

# Preference for dividends and return comovement

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- He **serves on editorial boards** of several academic journals including the Journal of Financial and Quantitative Analysis, International Review of Finance (Editor), Financial Management, and Pacific-Basin Finance Journal.

## RESEARCH AREAS

- return-based trading strategies,
- stock return co-movement,
- liquidity,
- role of financial analysts ,
- international financial markets.

## PUBLICATIONS

- Why do option prices predict stock returns? The role of price pressure in the stock market (MS, 2019)
- Mutual Funds and Mispriced Stocks (MS, 2019)
- Exchange Rate Behavior with Negative Interest Rates: Some Early Negative Observations (JF, 2018)
- Short-Term Reversals: The Effects of Past Returns and Institutional Exits (JFQA, 2017)



# Jing Xie



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## EDUCATION

- Ph.D., Dept. of Finance, National University of Singapore (NUS)
- Visiting Ph.D. Student, Carroll School of Management, Boston College,
- M.Phil. Dept. of Electrical & Electronic Engineering, University of Hong Kong
- B.E. Dept. of Computer Science, University of Science & Technology of China

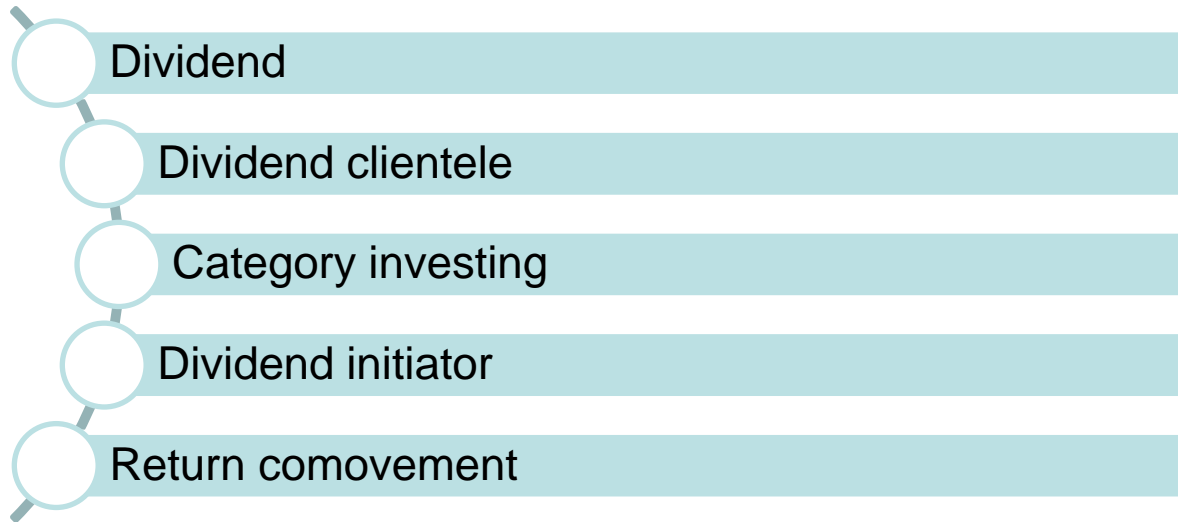
## PUBLICATIONS

- “Understanding Informal Financing,” (with Franklin Allen and Meijun Qian), Journal of Financial Intermediation, July 2019, Vol.39, pp 19-33 3.
- “Institutional Trading and Abel Noser Data,” (with Gang Hu, Koren M. Jo, and Yi Alex Wang), Journal of Corporate Finance, October 2018, Vol.52, pp.143-167

## RESEARCH AREAS

- portfolio management, institutional trading,
- Behavioral finance,
- corporate ownership structure,
- informal financing,
- corporate innovation.





The joint hypotheses of the presence of dividend clienteles and clientele-based return comovement



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# ABSTRACT

- Stocks that initiate dividends tend to comove more with other dividend-paying stocks and comove less with non-dividend payers.
- This is also true for: (a) dividend initiations that are motivated by the exogenous 2003 dividend tax cut; and(b) the cash dividend share class of Citizens Utilities (relative to its stock dividend class).
- We find that flows to dividend prone (averse) mutual funds increase the comovement among dividend-paying (nondividend paying) stocks.
- Overall, the evidence supports the proposition that the trading of pro-dividend (dividend-averse) clienteles induces an extra factor in dividend payers (nonpayers), beyond those associated with changes in common factors.



# 1. Introduction

- Barberis and Shleifer(2003) and Barberis et al. (2005)  
asset categories rather than individual stocks
- Barberis et al., 2005; Boyer, 2011; Green &Hwang, 2009; Greenwood, 2008  
stocks added to the index covary more with other stocks already in the index, and the increased comovement cannot be explained by changes in fundamental correlations
- Chen et al. (2016)  
Prior stock return performance
- Equity Income Funds Fidelity Equity Dividend Income Fund ; T.Rowe Price Dividend Growth Fund ; Vanguard Equity Income Fund
- In this paper, we provide fresh evidence of **return comovement driven by investor preference for dividends**. We find that investors view a stock's dividend characteristics as a salient category and move their funds in and out of the category, causing stocks within the category to move together.



- The difference-in-difference test(**DID**)
- we use a **tax reform** that is exogenous to firm fundamentals but affects dividend clientele as an identification strategy.
- We also use the unique dividend arrangement of the common shares of Citizens Utilities Company (**CU**) as a natural **experiment** to isolate the effects of fundamental risk on return comovement.
- we analyse **turnover comovement** for dividend initiators relative to a matched control sample.
- **robustness checks**  
We estimate the comovement in stock returns one, three, and five years after the initiations; share repurchase initiation events.
- To shed light on **the drivers** of dividend-clientele induced return comovement, we present evidence of significant changes in the institutional investor base and fund flows in response to changes in corporate dividend policies.

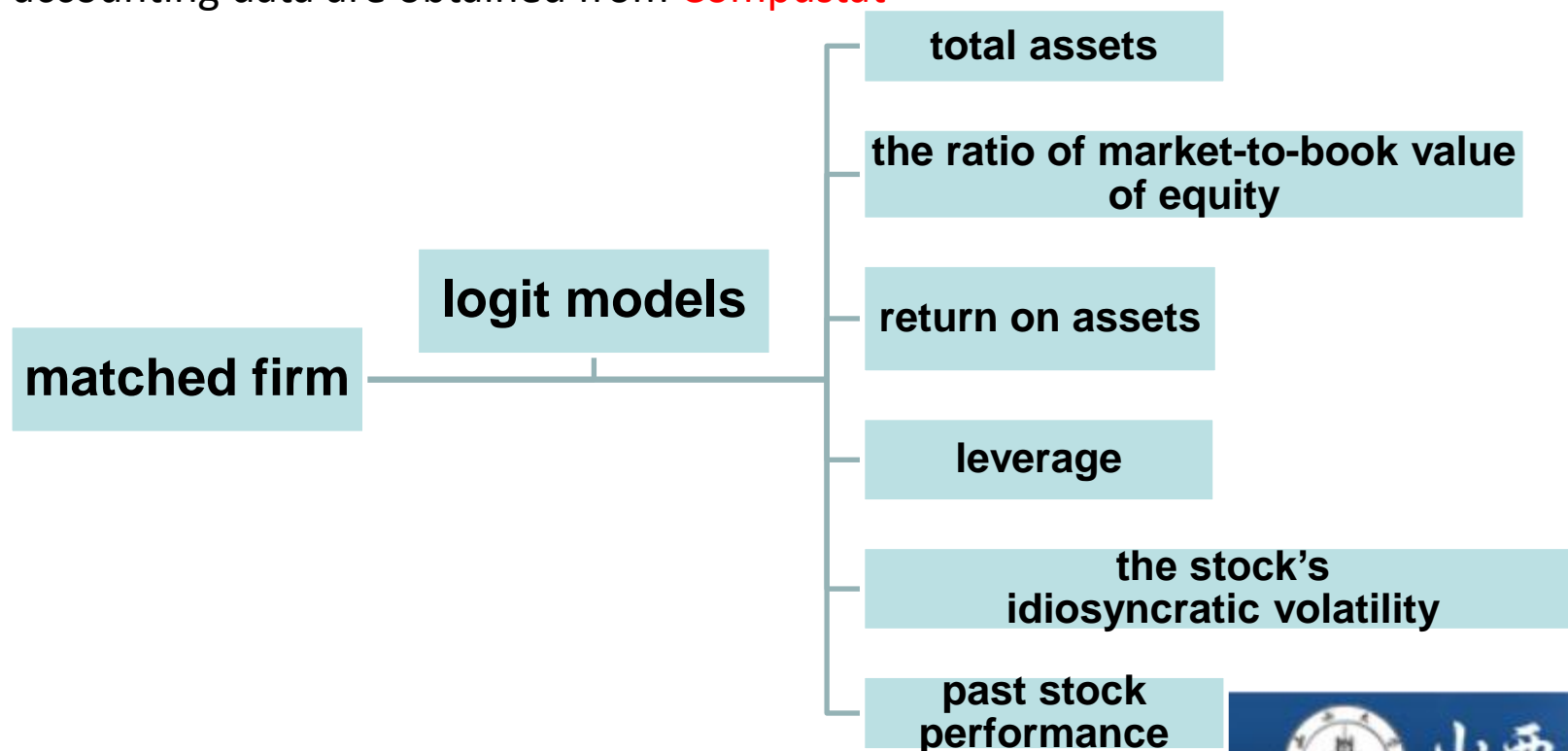


# 2.1 Data and methodology

Our sample firms include all **common stocks** with shares **codes of 10 and 11** trading on **NYSE/Amex and Nasdaq** from **1981 to 2012**.

Stock returns, trading volume, and other shares-related data come from Center for Research in Security Prices (**CRSP**) daily and monthly files

All accounting data are obtained from **Compustat**



$$Ret_{i,d} = \alpha_i + \beta_i * MKT_{D_{RES,d}} + \gamma_i * MKT_{ND_{RES,d}} + \delta * X_d + \varepsilon_{i,d}, \quad (1)$$

$$Ret_{c,d} = \alpha_c + \beta_c * MKT_{D_{RES,d}} + \gamma_c * MKT_{ND_{RES,d}} + \delta_c * X_d + \varepsilon_{c,d}, \quad (2)$$

$$\Delta \bar{\beta} = \sum_{i=1}^n (\beta_{i,Post} - \beta_{i,Pre}) / n, \quad (3a)$$

$$\Delta \bar{\gamma} = \sum_{i=1}^n (\gamma_{i,Post} - \gamma_{i,Pre}) / n. \quad (3b)$$

$$\Delta \bar{\beta}_c \quad \Delta \bar{\gamma}_c$$



## 2.2 Baseline results

Panel A: Firm characteristics

Characteristics	Dividend initiators		Control firms		Difference in mean [(a) – (b)]	t-value 不显著
	Mean (a)	Median	Mean (b)	Median		
log(Total asset)	5.507	5.406	5.501	5.512	0.006	0.09
Market/book ratio	2.101	0.146	2.196	0.202	-0.095	-1.35
Past 1-year stock return	0.222	0.113	0.23	0.071	-0.008	-0.38
Idiosyncratic volatility	0.030	0.026	0.031	0.027	-0.001	-1.94
Leverage	0.158	0.101	0.164	0.108	-0.006	-0.93
ROA	0.116	0.112	0.112	0.112	0.004	1.06

Panel B: Comovement of dividend initiators

1427 dividend initiators



Panel B: Comovement of dividend initiators

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i$	0.161	3.08	<u>0.382</u>	8.12	0.221	3.29
$\gamma_i$	<u>0.299</u>	12.67	0.223	9.99	-0.077	-2.62
$\beta_i - \gamma_i$	-0.138	-2.50	0.160	3.20	<u>0.298</u>	4.26

Panel C: Comovement of control firms drawn from non-dividend payers

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_c$	0.126	2.30	0.071	1.30	-0.054	不显著-0.78
$\gamma_c$	<u>0.320</u>	13.07	<u>0.347</u>	13.35	0.027	不显著0.85
$\beta_c - \gamma_c$	-0.194	-3.36	-0.275	-4.73	<u>-0.081</u>	-1.10

Panel D: Difference in comovement of dividend initiators and control firms

	PRE (Initiator - Control)		POST (Initiator - Control)		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i - \beta_c$	0.036	0.49	0.311	4.41	0.276	2.87
$\gamma_i - \gamma_c$	-0.020	-0.67	-0.124	-3.82	-0.104	-2.44
$(\beta_i - \beta_c) - (\gamma_i - \gamma_c)$	0.056	0.75	<u>0.435</u>	5.90	<u>0.379</u>	3.83



- three equal **sub-periods**: 1983 to 1992, 1993 to 2002, and 2003 to 2012.
- we replace daily returns with **weekly returns** in estimating the comovement coefficients.
- replace **the benchmark portfolio returns** in Eqs. (1) and (2) with the unadjusted or raw returns
- To rule out the effect of **outliers**, we consider removing from the sample the firms that have extreme estimates of  $\beta$  and  $\gamma$ , where we consider values above 2 or below -2 as outliers and delete them.
- The control firms belong to the **same industry** as the dividend initiator.

$\Delta \bar{\beta} - \Delta \bar{\gamma}$  结果一致



## 2.3 2003 tax cut evidence

*Panel A: Firm characteristics*

Characteristics	Dividend initiators		Control firms		Difference in mean [(a) – (b)]	t-value
	Mean (a)	Median	Mean (b)	Median		
log(Total asset)	6.215	6.025	6.277	6.239	-0.062	-0.29
Market/book ratio	1.860	1.424	1.897	1.471	-0.037	-0.24
Past 1-year stock return	0.004	-0.042	0.006	-0.016	-0.002	-0.07
Idiosyncratic volatility	0.025	0.024	0.025	0.024	0.000	-0.05
Leverage	0.126	0.073	0.136	0.132	-0.01	-0.60
ROA	0.121	0.119	0.123	0.11	-0.002	-0.13

*Panel B: Comovement of dividend initiators*



Panel B: Comovement of dividend initiators

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i$	0.029	0.25	<u>0.583</u>	4.60	0.554	3.63
$\gamma_i$	<u>0.295</u>	5.12	<u>0.312</u>	4.90	0.018	0.26
$\beta_i - \gamma_i$	-0.266	-2.30	0.271	2.15	<u>0.537</u>	3.52

Panel C: Comovement of control firms drawn from dividend payers

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_c$	<u>0.835</u>	6.89	<u>0.595</u>	4.72	-0.240	不显著-1.35
$\gamma_c$	0.360	6.98	0.110	1.82	-0.250	不显著-3.51
$\beta_c - \gamma_c$	0.475	3.68	0.485	3.92	<u>0.010</u>	0.06

Panel D: Difference in comovement of dividend initiators and control firms

	PRE (Initiator - Control)		POST (Initiator - Control)		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i - \beta_c$	-0.806	-4.61	-0.011	-0.07	0.795	3.37
$\gamma_i - \gamma_c$	-0.065	-0.84	0.203	2.56	0.268	2.71
$(\beta_i - \beta_c) - (\gamma_i - \gamma_c)$	-0.741	-4.15	-0.214	-1.31	<u>0.527</u>	2.42



## 2.4 a natural experiment

- Cash and stock classes of Citizens Utilities

$$R_{j,d} = \alpha_0 + \alpha_1 D_B + \beta_A MKT_{DRES,d} + \beta_{B-A} MKT_{DRES,d} * D_B + \delta X_d + \epsilon_{j,d},$$

$$R_{j,d} = \alpha_0 + \alpha_1 D_{Post} + \beta_{Pre} MKT_{DRES,d} + \beta_{Post-Pre} MKT_{DRES,d} * D_{Post} + \delta X_d + \delta_{Post} X_d * D_{Post} + \epsilon_{j,d}.$$

$$R_{j,d} = \alpha_0 + \alpha_1 D_{Post} + \alpha_2 D_B + \beta MKT_{DRES,d} + \beta_B MKT_{DRES,d} * D_B + \beta_{Post} MKT_{DRES,d} * D_{Post} + \beta_3 D_B * D_{Post} + \beta_{B-A,Post-Pre} MKT_{DRES,d} * D_{Post} * D_B + \delta X_d + \delta_{Post} X_d * D_{Post} + \epsilon_{j,d}.$$



Panel A: Summary statistics

	Pre-1990	Post-1990
$R_A$	0.111	0.071
$R_B$	0.122	0.070
$(R_B - R_A)$	-0.011	0.001
$t\text{-stat}(R_B - R_A)$	(-0.200)	(0.020)
$STD(R_A)$	1.533	1.490
$STD(R_B)$	1.682	1.500
$CORR(R_A, R_B)$	0.375	0.686



## Panel B: Regression analysis

	(1)	(2)	(3)	(4)	(5)
Dep. var.=	Daily stock return ( $R_{j,d}$ )				
Sample used=	Pre-1990, both series	Post-1990, both series	Both periods, series B	Both periods, series A	Both periods, both series
$MKT_{DRES} * D_B$	<u>3.824**</u> (2.24)	<u>-0.444</u> (-0.40)			3.824** (2.31)
$D_B$	-0.011 (-0.17)	0.001 (0.01)			-0.011 (-0.17)
$MKT_{DRES} * D_{Post}$			<u>-2.531*</u> (-1.74)	<u>1.737</u> (1.25)	1.737 (1.22)
$D_{Post}$			-0.051 (-0.77)	-0.058 (-0.93)	-0.060 (-0.95)
$MKT_{DRES} * D_B * D_{Post}$					<u>-4.268**</u> (-2.11)
$D_B * D_{Post}$					0.012 (0.13)
$MKT_{DRES}$	<u>-0.971</u> (-0.80)	<u>0.765</u> (0.97)	2.853** (2.39)	-0.971 (-0.85)	-0.971 (-0.83)
MKTRF	0.688*** (13.28)	0.504*** (8.17)	0.635*** (8.77)	0.741*** (10.74)	0.688*** (13.73)
SMB	0.475*** (7.17)	0.142* (1.67)	0.536*** (5.79)	0.414*** (4.69)	0.475*** (7.41)
HML	0.254** (2.24)	0.084 (0.85)	0.386** (2.44)	0.121 (0.80)	0.254** (2.32)
UMD	0.325*** (4.16)	0.118 (1.44)	0.096 (0.88)	0.553*** (5.32)	0.325*** (4.30)
$MKTRF * D_{Post}$			-0.181 (-1.55)	-0.187* (-1.67)	-0.184** (-2.27)
$SMB * D_{Post}$			-0.454*** (-2.88)	-0.212 (-1.42)	-0.333*** (-3.06)
$HML * D_{Post}$			-0.286 (-1.32)	-0.053 (-0.26)	-0.170 (-1.13)
$UMD * D_{Post}$			0.061 (0.37)	-0.475*** (-3.04)	-0.207* (-1.82)
Constant	0.098** (2.11)	0.038 (0.86)	0.090* (1.96)	0.094** (2.15)	0.098** (2.18)
Observations	2,528	2,528	2,528	2,528	5,056
R-square	0.12	0.04	0.06	0.12	0.08

## 2.5 Robustness tests

-----Alternative specifications: univariate regressions and unadjusted benchmark index returns

$$Ret_{i,d} = \alpha_i + \beta_i * MKT_{D_{RES},d} + \delta * X + \varepsilon_{i,d},$$

$$Ret_{i,d} = \alpha_i + \gamma_i * MKT_{ND_{RES},d} + \delta * X + \varepsilon_{i,d},$$

$$Ret_{c,d} = \alpha_c + \beta_c * MKT_{D_{RES},d} + \delta_c * X_d + \varepsilon_{c,d},$$

$$Ret_{c,d} = \alpha_c + \gamma_c * MKT_{ND_{RES},d} + \delta_c * X_d + \varepsilon_{c,d},$$

$$Ret_{i,d} = \alpha_i + \beta_i * MKT_{D_{RAW},d} + \delta * X + \varepsilon_{i,d},$$

$$Ret_{i,d} = \alpha_i + \gamma_i * MKT_{ND_{RAW},d} + \delta * X + \varepsilon_{i,d},$$

$$Ret_{c,d} = \alpha_c + \beta_c * MKT_{D_{RAW},d} + \delta_c * X_d + \varepsilon_{c,d},$$

$$Ret_{c,d} = \alpha_c + \gamma_c * MKT_{ND_{RAW},d} + \delta_c * X_d + \varepsilon_{c,d},$$



Panel A: Univariate regressions: comovement of dividend initiators

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i$	0.035	0.67	<u>0.316</u>	6.71	0.281	4.21
$\gamma_i$	<u>0.287</u>	12.11	0.189	8.44	-0.098	-3.35
$\beta_i - \gamma_i$	-0.252	-4.03	0.127	2.29	<u>0.379</u>	4.91

Panel B: Univariate regressions: comovement of control firms drawn from non-dividend payers

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_c$	-0.014	-0.25	-0.027	-0.48	-0.013	不显著 -0.18
$\gamma_c$	<u>0.306</u>	12.52	<u>0.334</u>	12.76	0.027	不显著 0.86
$\beta_c - \gamma_c$	-0.320	-4.94	-0.360	-5.58	<u>-0.040</u>	-0.49

Panel C: Univariate regressions: comovement of dividend initiators - comovement of control firms

	PRE (Initiator - Control)		POST (Initiator - Control)		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i - \beta_c$	0.049	0.67	0.343	4.81	0.294	3.05
$\gamma_i - \gamma_c$	-0.019	0.00	-0.144	-4.46	-0.125	-2.96
$(\beta_i - \beta_c) - (\gamma_i - \gamma_c)$	0.068	0.82	0.487	5.98	<u>0.419</u>	3.82



Panel D: Unadjusted index returns: comovement of dividend initiators

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i$	0.464	20.78	0.547	25.78	0.084	3.40
$\gamma_i$	0.444	27.62	0.361	23.23	-0.083	-4.26
$\beta_i - \gamma_i$	0.020	0.56	0.187	5.53	0.167	4.02

Panel E: Unadjusted index returns: comovement of control firms drawn from non-dividend payers

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_c$	0.449	18.78	0.444	20.18	-0.005	-0.17
$\gamma_c$	0.550	30.85	0.512	28.40	-0.038	-1.76
$\beta_c - \gamma_c$	-0.101	-2.62	-0.067	-1.84	0.034	0.74

Panel F: Unadjusted index returns: comovement of dividend initiators - comovement of control firms

	PRE (Initiator - Control)		POST (Initiator - Control)		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i - \beta_c$	0.015	0.53	0.103	3.77	0.088	2.53
$\gamma_i - \gamma_c$	-0.106	-5.17	-0.151	-6.90	-0.045	-1.57
$(\beta_i - \beta_c) - (\gamma_i - \gamma_c)$	0.121	2.69	0.254	5.61	0.133	2.23



# Does return comovement change when there are no dividend initiations?

Panel A: Return comovement of dividend initiators in non-initiating years

Panel A1: Regressions around year  $y + 1$

	PRE 1		POST 2		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i$	0.344	6.35	0.387	7.01	0.043 不显著	0.57
$\gamma_i$	0.226	9.36	0.255	10.55	0.029 不显著	0.94
$\beta_i - \gamma_i$	0.118	2.25	0.132	2.25	0.014	0.18

Panel A2: Regressions around year  $y + 3$

	PRE 2		POST 4		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i$	0.814	12.12	0.906	12.09	0.092 不显著	0.97
$\gamma_i$	0.296	10.85	0.328	10.69	0.032 不显著	0.87
$\beta_i - \gamma_i$	0.517	7.47	0.578	7.71	0.061	0.64

Panel A3: Regressions around year  $y + 5$

	PRE 5		POST 6		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i$	0.786	10.94	0.777	11.61	-0.009 不显著	0.10
$\gamma_i$	0.351	10.26	0.314	8.55	-0.037 不显著	0.86
$\beta_i - \gamma_i$	0.435	5.61	0.463	6.37	0.028	0.28



Does return comovement change around stock repurchase initiations?

*Panel B: Stock repurchase initiations and return comovement*

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_i$	0.381	23.24	0.356	22.55	-0.025	-1.18
$\gamma_i$	0.450	55.30	0.423	51.84	-0.027	-2.81
$\beta_i - \gamma_i$	-0.068	-3.77	-0.067	-3.72	0.002	0.08



## 2.6 Exposure of the dividend stocks to common factors

$$MKT_{j,d} = \alpha_j + b_{MKT,j}MKTRF_d + b_{SMB,j}SMB_d + b_{HML,j}HML_d + b_{UMD,j}UMD_d + MKT_{j,RES,d}$$

$$Ret_{i,d} = \alpha_i + \beta_i MKT_{DRES,d} + \gamma_i MKT_{NDRES,d} + \delta_{MKT} MKTRF_d + \delta_{SMB} SMB_d + \delta_{HML} HML_d + \delta_{UMD} UMD_d + \varepsilon_{i,d}$$

Panel A: Factor loadings of dividend payer portfolio and nonpayer portfolio

Factor loadings	Nonpayer portfolio		Dividend portfolio		Diff. in mean (Payer-Nonpayer)	t-value of Diff.
	Mean	Median	Mean	Median		
$b_{MKT}$	0.890	0.900	0.856	0.856	-0.034	-1.72
$b_{SMB}$	0.844	0.835	0.479	0.493	-0.365	-12.52
$b_{HML}$	0.113	0.076	0.309	0.297	0.196	5.02
$b_{UMD}$	-0.100	-0.100	-0.068	-0.074	0.032	1.18
$\alpha$	0.089	0.075	0.034	0.034	-0.055	4.34

Panel B: Factor loadings of dividend initiators before (PRE) and after (POST) dividend initiations

Factor loadings	PRE		POST		Diff. in mean (POST-RRE)	t-value of Diff.
	Mean	Median	Mean	Median		
$\beta_i$	0.161	0.221	0.382	0.456	0.221	3.29
$\gamma_i$	0.299	0.236	0.223	0.163	-0.077	-2.62
$\delta_{MKT}$	0.847	0.874	0.804	0.822	-0.043	-2.9
$\delta_{SMB}$	0.721	0.679	0.675	0.619	-0.047	-2.35
$\delta_{HML}$	0.238	0.225	0.232	0.226	-0.005	-0.22
$\delta_{UMD}$	-0.014	-0.029	-0.027	-0.019	-0.014	-0.69
$\alpha$	0.103	0.09	0.068	0.067	-0.036	-6.94



## 2.7 Comovement in turnover

$$\text{Turn}_{i,d} = \log \left( 1 + \frac{VO_{i,d}}{NSH_{i,y}} \right) - \frac{1}{N} \sum_{k=1}^{100} \log \left( 1 + \frac{VO_{i,d-k}}{NSH_{i,y}} \right), \quad (6)$$

$$\begin{aligned} \text{Turn}_{i,d} = & \alpha_i + \psi_i |R_{i,d-1}| + \nu_i |R_{m,d-1}| + \rho_i |R_{i,d}| + \pi_i |R_{m,d}| \\ & + \gamma_i * \sum_{\tau=1}^4 D_{\tau} + R\text{Turn}_{i,d}, \end{aligned} \quad (7)$$

$$\begin{aligned} R\text{Turn}_{i,d} = & \alpha_i + \sum_{\tau=-1}^1 \beta_{i,\tau}^T * R\text{Turn}_{D_{RES,d+\tau}} \\ & + \sum_{\tau=-1}^1 \gamma_{i,\tau}^T * R\text{Turn}_{ND_{RES,d+\tau}} + \varepsilon_{i,d}, \end{aligned} \quad (8)$$

$$\beta^T = \sum_{i \in \text{Initiators}} \beta_{i,-1}^T + \beta_{i,0}^T + \beta_{i,1}^T \quad (9)$$

$$\gamma^T = \sum_{i \in \text{Initiators}} \gamma_{i,-1}^T + \gamma_{i,0}^T + \gamma_{i,1}^T. \quad (10)$$



Panel A: Turnover comovement of dividend initiators

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta^T$	0.469	13.31	0.561	16.05	0.091	2.11
$\gamma^T$	0.563	16.02	0.441	12.25	-0.122	-2.62
$\beta^T - \gamma^T$	-0.094	-1.41	0.119	1.77	0.213	2.50

Panel B: Turnover comovement of control firms drawn from non-dividend payers

	PRE		POST		POST-PRE	
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta_C^T$	0.465	12.83	0.421	11.27	-0.044	-0.92
$\gamma_C^T$	0.676	18.39	0.727	18.85	0.051	1.03
$\beta^{TC} - \gamma_C^T$	-0.211	-3.07	-0.306	-4.24	-0.095	-1.03

Panel C: Turnover comovement of dividend initiators - turnover comovement of control firms

	PRE		POST		POST-PRE	
	(Initiator - Control)		(Initiator - Control)			
	Mean	t-value	Mean	t-value	Mean	t-value
$\beta^T - \beta_C^T$	0.004	0.08	0.140	2.84	0.136	2.08
$\gamma^T - \gamma_C^T$	-0.113	-2.28	-0.286	-5.45	-0.173	-2.52
$\beta^T - \beta_C^T - (\gamma^T - \gamma_C^T)$	0.117	1.27	0.425	4.42	0.308	2.43



# 3.Dividend clientele and return comovement evidence from mutual funds

## 3.1. Changes in mutual fund holdings

$$DivYld_{f,t} = \sum_{i \in \emptyset_{f,t}} w_{i,f,t} * DivYld_{i,t-1},$$

$$\Delta w_{f, t+1} = \sum_{i \in \text{Initiators in year } t} (w_{i,f, t+1} - w_{i,f, t}).$$



Panel A: Fund holdings of dividend initiators in PRE/POST initiation periods (full periods)

Fund dividend yield quintile	PRE ( $w_{f,t}$ )	POST ( $w_{f,t+1}$ )	POST-PRE ( $w_{f,t+1} - w_{f,t}$ )	t-value of POST-PRE
1(LOW_DIVYLD)	2.893	2.566	-0.327	-5.89
2	2.275	2.210	-0.065	-1.99
3	1.858	1.910	0.051	2.02
4	1.464	1.586	0.122	4.76
5 (HIGH_DIVYLD)	0.728	0.991	0.263	9.84
HIGH_DIVYLD - LOW_DIVYLD			0.590	9.58

Panel B: Fund holdings of dividend initiators in POST-PRE initiation periods (sub-periods)

Fund dividend yield quintile	1983-1992		1993-2002		2003-2012	
	$\Delta w_{f,t+1}$	t-value	$\Delta w_{f,t+1}$	t-value	$\Delta w_{f,t+1}$	t-value
1(LOW_DIVYLD)	0.024	0.22	-0.059	-0.93	-0.595	-6.36
2	0.092	1.24	0.102	3.08	-0.214	-3.86
3	0.269	4.29	0.170	6.97	-0.076	-1.74
4	0.184	3.27	0.213	7.53	0.049	1.12
5 (HIGH_DIVYLD)	0.228	4.31	0.176	6.27	0.336	7.36
HIGH_DIVYLD - LOW_DIVYLD	0.204	1.70	0.235	3.40	0.931	8.95



## 3.2. Fund flows and comovement

$$Flows_{f,m} = \frac{TNA_{f,m} - TNA_{f,m-1}(1 + R_{f,m}) - MergeTNA_{f,m}}{TNA_{f,m-1}}, \quad (12)$$

Two stock-level flow-induced trading measures:

$$FIT\_DP_{i,m} = \sum_{f \in \text{Dividend Prone Funds}} Flows_{f,m} * \frac{Shares_{f,i,m}}{\sum_{f \in \text{all funds}} Shares_{f,i,m}}, \quad (13)$$

$$FIT\_DA_{i,m} = \sum_{f \in \text{Dividend Averse Funds}} Flows_{f,t} * \frac{Shares_{f,i,m}}{\sum_{f \in \text{all funds}} Shares_{f,i,m}}, \quad (14)$$



Panel A: Dividend payers

	MODEL1	MODEL2	MODEL3	MODEL4	MODEL5	MODEL6
<i>FIT_DP</i>	0.217*** (3.73)	0.178*** (3.23)	0.180*** (2.87)	0.271*** (4.87)	0.217*** (4.93)	0.182*** (4.05)
<i>FIT_DA</i>	-0.128 (-0.86)	0.009 (0.11)	0.004 (0.06)	-0.103 (-0.54)	0.065 (0.58)	0.015 (0.13)
<i>R<sub>IND</sub></i>		0.449*** (23.32)			0.444*** (23.04)	
<i>R<sub>IND-DIV</sub></i>			0.355*** (30.41)			0.354*** (30.50)
<i>R<sub>IND-NONDIV</sub></i>			0.118*** (9.61)			0.117*** (9.85)
<i>LAGFIT_DP</i>				-0.255*** (-3.00)	-0.107 (-1.45)	-0.120* (-1.74)
<i>LAGFIT_DA</i>				0.013 (0.06)	-0.024 (-0.13)	-0.055 (-0.27)
<i>MKT</i>	0.852*** (38.44)	0.854*** (34.03)	0.853*** (33.39)	0.853*** (34.94)	0.855*** (31.63)	0.857*** (31.78)
<i>SMB</i>	0.427*** (15.73)	0.429*** (16.01)	0.429*** (15.57)	0.429*** (15.28)	0.429*** (15.75)	0.432*** (15.07)
<i>HML</i>	0.389*** (6.03)	0.397*** (6.05)	0.397*** (5.89)	0.397*** (6.02)	0.404*** (6.18)	0.408*** (6.20)
<i>UMD</i>	-0.076*** (-3.03)	-0.076*** (-3.42)	-0.076*** (-3.30)	-0.076** (-2.83)	-0.078*** (-3.31)	-0.078*** (-3.12)
Intercept	0.001 (0.82)	0.001 (1.02)	0.001 (1.01)	0.001 (1.05)	0.001 (1.06)	0.001 (1.04)
Adj_R <sup>2</sup>	0.447	0.514	0.552	0.519	0.581	0.618



Panel B: Nonpayers

VAR	MODEL1	MODEL2	MODEL3	MODEL4	MODEL5	MODEL6
<i>FIT_DP</i>	0.146 (0.24)	-0.097 (-0.14)	-0.736 (-0.87)	0.232 (0.24)	0.287 (0.26)	2.171 (1.45)
<i>FIT_DA</i>	0.484*** (8.70)	0.445*** (5.38)	0.468*** (5.14)	0.357** (2.81)	0.480*** (2.98)	0.662*** (8.01)
<i>R_IND</i>		0.403*** (13.21)			0.396*** (8.52)	
<i>R_IND-DIV</i>			0.140*** (5.80)			0.089 (1.37)
<i>R_IND-NONDIV</i>			0.313*** (20.07)			0.277*** (13.77)
<i>LAGFIT_DP</i>				-1.683** (-2.41)	-1.155 (-1.25)	-2.523 (-1.53)
<i>LAGFIT_DA</i>				-0.460** (-2.67)	-0.432* (-1.90)	-0.326 (-1.72)
Mkt Ret	1.062*** (35.71)	1.055*** (39.99)	1.059*** (35.62)	1.093*** (58.65)	1.074*** (49.86)	1.141*** (43.85)
SMB	0.926*** (26.66)	0.921*** (24.71)	0.930*** (28.32)	0.941*** (18.69)	0.915*** (18.26)	0.931*** (16.74)
HML	0.023 (0.69)	0.036 (0.97)	0.005 (0.14)	0.098** (2.57)	0.071 (1.68)	0.120** (2.23)
UMD	-0.167*** (-4.25)	-0.166*** (-4.47)	-0.156*** (-3.76)	-0.170*** (-5.93)	-0.161*** (-4.44)	-0.256*** (-9.43)
Intercept	-0.001 (-0.60)	-0.001 (-0.74)	-0.001 (-0.87)	-0.001 (-0.70)	-0.001 (-0.90)	0.000 (0.14)
R-square	0.646	0.722	0.793	0.785	0.860	0.930



### 3.3 Mutual fund flows and dividend premium

$$Flow_{f,m+1} = \alpha + b_1 DivPrem_m * D_{f,m} + b_2 DivPrem_m + b_3 D_{f,m} + \delta Control_{f,m} + FEs + \varepsilon_{f,m}$$

Dep. var.=	Monthly fund flows (m + 1)			
Div.prem.*D(HIGH_DIVYLD)	<u>0.034***</u> (7.35)	<u>0.038***</u> (8.15)		<u>0.032***</u> (6.75)
D(HIGH_DIVYLD)	0.004*** (4.93)	0.001 (0.97)		0.001 (0.64)
Div.prem.*D(LOW_DIVYLD)			<u>-0.036***</u> (-6.14)	<u>-0.028***</u> (-4.68)
D(LOW_DIVYLD)			0.000 (0.26)	0.001 (0.71)
Dividend premium	0.007** (1.97)	-0.006* (-1.65)	0.008** (2.32)	0.000 (0.04)
log(TNA)	-0.002*** (-6.52)	-0.013*** (-11.92)	-0.013*** (-11.94)	-0.013*** (-11.97)
Fund return	0.082*** (18.45)	0.079*** (18.13)	0.079*** (18.01)	0.079*** (18.00)
log(Age)	-0.011*** (-24.02)	-0.028*** (-15.55)	-0.028*** (-15.46)	-0.028*** (-15.46)
Expenses	-0.832*** (-10.37)	-0.931*** (-4.50)	-0.924*** (-4.47)	-0.936*** (-4.53)
Total load	0.068*** (4.83)	0.061 (1.48)	0.060 (1.45)	0.060 (1.47)
Turnover	0.496*** (9.47)	0.284*** (4.16)	0.285*** (4.17)	0.284*** (4.15)
Flow style	0.418*** (9.91)	0.417*** (9.63)	0.418*** (9.64)	0.417*** (9.62)
Constant	0.041*** (20.17)	0.122*** (21.92)	0.122*** (21.94)	0.122*** (21.86)
Year fixed effects	Y	Y	Y	Y
Fund fixed effects	N	Y	Y	Y
Observations	457,518	457,518	457,518	457,518
R-square	0.02	0.02	0.02	0.02



## 4. Conclusion

- We provide **new evidence** in support of **the proposition that the trading activities of dividend clienteles induce an extra factor in dividend payers**. The dividend clientele may be based on investor tax status, income and risk preferences, investor sentiment towards dividends, or other cognitive biases. At the margin, initiations of dividend payments affect the corporation's investor clientele, attracting investors with a preference for dividend stocks.
- we demonstrate that mutual funds that have a higher (lower) propensity to hold dividend-paying stocks receive more inflows when the investor preference for dividends is stronger (weaker).
- Overall, our results are consistent with the view that dividend is a salient characteristic that investors use to trade as a category, and investors trading in and out of this category induce comovement in returns.



THANKS !

