Attention Spillover in Asset Pricing

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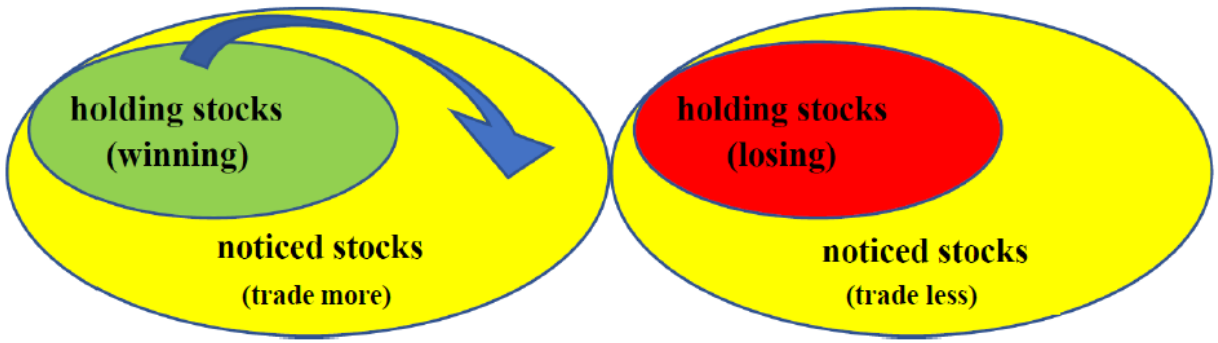
ABFER

Motivation

- **Positive feedback trading**
  Investors tend to trade more after positive investment experience. (Gervais and Odean, 2001).
- **Limited attention**
  Investor's attention is a scarce resource, especially when deciding which stock to buy from among thousands of choices.
- **Positive feedback trading + limited attention: attention spillover**
  After a positive trading experience, an investor tends to purchase stocks that have caught his/her attention.

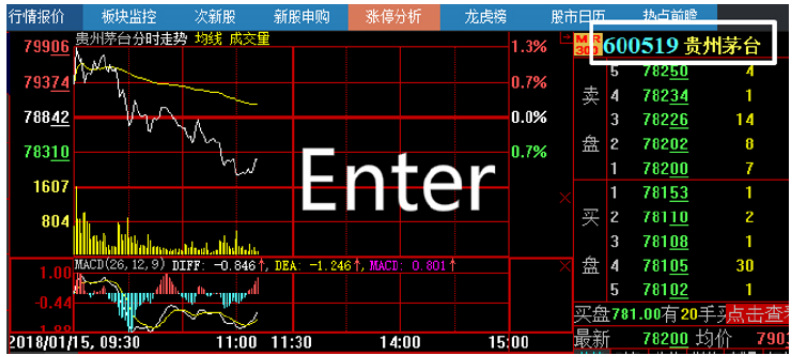


Motivation

- **Asset pricing implication:** stocks that can attract attention of investors who just have had positive performance tend to experience more buying pressure and thus become overvalued.
- **Hurdle of empirical tests:** how to identify such stocks?
- **Our identification: exploit a unique screen display feature**
  - The order of stock display is determined by the stock listing codes.
  - Investors tend to pay more attention to stocks with listing codes adjacent to their currently held stocks.

Screen Display Settings

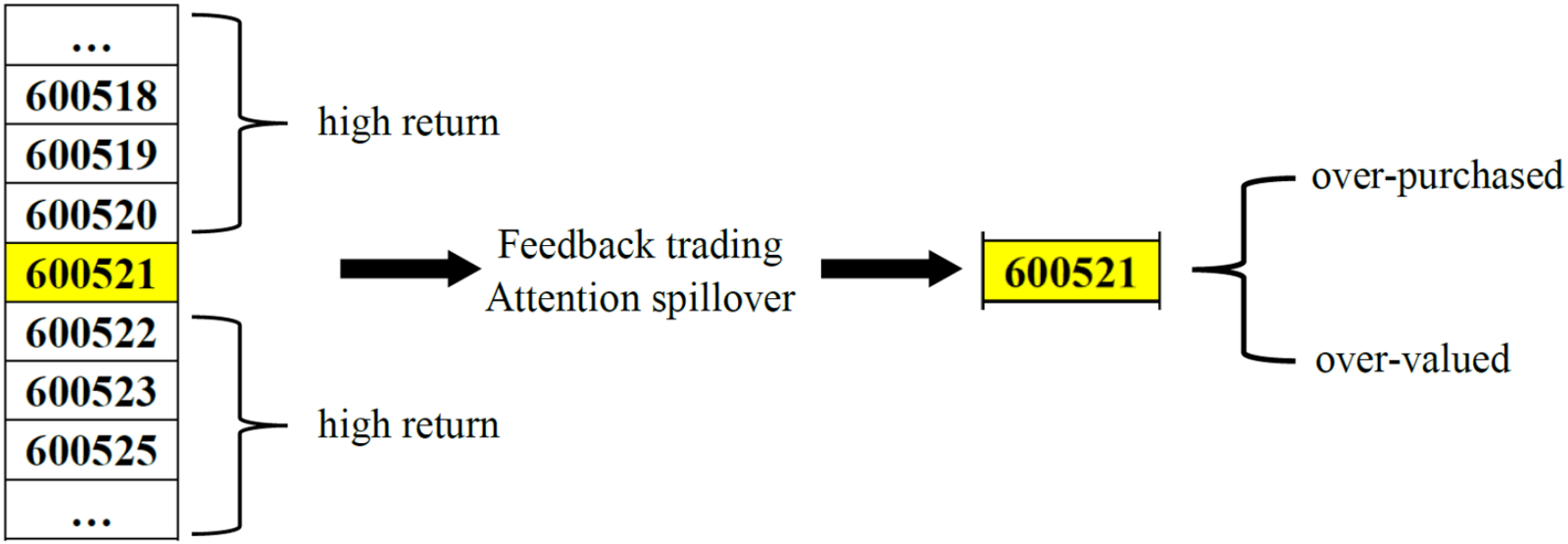
- Investors are more likely to be caught attention by stocks with adjacent listing codes.



Main Idea

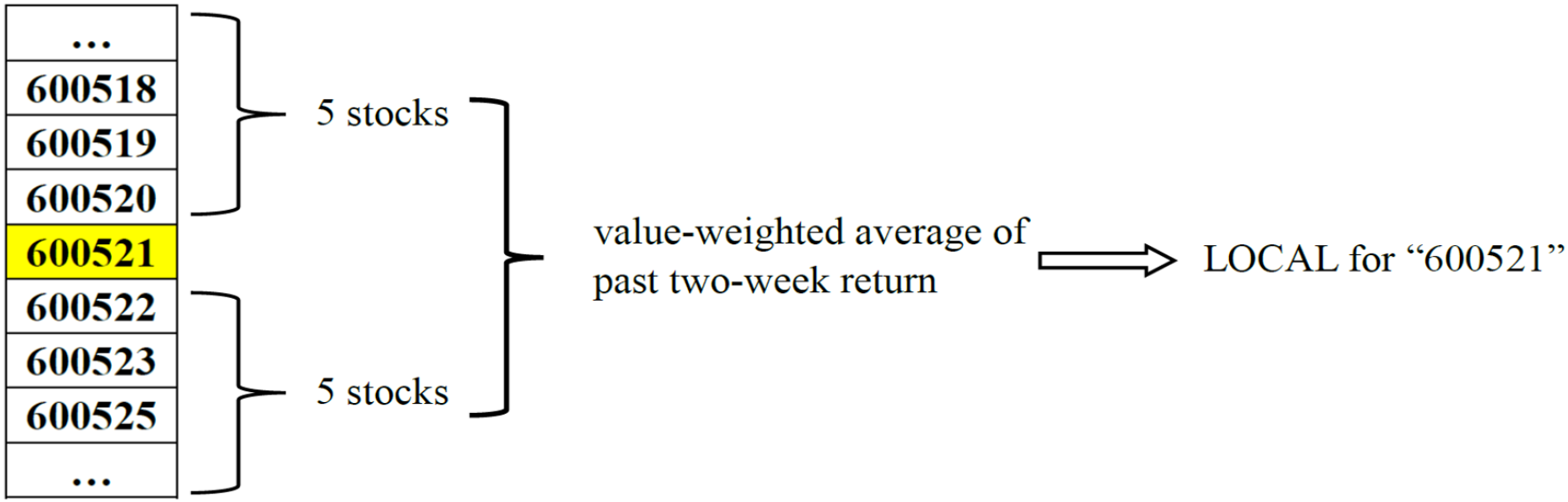
- **Stock-level implication:**

  Focal stocks' return and turnover can be predicted by past performance of adjacent stocks.



Key Variables

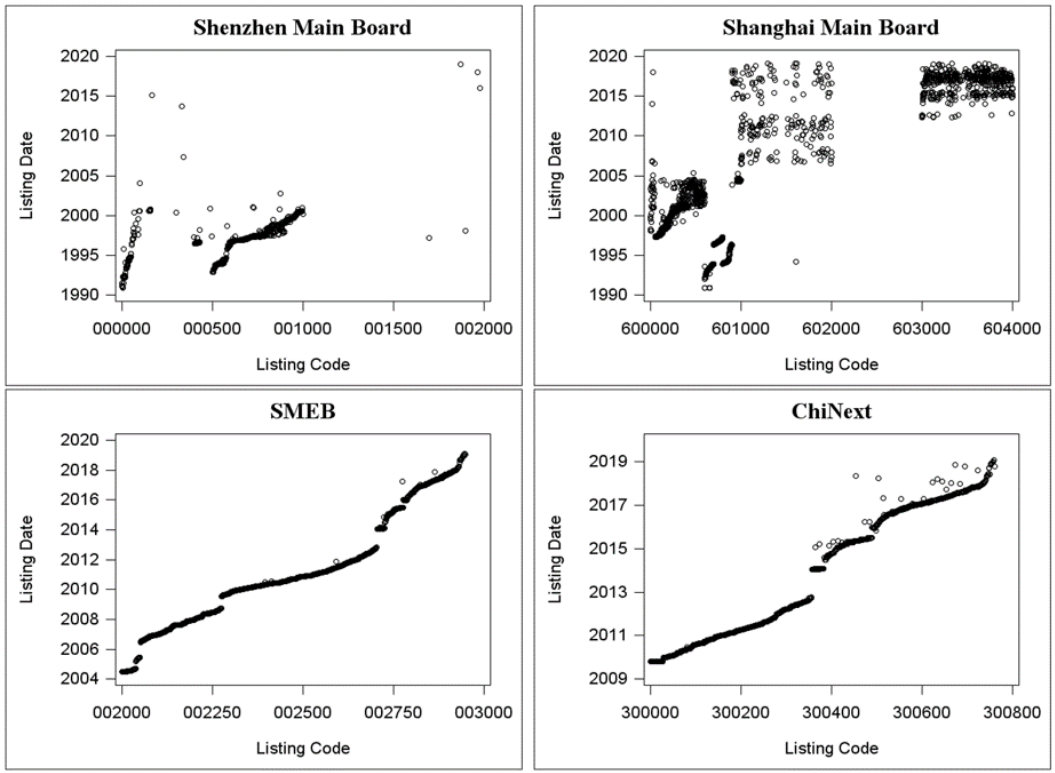
- **H1:** A stock's return can be predicted by LOCAL (RLOCAL).
- **H2:** A stock's turnover can be predicted by LOCAL (RLOCAL).



$$LOCAL_{i,t} = \alpha_t + \beta_t RETURN_{i,t} + RLOCAL_{i,t}$$

The assignment of listing codes

- At the heart of our identification is the quasi-random assignment of listing codes.
- No discernable patterns between listing codes and stock characteristics, except for listing dates.
- The relation between listing codes and listing dates.



The assignment of listing codes

- The relation between listing codes and listing dates.
  - Given the lengthy administrative approval-based IPO process, firms typically apply for IPO as soon as they meet the requirements (little room for timing).
  - Empirically, stocks with similar listing codes have almost no correlation in fundamental variables.
  - We control for age cohorts by adding fixed effects.

Literature Review

- **Attention-induced price impact**
  Google search volume index (Da, Engelberg and Gao, 2011), **Bloomberg search volume and readership** (Ben-Rephael, Da, and Israelsen, 2017), **media coverage** (Huberman and Regev, 2001; Fang and Peress, 2009; Kaniel and Parham, 2017), **account logins** (Sicherman, Loewenstein, Seppi, and Utkus, 2016; Gargano and Rossi, 2018), **advertising expenditure** (Lou, 2014).
- **Positive feedback trading**
  Self-attribution bias (Gervais and Odean, 2001); **biased lucky belief** (Gao, Shi, and Zhao, 2021); **extrapolation** (Pearson, Yang, and Zhang, 2020).
- **LOCAL has little relation with stock's fundamentals.**
- **The interaction between these two effects.**

Main Results

- **One-way sorts:** return predictability of RLOCAL.

	P1	P2	P3	P4	P5	P5-P1	Age-adj	FF5 Alpha
EW	7.914	10.752	12.191	13.100	15.962	8.048	7.261	8.003
	(0.86)	(1.15)	(1.31)	(1.39)	(1.68)	(5.44)	(5.51)	(5.44)
VW	2.951	6.321	8.517	8.400	11.693	8.742	7.576	8.068
	(0.35)	(0.77)	(1.03)	(0.97)	(1.41)	(2.75)	(3.33)	(2.60)
VW (-top 30)	3.259	7.331	7.584	9.579	11.554	8.295	7.702	7.995
	(0.37)	(0.82)	(0.86)	(1.06)	(1.30)	(4.68)	(4.94)	(4.51)

Main Results

- **Fama-MacBeth regressions:** return predictability of LOCAL after controlling a wide range of characteristics.

	(1)	(2)	(3)	(4)	(5)
LOCAL	0.008	0.009	0.004	0.004	0.004
	(3.69)	(4.49)	(2.25)	(2.38)	(2.26)
Controls		Ret_{-2w}	(2)+ LogME, Beta, LogBM, $Ret_{-12m,-2m}$, $Ret_{-36m,-13m}$	(3)+ ILLIQ, IVOL, Turnover	(4)+ Max, Skew
Age FE	Yes	Yes	Yes	Yes	Yes

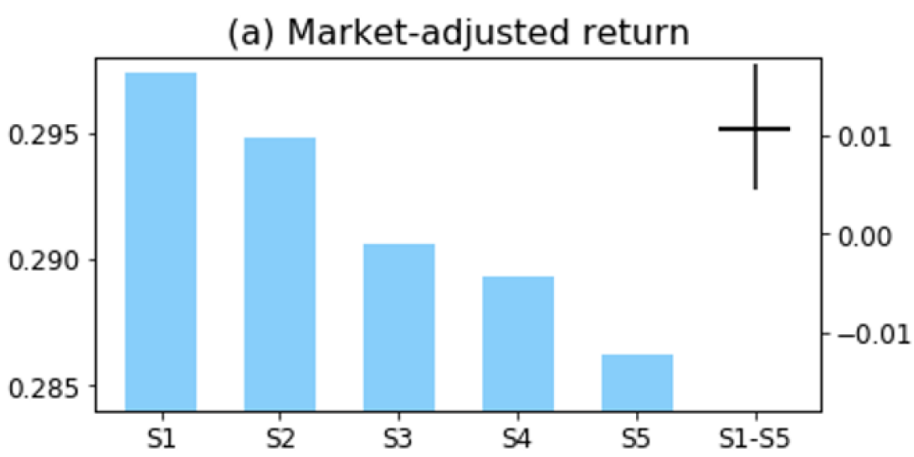
Main Results

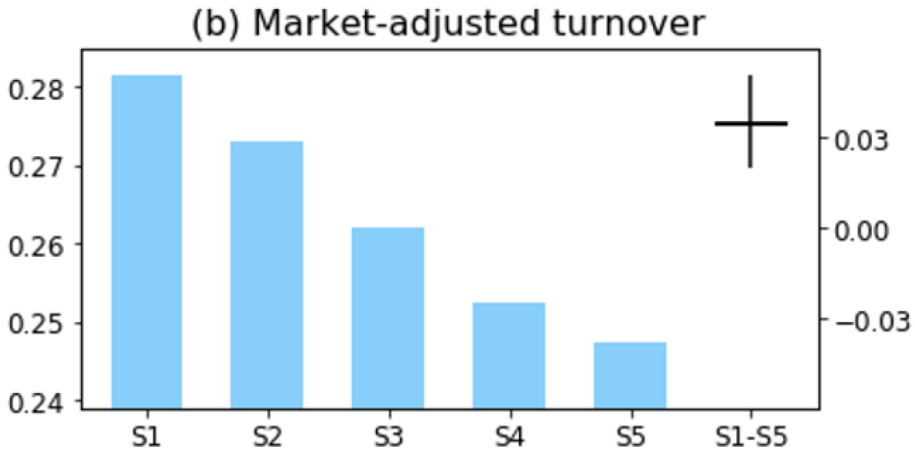
- **One-way sorts:** turnover predictability of RLOCAL.

	Turnover		Abnormal Turnover		OIBNUM		OIBVOL	
	EW	VW	EW	VW	EW	VW	EW	VW
P1	10.846	7.088	-0.302	-0.322	-2.247	-1.324	-2.136	-1.258
P2	10.756	7.281	-0.262	-0.213	-2.266	-1.189	-2.155	-1.119
P3	10.814	7.42	-0.231	-0.167	-2.228	-1.148	-2.116	-1.076
P4	10.946	7.58	-0.186	-0.112	-2.226	-1.068	-2.115	-0.994
P5	11.217	7.583	-0.081	-0.028	-2.143	-0.939	-2.031	-0.865
P5-P1	0.371	0.495	0.221	0.294	0.105	0.385	0.105	0.392
	(2.95)	(2.70)	(3.89)	(4.36)	(1.65)	(2.19)	(1.65)	(2.25)

Implications for comovement

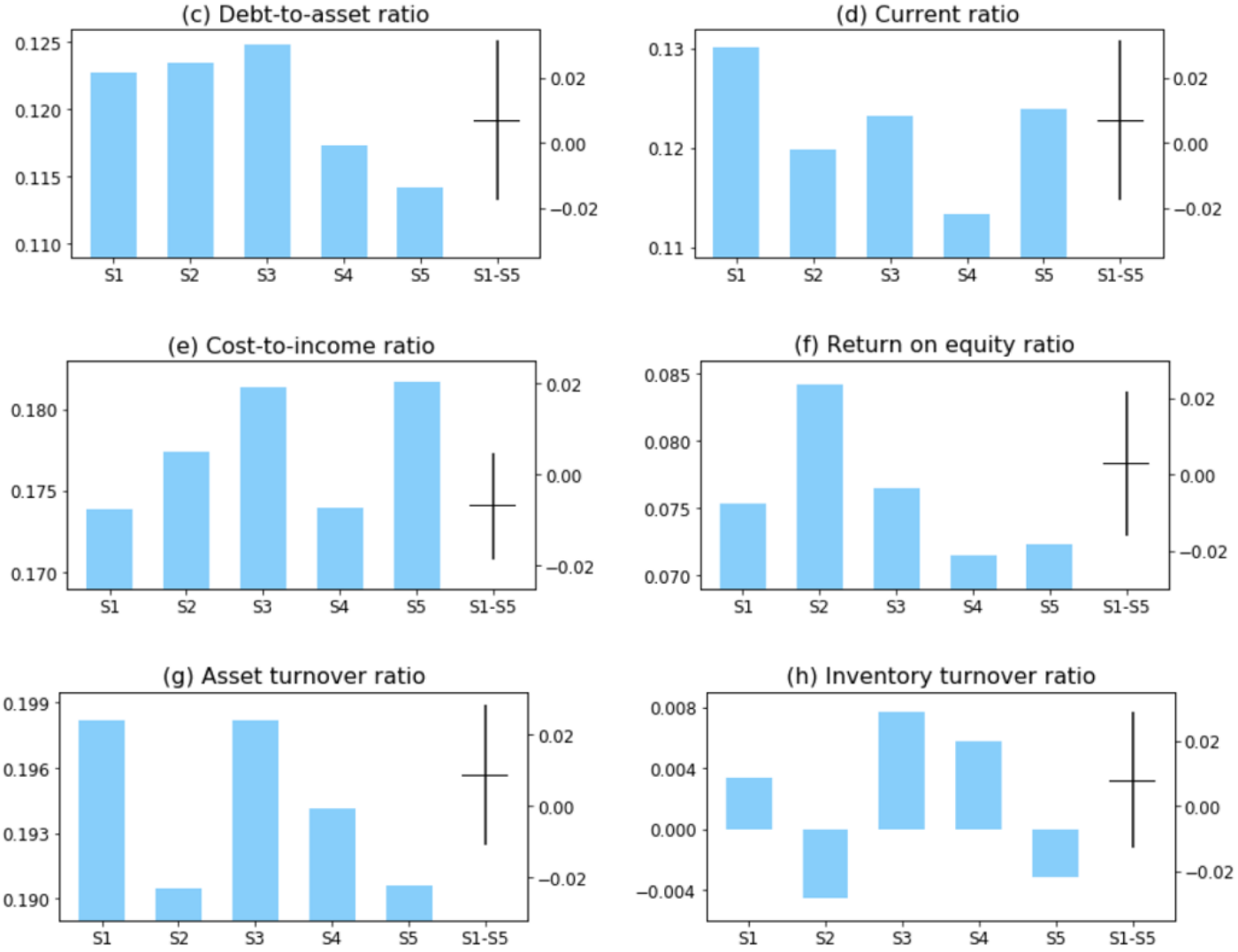
- Return (turnover) correlation should decrease as the distance between stocks increases.





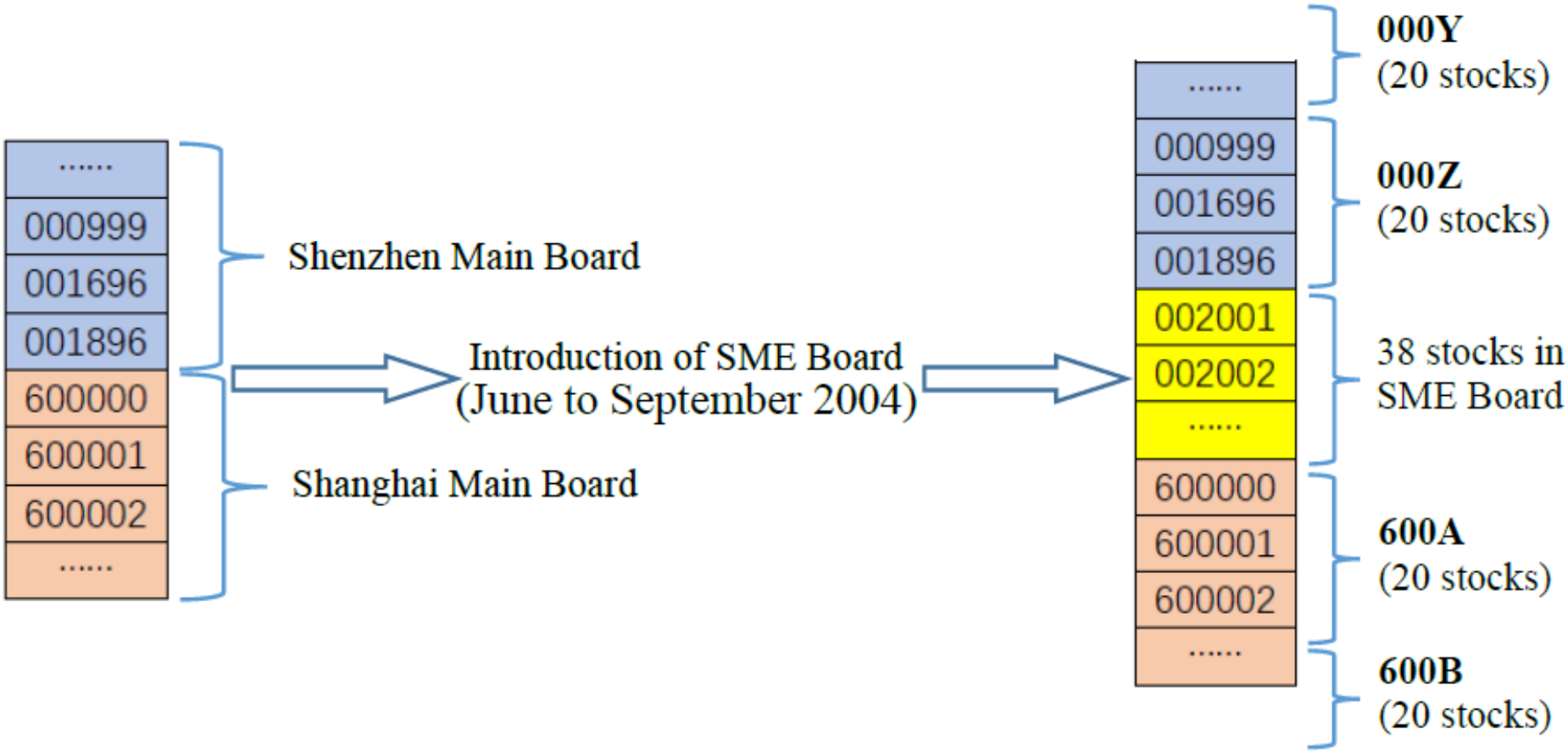
Distance and Correlation in Fundamentals

- No discernable patterns between distance and correlation in fundamental variables.



Quasi-natural experiment

Exogenous shock: the introduction of SME Board that exogenously increases the distance between affected stocks.



DID design: return and turnover correlation before and after the shock

Panel A. DID tests on return correlation

	$\rho(000Y, 000Z)$	$\rho(000Z, 600A)$	diff		$\rho(000Z, 600A)$	$\rho(600A, 600B)$	diff
before	0.415	0.382	-0.033		0.382	0.384	0.002
	(55.62)	(60.85)	(-3.35)		(60.85)	(62.26)	(0.24)
after	0.415	0.302	-0.113		0.302	0.333	0.032
	(53.87)	(36.64)	(-9.59)		(36.64)	(43.90)	(2.85)
diff	0.000	-0.080	-0.080		-0.080	-0.051	0.030
	(-0.04)	(-8.38)	(-6.09)		(-8.38)	(-6.42)	(2.55)
N	400	400	400		400	400	400

Panel B. DID tests on turnover correlation

	$\rho(000Y, 000Z)$	$\rho(000Z, 600A)$	diff		$\rho(000Z, 600A)$	$\rho(600A, 600B)$	diff
before	0.426	0.403	-0.023		0.403	0.389	-0.013
	(41.79)	(45.10)	(-1.82)		(45.10)	(31.71)	(-0.79)
after	0.377	0.255	-0.122		0.255	0.289	0.035
	(30.66)	(20.83)	(-6.68)		(20.83)	(24.96)	(1.94)
diff	-0.049	-0.148	-0.099		-0.148	-0.100	0.048
	(-3.15)	(-10.10)	(-4.77)		(-10.10)	(-6.65)	(2.03)
N	400	400	400		400	400	400

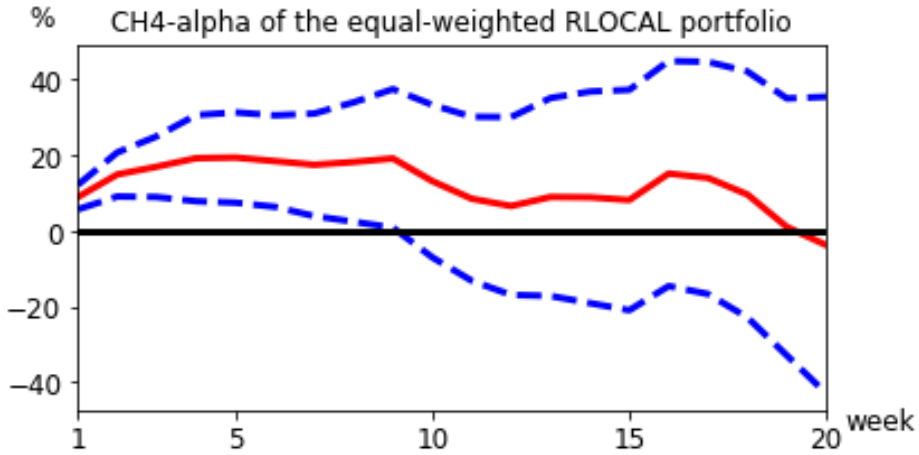
Tests on Key Mechanisms: Placebo Tests

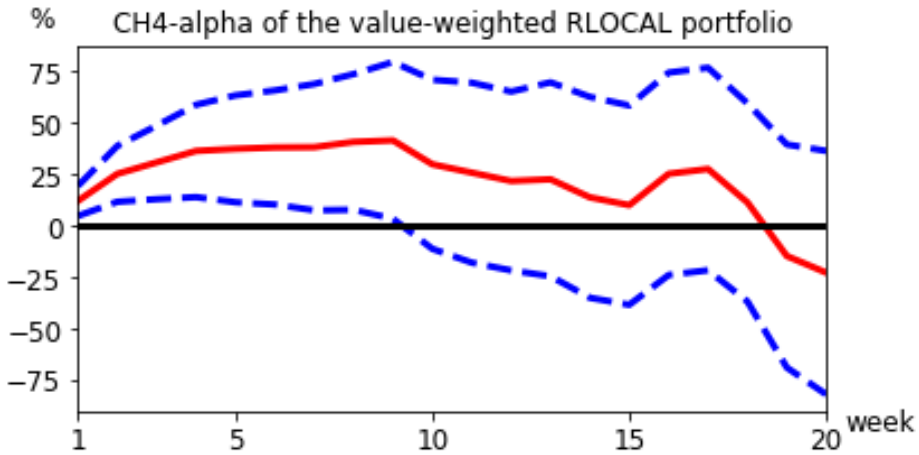
- Panel A: the attention channel
- Panels B and C: the positive feedback channel
- Return predictability disappears if we shut down either channel.

	Panel A: Placebo – Gap100				Panel B: Placebo – Turnover				Panel C: Placebo – TVOL			
Placebo	0.003	0.002	0.001	0.000	0.001	0.000	0.001	0.000	0.033	0.018	0.027	0.021
	(1.47)	(1.27)	(0.54)	(0.37)	(1.08)	(0.37)	(0.78)	(0.46)	(1.55)	(0.87)	(1.97)	(1.55)
LOCAL		0.008		0.004		0.007		0.004		0.007		0.003
		(3.91)		(2.39)		(3.55)		(2.08)		(3.27)		(1.93)
Controls	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Longer Horizon

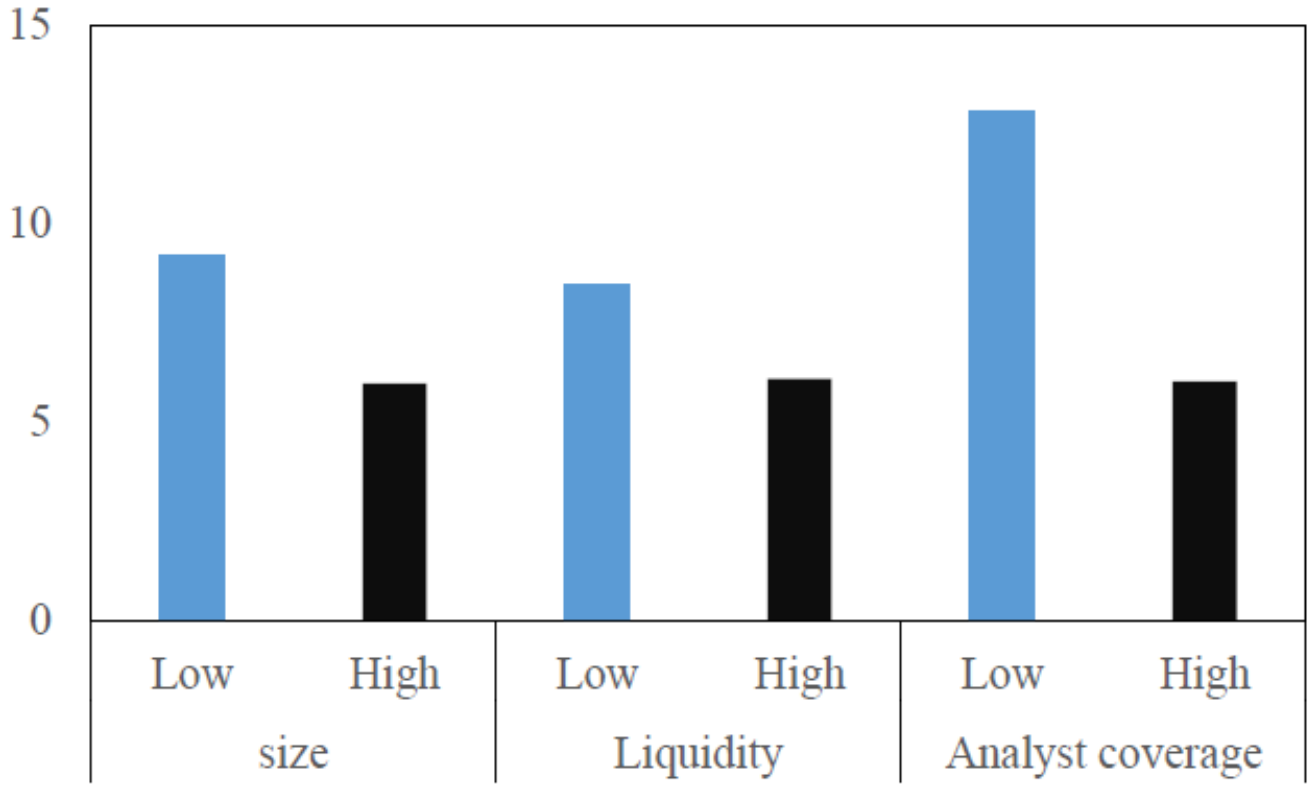
- Excess return of the long-short portfolio based on RLOCAL reverses in the long-run.





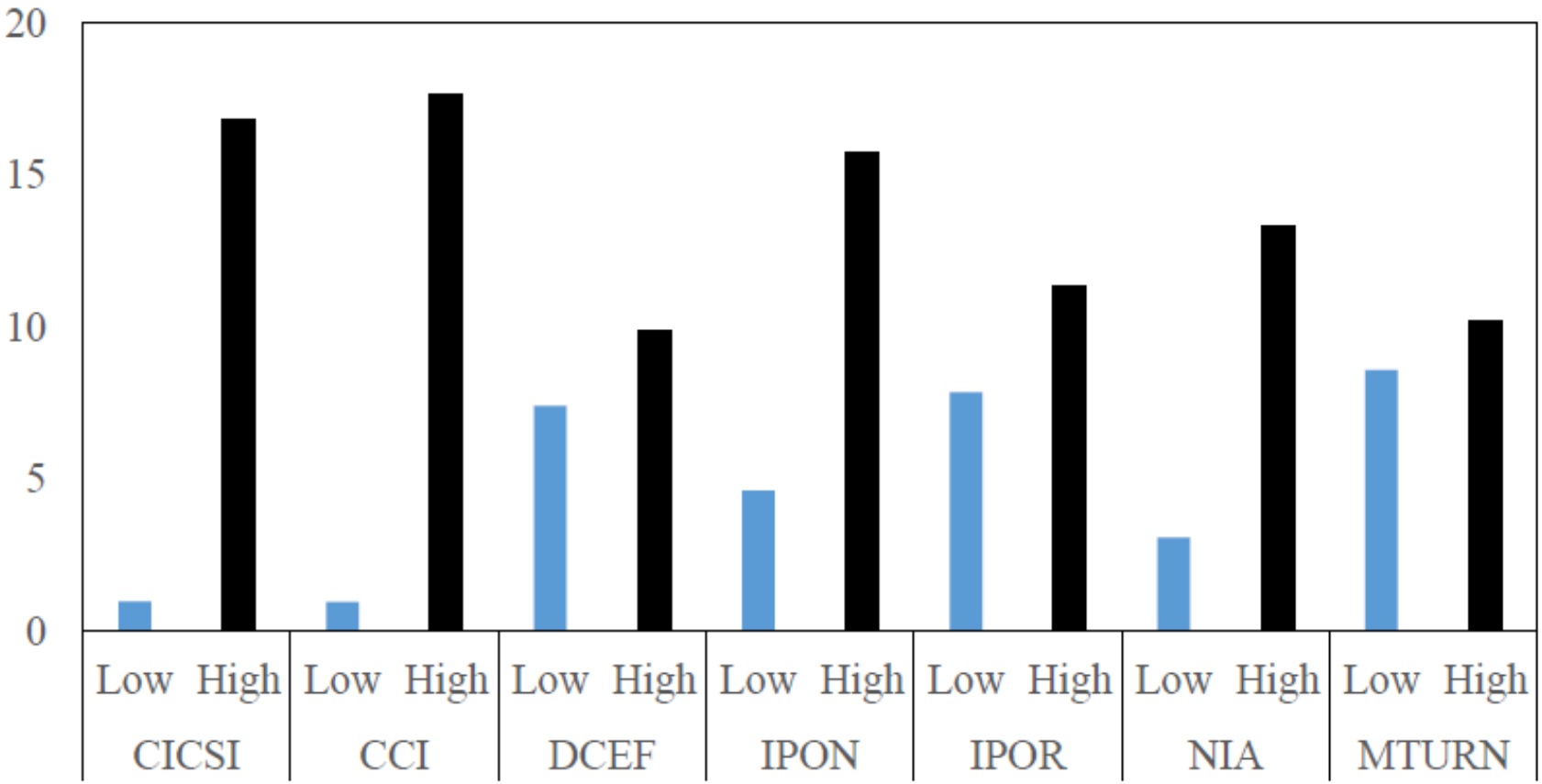
Heterogeneity in the Cross-Section

- Return predictability is stronger among stocks with higher arbitrage costs.



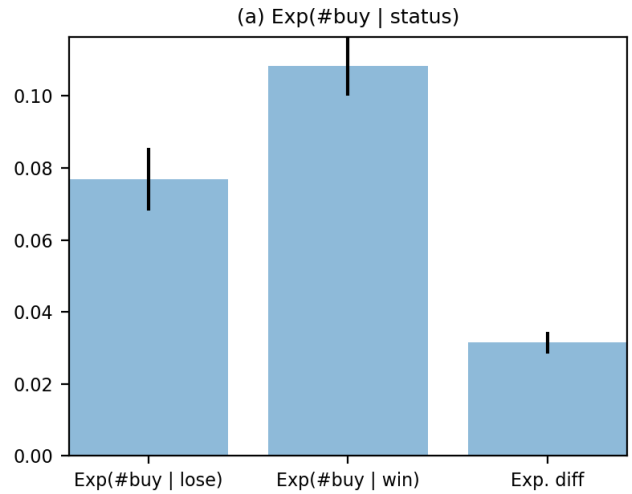
Heterogeneity in the Time Series

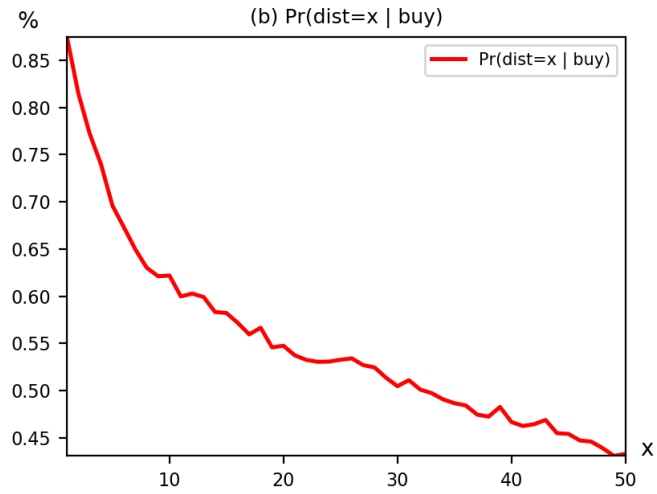
- Return predictability is stronger in periods with higher sentiment.

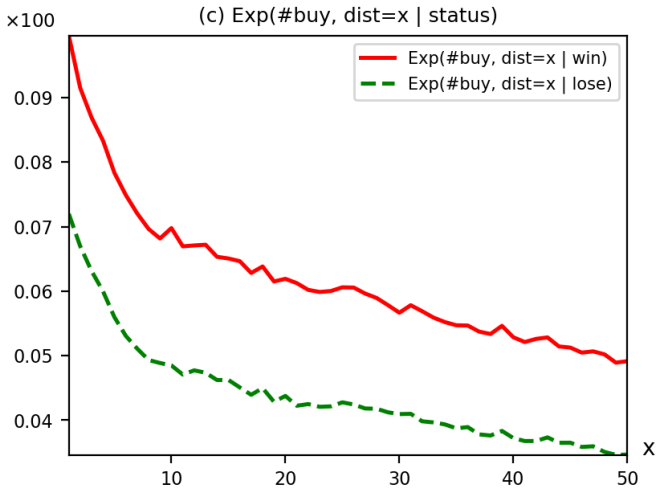


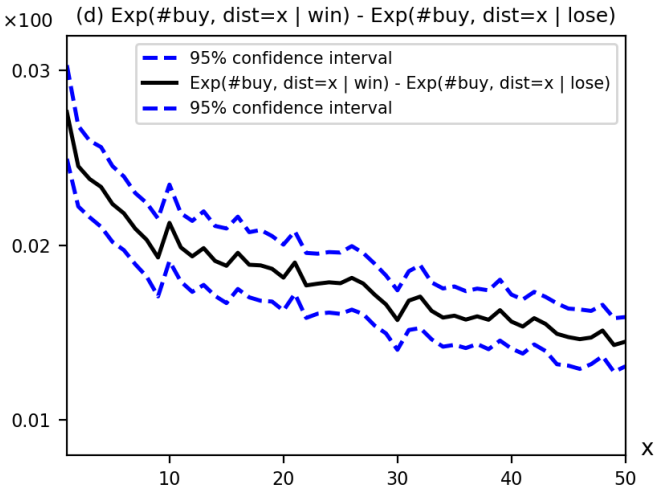
Micro-foundation: Trading Behaviors

- **Data:** 0.43 million investors trading data from 2009 to 2012.



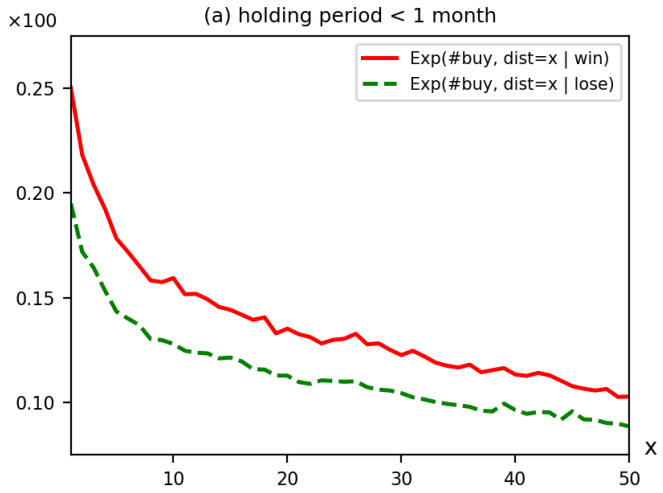


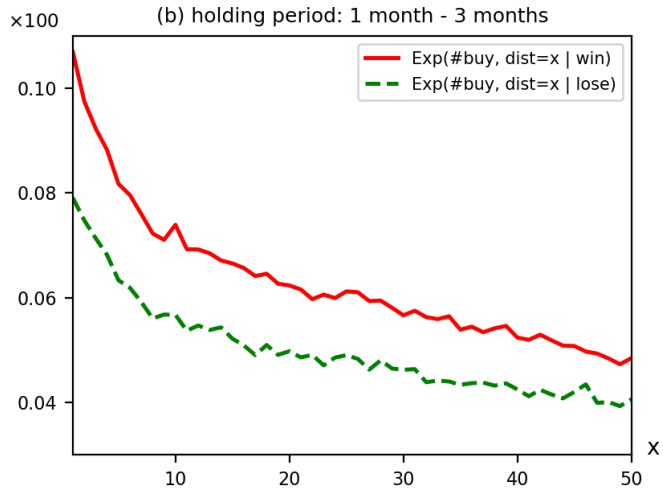


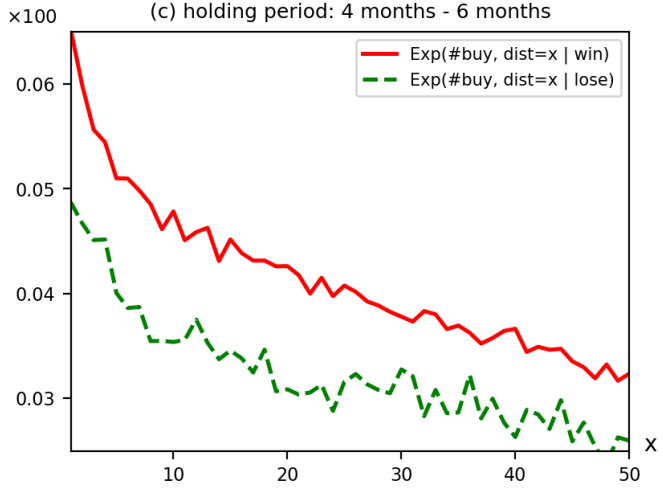


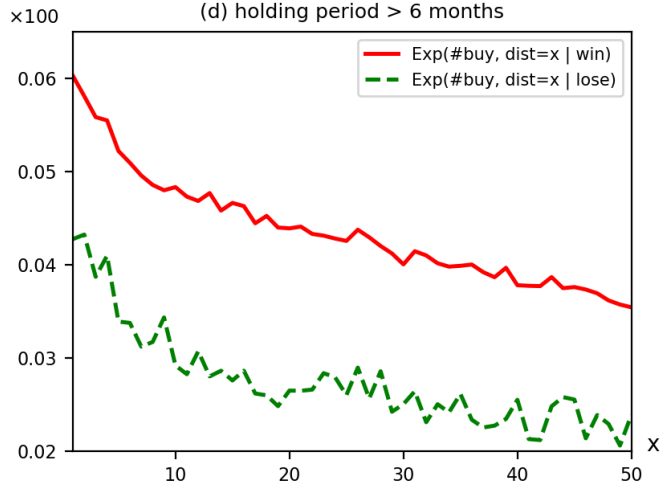
Micro-foundation: Trading Behaviors

- The pattern is stronger when the positive experience is more recent.









Conclusion

- **Attention spillover**
  The LOCAL variable, constructed to capture the recent performance of adjacent stocks, can positively predict future returns and turnover of the focal stock.
- **Mechanisms**
  (1) Attention effect: investors are more likely to be caught attention by stocks that are displayed next to the stocks they currently hold.
  (2) Positive feedback effect: investors tend to expand their positions after positive investment experience.
- **Contribution**
  Novel identification for attention-induced price impact.