidity, price efficiency, and likelihood for extreme price movements at the stock level

Dep. variable =	Bid-ask spread	Liquidity beta	Short-term reversal beta	Idiosycratic volatility
$\widehat{PO}$	0.9***	0.92***	0.69***	0.62***
	(4.56)	(3.67)	(3.69)	(2.79)
Bandwidth	300	300	300	300
Polynomial order	3	3	3	3
Float control	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	17349	17868	17890	17890
R-squared (%)	2.07	0.37	0.42	6.03

- How noise trading affects liquidity is an open question in the literature (Peress and Schmidt, 2020)
  → We look at this through shifts in PO
- Our results show that **PO significantly reduces** several dimensions of **liquidity** at the stock-level
- More noise, higher illiquidity, and lower demand elasticity might result in more extreme price movements
  → We find a **significant increase in tail risk** measured from short-maturity deep out-of-the-money options

		Variance shares			Firm Info	
Dep. variable =	Variance	Noise	Firm Info	Market Info	Private Info	Public Info
$\widehat{PO}$	12.79***	6.41***	-9.10***	2.69	-14.47***	5.37*
	(4.09)	(3.65)	(-2.84)	(0.94)	(-4.31)	(1.91)
Bandwidth	300	300	300	300	300	300
Polynomial order	3	3	3	3	3	3
Float control	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17197	17197	17197	17197	17197	17197
R-squared (%)	3.02	0.34	1.76	2.60	0.20	2.12

- We perform a variance decomposition at the stock-year-level, resulting in variance shares of (i) 15% market info, (ii) 65% firm-specific info, and (iii) 20% noise
- Results show that a one standard deviation increase in PO is associated with a 6 pp. **higher noise share** and 9 pp. **lower firm-specific information share**
- Additional results suggest that PO significantly increases a stock's **exposure to market-wide sentiment** shocks through an increase in noise trading

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hoefler@finance.uni-frankfurt.de

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