Wharton
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JACOBS LEVY EQUITY MANAGEMENT CENTER
for Quantitative Financial Research

Discussion: "Reversals and the Returns to Liquidity Provision"

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Motivation

What is the expected return of liquidity provision in capital markets?

- Economists: A central question in asset pricing
- Investors: The immediacy costs they face in their trading
- Regulators: A vital role of market liquidity in maintaining financial stability

Although technological advancements can enhance market liquidity, they also introduce new challenges

- e.g., decimalization, electronic trading facilities, algo trading, big data
- e.g., AI-powered trading (Dou_Goldstein_Ji, 2023)
- Technologies promote herding with similar trading decisions driven by the same strong signals (e.g., SEC Chair, Gary Gensler)
- **The value of liquidity provision & market illiquidity remain significant**

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A difficult question to address

Key challenge: What is "market liquidity"?

- It is determined by the demand and supply of "immediacy" in trading (Grossman_Miller, 1988)

Market liquidity is an abstract and multi-dimensional concept (e.g., Kyle, 1985)

- Numerous factors from both the demand and supply sides play a role
- Pinning it down to just one number or statistic is tough

Different facets of market liquidity may have distinct market prices

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The objective of this paper

Estimate the expected return from providing various types of liquidity

Step 1: Identify the component in reversals due to liquidity provision (IRRX)

- Remove the following two components from the standard reversals (REV)
  - The post-earnings-announcement drift (PEAD)
  - The industry momentum (IMOM)

Step 2: Dissect liquidity-driven return reversals to identify their sources, focusing on:

- Inventory risk, measured by stock return volatility
- Inventory duration, measured by stock turnover

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Decomposition of short-term return reversals

Panel A: Strategy average monthly excess return (%)

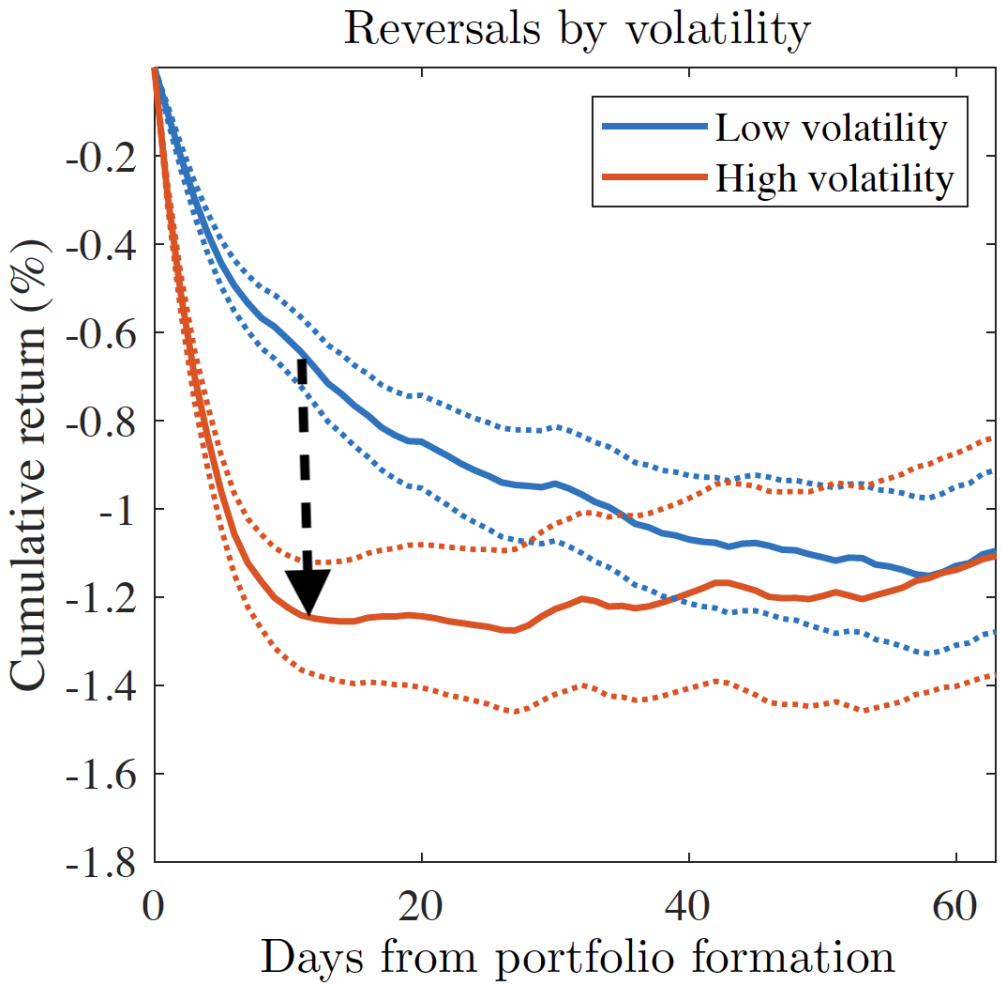
REV	PEAD	IMOM	IRR	IRRX
0.31	0.53	0.68	0.74	1.08
[1.68]	[5.45]	[3.57]	[5.40]	[9.35]

Panel B: Results from $\mathrm{REV}_t = \alpha + \beta_{\mathrm{IRRX}}\mathrm{IRRX}_t + \beta_{\mathrm{PEAD}}\mathrm{PEAD}_t + \beta_{\mathrm{IMOM}}\mathrm{IMOM}_t + \epsilon_t$

α	β_{IRRX}	β_{PEAD}	β_{IMOM}	Adj. R^2 (%)
0.13	0.76	-0.54	-0.53	87.0
[1.73]	[27.8]	[-17.4]	[-30.4]	

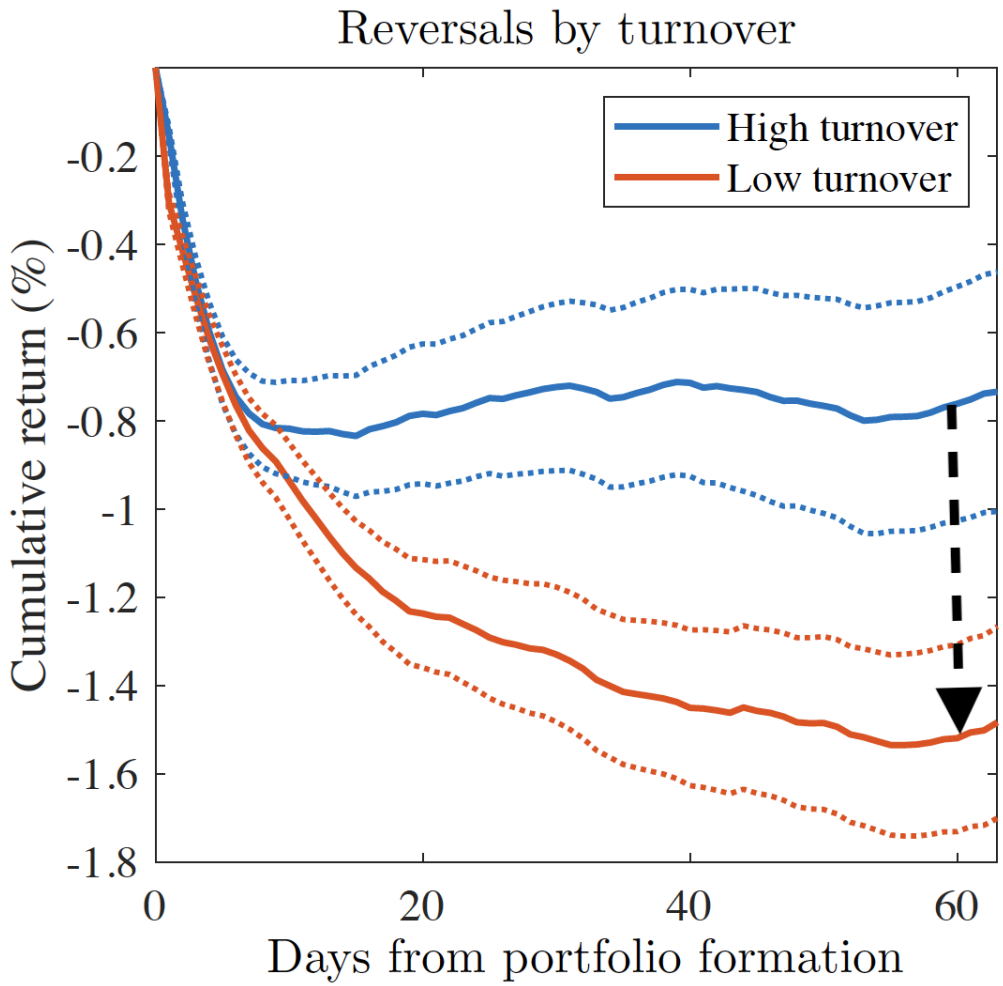
- The average return of IRRX is very significant
- High adjusted R^2

Inventory risk (stock return volatility)



- About 0.6% for 13 days $\Rightarrow$ about 1.2% monthly excess return

Inventory duration (stock turnover)



- About 0.8% for 60 days $\Rightarrow$ about 0.4% monthly excess return

1. IRRX $\approx$ liquidity-provision component?

The idea: remove the following components from the standard reversals

- Drift resulting from an under-reaction to firm-level cash flow
- Drift resulting from an under-reaction to industry-level cash flow news

PEAD and IMOM may be insufficient

- Under-reaction to firm-level cash flow news
  - Return predictability via input-output links (Cohen_Frazzini, 2008)
- Under-reaction to industry-level cash flow news
  - Lead and lag industries (Hong_Torous_Valkanov, 2007)
  - Cross-industry MOM via the competition network (Dou_Wu, 2023)

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2. Identifying the expected return on inventory risk

For such identification, causal inferences are necessary

- Return volatility and return reversal are both endogenous
- The association may not reflect the causal relation (aim to establish)

Reverse causality issues:

- High return volatility $\Longleftarrow$ strong and quick return reversals

Noise trader risk

- The monthly standard deviation of retail investors order imbalance (Boehmer_Jones_Zhang_Zhang, 2021)
- It is the volatility risk that comes from short-term noise trading (and thus captures the inventory risk)

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3. Demand side of market liquidity

Inventory risk and duration are both supply-side factors of liquidity

- How about the demand-side factors of liquidity?

Trading intensity of noise traders

- Retail investors' absolute monthly order imbalance

Price impact estimated based on the demand system (Koijen_Yogo, 2019)

- What are their relations with the dynamics of return reversals?

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Conclusion

- **A significant empirical contribution on an important topic**

- **What I appreciate the most:**
  - A useful estimate of the expected returns from liquidity provision
  - A valuable perspective on the pricing of liquidity from various origins

- **Suggestions:**
  - Refine the metric for the liquidity-provision component in the reversals
  - Sharpen the identification of the impacts of inventory risk
  - Explore the factors influencing liquidity from the demand perspective