

# **Institutional Investors and Corporate Governance: The Incentive to Be Engaged**

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## 机构投资者迅速发展

机构投资者是否有动机参与公司治理

从机构角度看，大机构更有动机参与公司治理

从企业角度看，大公司能提供更多的激励，使机构参与治理

同一行业的持股是否使机构投资者有动机影响行业竞争

在最集中的行业中，机构投资者会投资行业中其他竞争对手，但投资比例小，获得激励小

投资者参与动机以机构投资者激励衡量，有直接和间接激励构成。

$$\text{Direct incentives}_{i,t} = p * AUM_t * w_{i,t},$$

$$\text{Direct rival incentives}_{i,t} = p * AUM_t * \sum_j w_{j,t},$$

$$\text{Flow incentives}_{i,t} = p * AUM_t * \beta * (w_{i,t} - v_{i,t}).$$

$$\text{Flow rival incentives}_{i,t} = p * AUM_t * \beta * \sum_j (w_{j,t} - v_{j,t}),$$



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## Publications:

[1]"Why do accruals predict earnings? " (with R Resutek). Journal of Accounting and Economics, 67, 336-356,2019.

[2]"The ownership structure of U.S. corporations" (with K Lewellen) ,2022.

[3]"The autocorrelation of stock and bond returns, 1960-2019 " 2022.





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## Publications:

[1] Hospital financial health and clinical choices: evidence from the financial crisis. 2020, With Manuel Adelino and W. Ben McCartney, *Management Science*, Vol. 68(03), 2022, pp. 2098-2119

[2] Does common ownership really increase firm coordination? 2020. With Michelle Lowry, *Journal of Financial Economics*, Vol. 141(01), 2021, pp. 322-344

[3] Performance-induced CEO turnover. 2020. With Dirk Jenter, *Review of Financial Studies*, Vol. 34, 2021, pp. 569-617 (lead article)



**1. Framework**

**2. Data**

**3. Flow-to-Performance Sensitivity**

**4. Institutions' Incentives**

**5. Rival Incentives**

**6. Conclusion**



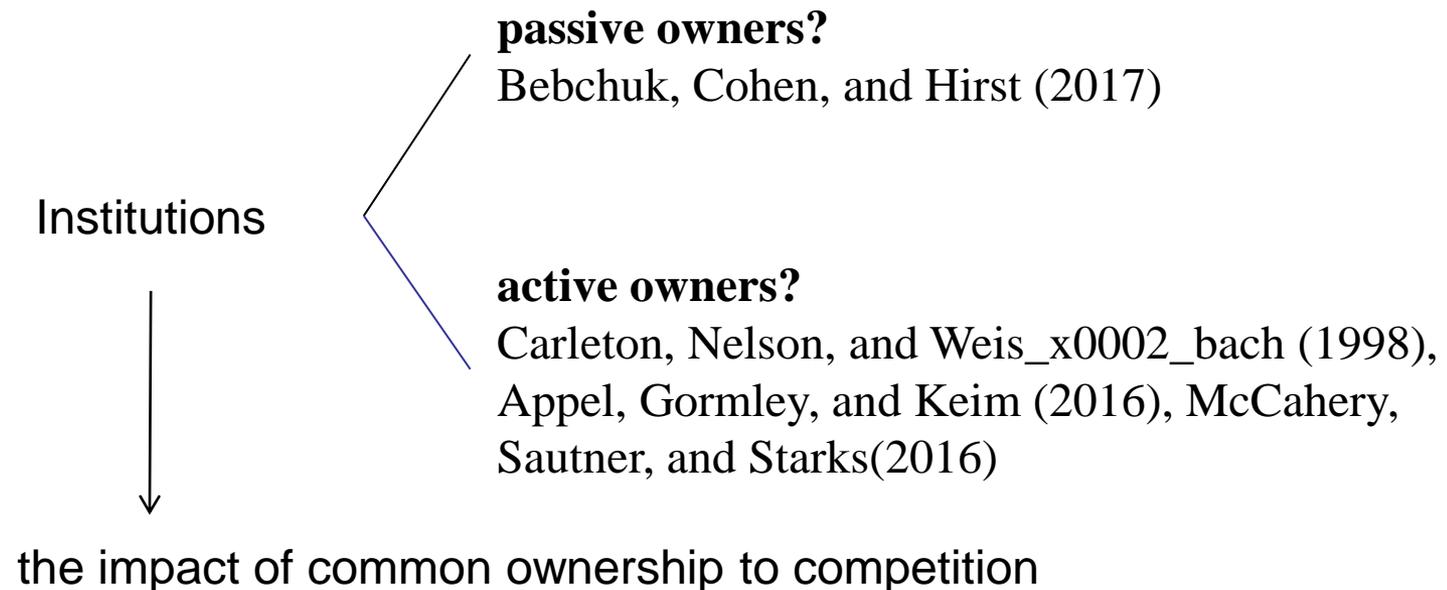
# Abstract

- This paper studies institutional investors' incentives to be engaged shareholders.
- In 2017, the average institution gains an extra \$129,000 in annual management fees if a stockholding increases 1% in value, considering both **the direct effect on assets under management** and **the indirect effect on subsequent fund flows**. The estimates range from \$19,600 for investments in small firms to \$307,600 for investments in large firms.
- Institutional shareholders in one firm often gain when the firm's competitors do well, by virtue of institutions' holdings in those firms, but **the impact of common ownership** is modest in the most concentrated industries.



# Introduction

Institutional ownership of publicly traded U.S. firms rose from 32% to 73% of the overall market from 1980 to 2017, according to 13F filings with the SEC, and the 100 largest institutions now own more than 50% of all equity.



# 1. Framework



Our approach focuses on the additional fees an institution earns if a stock holding increases in value, recognizing both the direct impact on AUM when the stock goes up and the indirect impact from performance-related fund flows.

$$AUM_{t+1} = AUM_t * \left( 1 + \sum_{i=1}^N w_{i,t} R_{i,t+1} \right) + Flow_{t+1}. \quad (1)$$

$R_{i,t+1}$  is stock  $i$ 's return in period  $t + 1$ ,  $w_{i,t}$  is the stock's weight in the institution's portfolio at the start of  $t + 1$ , and  $Flow_{t+1}$  is the net

a two-year-old fund grows 45 percentage points faster, 55% versus 10%, if its excess return in the prior year increases from 0% to 10%, implying a flow-to-performance sensitivity of 4.5.

$$Flow_{t+1} = AUM_t * \left[ \alpha + \beta * \left( \sum_{i=1}^N w_{i,t} R_{i,t+1} - \sum_{i=1}^N v_{i,t} R_{i,t+1} \right) + e_{t+1} \right], \quad (2)$$

$\beta$  is the flow-to-performance sensitivity and  $v_{i,t}$  is the weight of stock  $i$  in the benchmark portfolio.



Equations (3) and (4) express incentives as the dollar increase in management fees of a 100% increase in stock  $i$ 's value.

$$\text{Direct incentives}_{i,t} = p * AUM_t * w_{i,t}, \quad (3)$$

$$\text{Flow incentives}_{i,t} = p * AUM_t * \beta * (w_{i,t} - v_{i,t}). \quad (4)$$

$$\text{Direct rival incentives}_{i,t} = p * AUM_t * \sum_j w_{j,t}, \quad (5)$$

$$\text{Flow rival incentives}_{i,t} = p * AUM_t * \beta * \sum_j (w_{j,t} - v_{j,t}), \quad (6)$$

In equations (5) and (6),  $j$  indexes other firms in the industry ( $j \neq i$ ). Rival incentives are higher if the institution invests more within the industry and depend in part on the holdings of competing institutions ( $v_j$ ). **Total rival incentives** (the sum of equations (5) and (6)) **can be negative** if an institution has modest cross-holdings within the industry if an action benefits other institutional shareholders of rival firms more.



## 2. Data



- Our main data come from Thomson Reuters' database of 13F filings with the SEC.

Thomson Reuters classifies institutions as (i) banks, (ii) insurance companies, (iii) investment companies, (iv) investment advisors, or (v) other. We combine the last three categories into a single group—"Type 3" institutions—which includes mutual fund companies, hedge funds, pensions, endowments, and other asset managers.

- Price and share data come from the Center for Research in Security Prices (CRSP).



# Table I

## Descriptive Statistics, 1980 to 2017

Period	Avg	Med	Std	p1	p25	p75	p99	N
Panel A: Assets under Management (\$ Millions), by Institution								
1980 to 1984	2,395	855	3,947	35	401	2,444	18,504	540
1985 to 1989	2,907	831	6,201	20	354	2,568	30,966	785
1990 to 1994	3,225	671	8,912	16	272	2,274	39,172	1,006
1995 to 1999	5,743	689	23,911	27	284	2,484	95,765	1,342
2000 to 2004	5,948	491	31,184	18	201	1,874	110,373	1,815
2005 to 2009	5,113	380	31,614	10	149	1,496	83,621	2,468
2010 to 2014	4,745	325	35,165	5	128	1,344	71,078	2,945
2015 to 2017	5,292	302	47,913	4	113	1,159	75,986	3,648
Panel B: Number of Firms Held, by Institution								
1980 to 1984	192	128	193	13	76	233	920	540
1985 to 1989	225	125	328	10	66	256	1,584	785
1990 to 1994	242	114	403	11	64	253	1,933	1,006
1995 to 1999	269	112	488	9	62	244	2,476	1,342
2000 to 2004	260	96	509	7	53	208	2,884	1,815
2005 to 2009	228	81	470	6	40	183	2,716	2,468
2010 to 2014	212	76	425	5	35	176	2,522	2,945
2015 to 2017	212	76	429	5	32	175	2,576	3,648



## Table I—Continued

Period	Avg	Med	Std	p1	p25	p75	p99	N
Panel C: Number of Institutional Shareholders, by Firm								
1980 to 1984	19	3	43	0	0	14	232	5,259
1985 to 1989	28	8	59	0	2	25	319	6,226
1990 to 1994	39	13	73	0	4	37	388	6,281
1995 to 1999	48	17	88	0	6	52	455	7,504
2000 to 2004	81	37	126	0	10	100	661	5,933
2005 to 2009	113	66	155	1	20	140	811	4,956
2010 to 2014	148	89	200	1	30	175	1,038	4,225
2015 to 2017	186	110	253	4	40	215	1,384	4,175
Panel D: Institutional Ownership (Fraction of Shares), by Firm								
1980 to 1984	0.12	0.05	0.16	0.00	0.00	0.19	0.59	5,259
1985 to 1989	0.17	0.11	0.19	0.00	0.01	0.29	0.70	6,226
1990 to 1994	0.23	0.16	0.22	0.00	0.04	0.38	0.79	6,281
1995 to 1999	0.28	0.22	0.25	0.00	0.06	0.47	0.89	7,504
2000 to 2004	0.36	0.31	0.29	0.00	0.10	0.60	0.97	5,933
2005 to 2009	0.50	0.51	0.32	0.00	0.21	0.79	1.00	4,956
2010 to 2014	0.54	0.59	0.32	0.00	0.24	0.84	1.00	4,225
2015 to 2017	0.58	0.65	0.32	0.00	0.30	0.87	1.00	4,175



# 3. Flow-to-Performance Sensitivity



## A. Background

Chevalier and Ellison (1997) estimate that a two-year-old fund grows 45 percentage points faster, 55% versus 10%, if its excess return in the prior year increases from 0% to 10%, implying a flow-to-performance sensitivity of 4.5.

A few recent studies explore growth within fund families, but we are not aware of any study that directly estimates flow-to-performance sensitivities at the family level.



## B. Flow-to-Performance Estimates

$$Net\ Inflow_{it} = \frac{AUM_{it} - AUM_{i,t-1} (1 + R_{it})}{AUM_{i,t-1}}, \quad (7)$$

$R_{it}$  is inferred from the institution's holdings at the end of quarter  $t - 1$ .

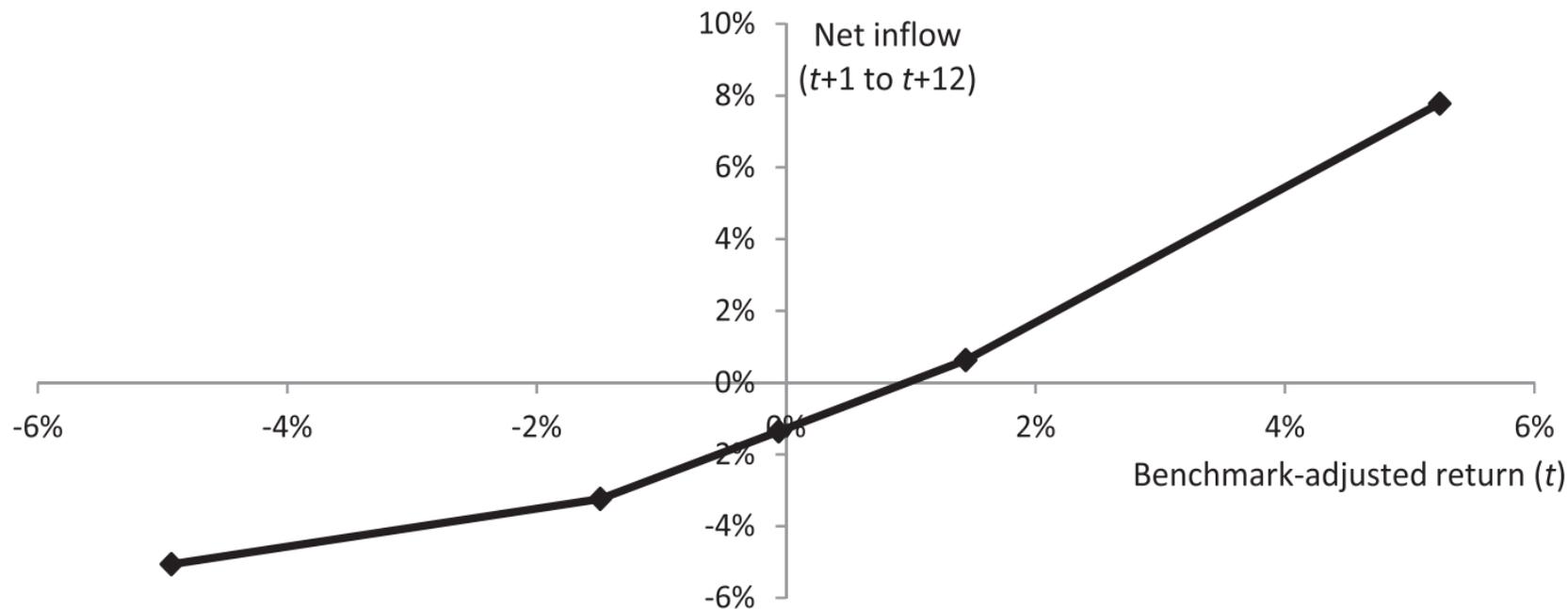
The predictor variable, an institution's benchmark-adjusted return, equals  $R_{it}$  minus the value-weighted return of all institutions of the same type, capturing the idea that investors are more likely to evaluate an institution's performance relative to similar institutions .



**Table II**  
**Flow-to-Performance Sensitivity, 1980 to 2017**

	Horizon (Quarter)											
	$t+1$	$t+2$	$t+3$	$t+4$	$t+5$	$t+6$	$t+7$	$t+8$	$t+9$	$t+10$	$t+11$	$t+12$
Panel A: Simple Regressions												
Slope	0.10	0.19	0.21	0.18	0.14	0.12	0.11	0.09	0.05	0.05	0.06	0.08
$t$	4.00	7.37	7.63	6.94	7.77	4.26	5.41	5.18	2.08	2.54	2.32	3.75
Cumulative	0.10	0.29	0.50	0.67	0.81	0.93	1.04	1.13	1.18	1.23	1.29	1.37
$t$	4.00	6.80	8.47	9.38	10.20	9.58	9.56	9.50	9.14	8.68	8.34	8.52
Panel B: Combined Regression												
Slope	0.04	0.20	0.19	0.23	0.14	0.16	0.11	0.05	0.05	0.03	0.09	0.09
$t$	1.81	6.43	7.14	8.20	5.95	5.94	4.33	2.00	1.84	1.36	2.59	3.76
Cumulative	0.04	0.24	0.43	0.66	0.81	0.97	1.08	1.13	1.18	1.21	1.30	1.39
$t$	1.81	5.95	8.51	9.81	11.82	12.47	12.14	12.26	11.59	11.89	11.97	12.01





**Figure 1. Flow-to-performance sensitivity, 1980 to 2017.** The figure plots the cumulative net inflow from quarter  $t + 1$  to  $t + 12$  against the quarterly benchmark-adjusted return in quarter  $t$  for institutions sorted into relative-return quintiles. Net inflow is the quarterly growth rate of assets under management minus the institution's quarterly return. Benchmark-adjusted return is an institution's return minus the aggregate return of institutions of the same type. Institutional ownership comes from Thomson Reuters and WRDS, while stock prices and returns come from CRSP.



## **Flow-to-performance sensitivities do not seem to depend on an institution's size.**

- In particular, our estimates are similar if the regressions include only institutions that make up the top 75% of total AUM (cumulative slope of 1.50) or only the 100 largest (cumulative slope of 1.61) or 50 largest (cumulative slope of 1.45) institutions each quarter.
- In all three cases, the flow-to-performance sensitivity is not significantly different for institutions above and below the cutoff, with t-statistics of 0.30 to 1.65 on interaction terms added to full-sample regression.



## 4. Institutions' Incentives



Our estimates of flow incentives are based on the flow-to-performance sensitivity of 1.39 in Panel B of Table II.

Percent incentives depend on a firm's portfolio weight, while dollar incentives also depend on the level of management fees, which are not observable.

<b>groups</b>	quartile 1	quartile 2	quartile 3	quartile 4	large index funds
approch 1	an annual management fee equal to 0.5% of AUM for all institutions				
approch 2	0.70% ~0.78%	0.61% ~0.69%	0.47% ~0.64%	0.36% ~0.49%	0.11% ~0.24%



# A. Institution-Level Incentives

Table III

Institutions' Incentives, 2015 to 2017

	Mean	Med	Std	p1	p25	p75	p99
Panel A: Institutions Are Equal Weighted							
AUM (\$ million)	5,292	302	47,912	4	113	1,159	75,986
Firms	212			5	32	175	2,576
%Incentives_Direct	0.0571			0.037	0.0175	0.0673	0.3206
%Incentives_Flow	0.0745	0.0387	0.0925	0.0014	0.0189	0.0893	0.4419
%Incentives_Total	0.1316	0.0706	0.1586	0.0056	0.0364	0.1565	0.7631
\$Incentives_Direct 1	4.2	0.5	21.3	0.0	0.2	2.0	62.1
\$Incentives_Flow 1	4.4	0.6	23.0	0.0	0.2	2.3	67.2
\$Incentives_Total 1	8.6	1.2	43.0	0.0	0.4	4.3	127.8
\$Incentives_Direct 2	5.2	0.8	21.3	0.0	0.3	2.9	74.5
\$Incentives_Flow 2	5.9	0.9	26.8	0.0	0.3	3.3	87.5
\$Incentives_Total 2	11.0	1.7	47.7	0.1	0.6	6.3	162.5

1.39 × (5.71% - 0.35%)



# A. Institution-Level Incentives

Table III—Continued

	Mean	Med	Std	p1	p25	p75	p99
Panel B: Institutions Are Value Weighted							
AUM (\$ million)	440,450	145,382	571,050	266	23,432	715,484	1,637,891
Firms	1,917	1,391	1,404	4	601	3,236	3,831
%Incentives_Direct	0.0159	0.0081	0.0304	0.0021	0.0049	0.0115	0.1604
%Incentives_Flow	0.0168	0.0028	0.0426	-0.0001	0.0010	0.0110	0.2193
%Incentives_Total	0.0327	0.0087	0.0729	0.0022	0.0059	0.0225	0.3789
\$Incentives_Direct 1	130.8	56.4	150.4	0.3	13.3	271.0	379.0
\$Incentives_Flow 1	53.6	24.7	102.7	-0.5	5.6	66.6	300.4
\$Incentives_Total 1	184.3	81.2	229.5	0.6	20.2	345.4	629.9
\$Incentives_Direct 2	70.9	52.3	89.2	0.5	15.7	92.5	273.3
\$Incentives_Flow 2	41.6	14.1	103.6	-0.5	6.8	35.6	367.2
\$Incentives_Total 2	112.6	70.5	186.9	0.9	24.8	150.2	640.6

1.39 × (1.59% - 0.39%)



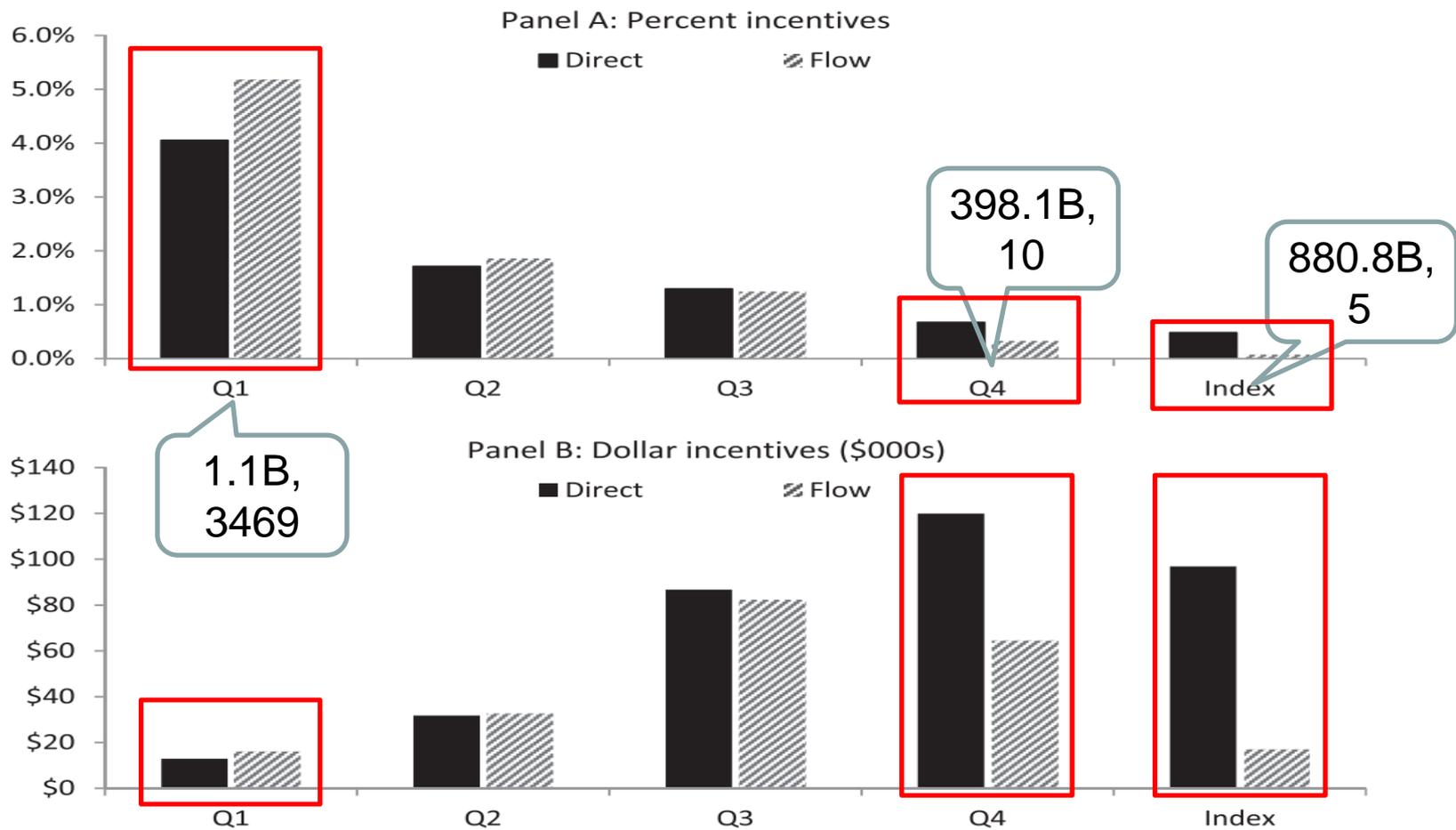


Figure 2. Institutions' incentives, 2015 to 2017.



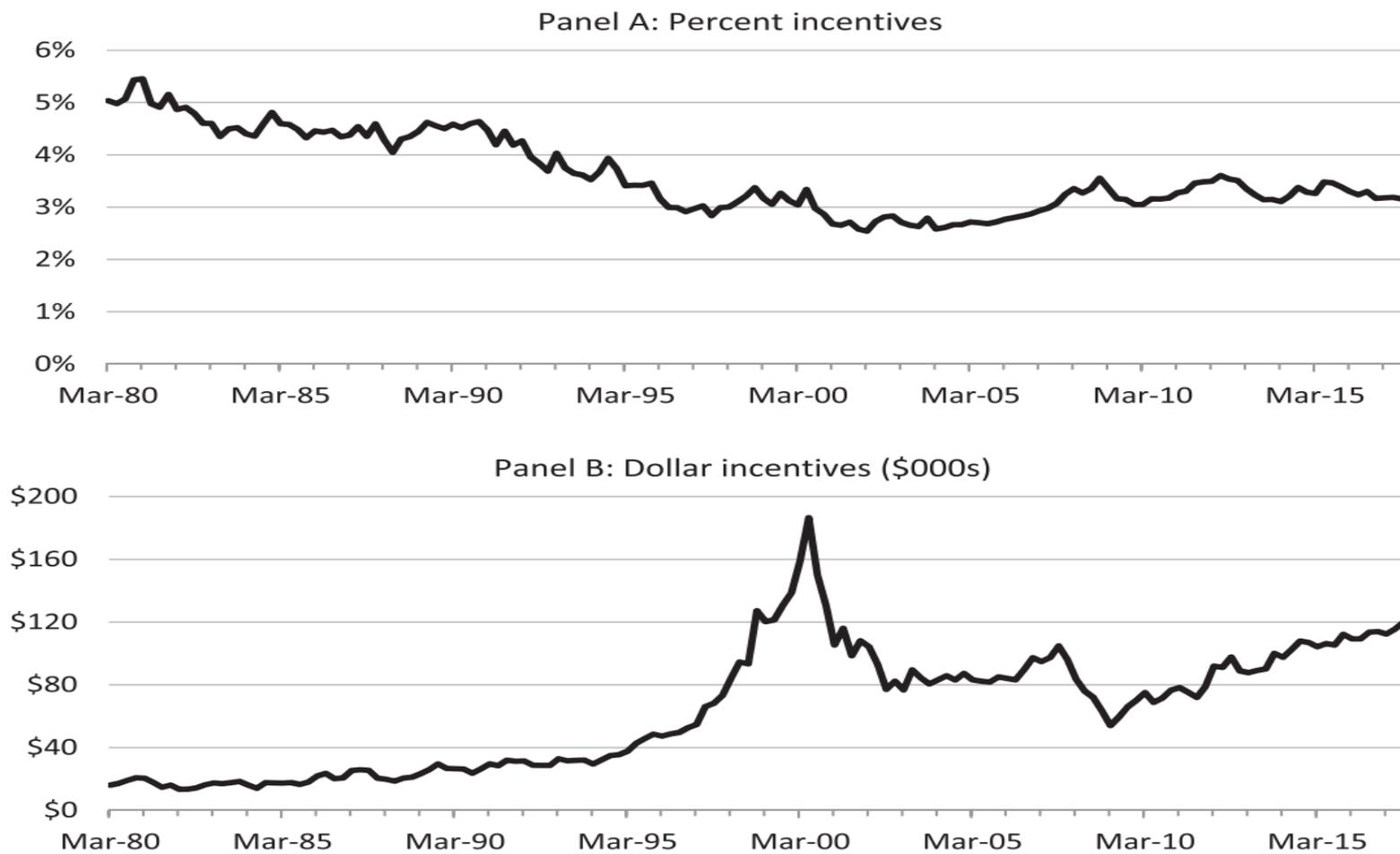


Figure 3. Institutions' incentives, 1980 to 2017.



## B. Activist Investors

“Activists” file Schedule 13D, explicitly indicate an intention to influence the firm. Our sample of 13D filings comes from WhaleWisdom, a data provider that collects and aggregates SEC filings.

Since many activists are private equity or hedge funds, we also report incentives assuming that institutions earn a 1.3% management fee and 20% performance fee.

	Mean	Med	Std	p1	p25	p75	p99
Panel A: 13D Holdings Are Equal Weighted							
AUM (\$ million)	6,225	1,702	15,906	56	399	9,275	36,436
Firms	161	29	332	5	15	108	756
13D holding (\$ million)	<u>175</u>	45	385	1	14	<u>145</u>	1,937
%Incentives_Direct	<u>0.0751</u>	0.0400	0.0914	0.0003	0.0085	0.1098	0.3969
%Incentives_Flow	0.1043	0.0555	0.1270	0.0004	0.0118	0.1525	0.5517
%Incentives_Total	0.1794	0.0955	0.2185	0.0007	0.0204	0.2623	0.9487
\$Incentives_Direct 1	8.7	2.2	19.2	0.1	0.7	7.3	96.9
\$Incentives_Flow 1	12.1	3.1	26.5	0.1	1.0	10.1	134.6
\$Incentives_Total 1	20.8	5.4	45.8	0.2	1.7	17.3	231.5
\$Incentives_Direct 2	12.3	3.2	26.7	0.1	1.0	10.3	136.3
\$Incentives_Flow 2	17.1	4.5	36.8	0.1	1.4	14.2	188.2
\$Incentives_Total 2	29.4	7.7	63.5	0.2	2.4	24.6	324.5
\$Incentives_Total 3	54.2	14.0	119.0	0.4	4.4	<b>45.0</b>	601.9
\$Performance fee (ann.)	35.0	9.0	77.0	0.3	2.8	<b>29.0</b>	387.5
\$Combined	89.2	23.0	196.0	0.7	7.2	<b>74.0</b>	989.4
Panel B: 13D Holdings Are Value Weighted							
AUM (\$ million)	12,106	9,275	24,063	183	3,211	13,467	169,300
Firms	131	21	466	6	13	41	3,126
13D holding (\$ million)	1,022	722	1,021	14	235	1,439	4,362
%Incentives_Direct	<u>0.1344</u>	0.1091	0.1033	0.0020	0.0517	0.2089	0.4384
%Incentives_Flow	0.1862	0.1514	0.1434	0.0027	0.0718	0.2893	0.6091
%Incentives_Total	0.3206	0.2605	0.2468	0.0047	0.1235	0.4983	1.0475
\$Incentives_Direct 1	51.1	36.1	51.0	0.7	11.7	71.9	218.1
\$Incentives_Flow 1	70.5	49.9	69.9	1.0	16.2	99.1	302.4
\$Incentives_Total 1	121.6	86.0	121.0	1.7	28.0	171.1	520.5
\$Incentives_Direct 2	<b>70.9</b>	51.2	69.2	1.0	16.7	99.2	305.7
\$Incentives_Flow 2	<b>97.8</b>	71.1	95.1	1.4	23.2	137.6	423.9
\$Incentives_Total 2	<b>168.7</b>	122.3	164.3	2.4	39.9	236.8	729.5
\$Incentives_Total 3	<b>316.0</b>	223.6	314.5	4.3	72.7	444.8	1,353.3
\$Performance fee (ann.)	<b>204.3</b>	144.3	204.1	2.8	46.9	287.8	872.4
\$Combined	<b>520.4</b>	368.0	518.7	7.1	119.7	732.6	2,225.7



## C. Firm-Level Estimates

Table V  
Institutions' Incentives by  
Firm, 2015 to 2017

	Mean	Med	Std	p1	p25	p75	p99
Panel A: Firms Are Equal Weighted							
Size (\$ million)	6,425	672	27,236	7	139	2,971	106,020
Institutional investors	186	111	254	4	41	215	1,386
Institutional ownership	<u>0.58</u>	0.65	0.32	0.00	0.30	0.87	1.00
%Incentives_Direct	<u>0.0115</u>	0.0050	0.0224	0.0000	0.0021	0.0116	0.1115
%Incentives_Flow	<u>0.0157</u>	0.0066	0.0311	0.0000	0.0028	0.0154	0.1550
%Incentives_Total	<u>0.0272</u>	0.0116	0.0535	0.0000	0.0049	0.0270	0.2665
\$Incentives_Direct 1	9.7	1.5	33.3	0.0	0.3	6.0	148.0
\$Incentives_Flow 1	6.1	1.4	21.0	0.0	0.3	4.5	80.3
\$Incentives_Total 1	15.8	2.8	52.0	0.0	0.6	10.6	222.2
\$Incentives_Direct 2	6.8	1.4	21.3	0.0	0.3	4.8	92.1
\$Incentives_Flow 2	6.2	1.5	21.2	0.0	0.4	4.9	70.1
\$Incentives_Total 2	<u>13.0</u>	2.9	41.5	0.0	0.7	9.8	160.1
Panel B: Firms Are Value Weighted							
Size (\$ million)	121,932	54,014	158,741	452	14,738	169,303	695,507
Institutional investors	1,026	907	662	64	446	1,606	2,335
Institutional ownership	<u>0.72</u>	0.74	0.18	0.12	0.63	0.84	1.00
%Incentives_Direct	<u>0.0163</u>	0.0119	0.0165	0.0015	0.0070	0.0203	0.0789
%Incentives_Flow	<u>0.0170</u>	0.0111	0.0218	0.0019	0.0071	0.0183	0.1075
%Incentives_Total	<u>0.0333</u>	0.0237	0.0378	0.0034	0.0147	0.0403	0.1864
\$Incentives_Direct 1	139.9	72.0	164.3	0.7	22.6	209.4	690.8
\$Incentives_Flow 1	57.4	29.7	74.6	0.6	11.6	79.2	251.8
\$Incentives_Total 1	197.3	107.3	226.6	1.3	36.7	301.9	904.9
\$Incentives_Direct 2	74.6	45.4	85.0	0.7	15.7	105.3	318.2
\$Incentives_Flow 2	43.3	27.2	66.4	0.8	11.9	52.1	246.3
\$Incentives_Total 2	<u>117.9</u>	75.4	143.0	1.5	28.5	<u>162.1</u>	<u>533.8</u>



## C. Firm-Level Estimates

Table VI  
Incentives for the Largest  
Institutional Shareholders in  
Each Firm, 2015 to 2017

The largest institutions are  
with the largest stakes, not  
with the largest AUM.

	Mean	Med	Std	p1	p25	p75	p99
Panel A: Firms Are Equal Weighted							
IO of five largest institutions	0.28	0.29	0.14	0.00	0.19	0.36	0.66
%Incentives_Direct	0.0146	0.0037	0.0317	0.0000	0.0009	0.0130	0.1660
%Incentives_Flow	0.0199	0.0048	0.0440	0.0000	0.0010	0.0176	0.2305
%Incentives_Total	0.0345	0.0085	0.0757	0.0000	0.0020	0.0305	0.3965
\$Incentives_Direct 1	20.2	2.5	74.7	0.0	0.4	11.6	347.5
\$Incentives_Flow 1	11.8	2.2	41.0	0.0	0.4	7.8	169.8
\$Incentives_Total 1	32.1	4.7	110.9	0.0	0.8	19.7	497.6
\$Incentives_Direct 2	12.1	2.1	38.9	0.0	0.4	8.2	168.2
\$Incentives_Flow 2	10.9	2.3	37.6	0.0	0.5	7.8	134.1
\$Incentives_Total 2	23.0	4.5	74.5	0.0	1.0	16.2	289.0
Panel B: Firms Are Value Weighted							
IO of five largest institutions	0.27	0.26	0.08	0.06	0.22	0.31	0.51
%Incentives_Direct	0.0165	0.0090	0.0259	0.0003	0.0038	0.0175	0.1290
%Incentives_Flow	0.0173	0.0056	0.0358	0.0002	0.0022	0.0137	0.1781
%Incentives_Total	0.0338	0.0147	0.0614	0.0006	0.0065	0.0313	0.3070
\$Incentives_Direct 1	325.3	157.6	395.6	1.2	46.6	470.7	1,693.9
\$Incentives_Flow 1	130.1	62.0	164.7	-5.8	20.9	183.9	619.3
\$Incentives_Total 1	455.3	231.3	534.7	2.2	74.8	694.3	2,272.6
\$Incentives_Direct 2	144.2	85.1	166.4	1.1	27.8	202.5	668.0
\$Incentives_Flow 2	86.9	48.4	129.3	0.8	18.0	104.2	626.2
\$Incentives_Total 2	<u>231.1</u>	<u>139.3</u>	280.0	2.2	48.7	306.9	1,251.7



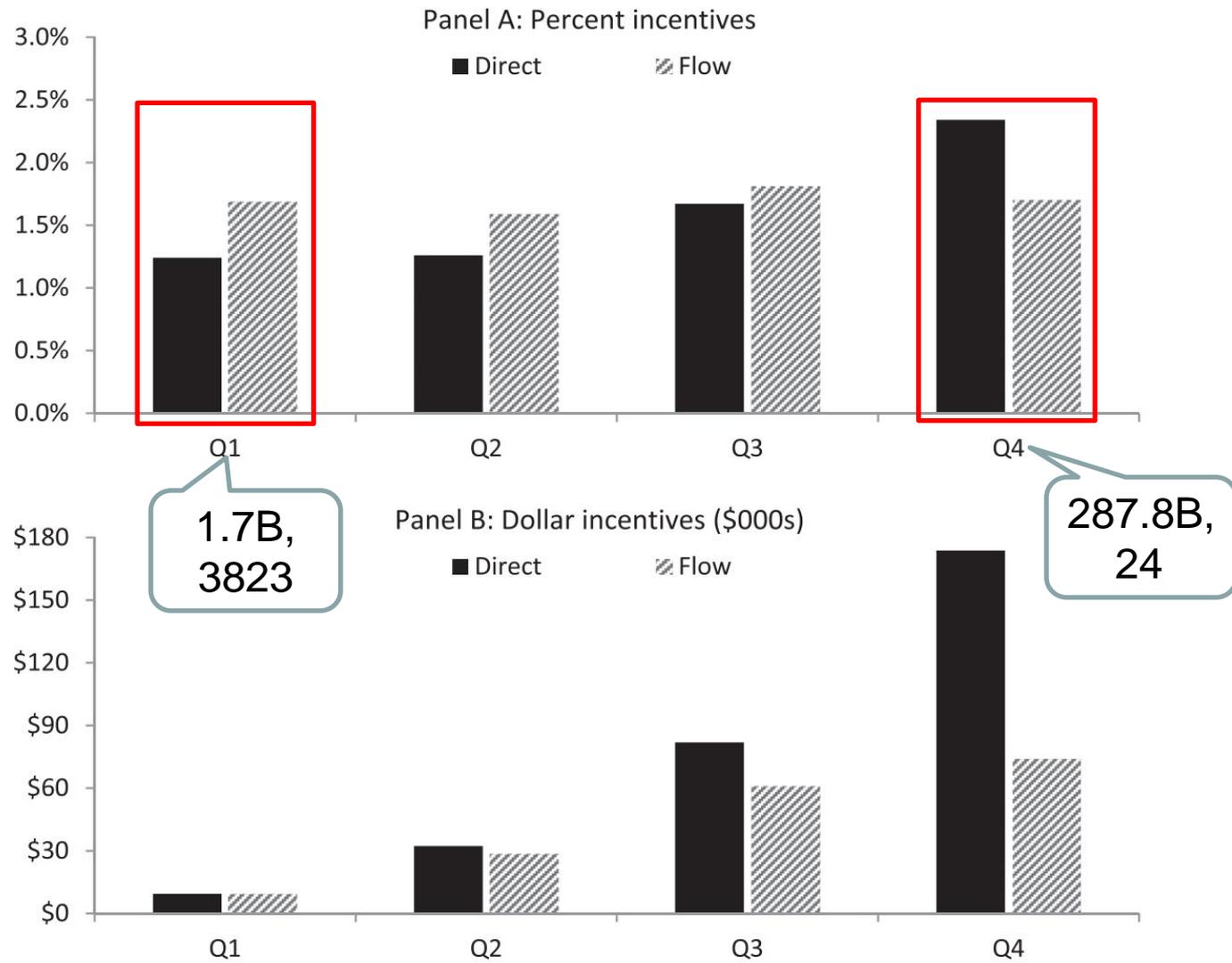


Figure 4. Incentives versus firm size, 2015 to 2017.



## D. Discussion

Our results suggest that larger institutions often have meaningful incentives to be engaged shareholders.

At the same time, most institutions do not engage in public activist campaigns (in our sample, only 206 institutions file Schedule 13D in the period 2015 to 2017). However, many institutions do choose less confrontational forms of engagement.



## 5. Rival Incentives



In practice, institutions often invest in several firms in the same industry, and decisions made by one firm can affect other firms owned by the institution. Casual observation suggests that this phenomenon has become more widespread in recent years and has led to growing concerns about the possible effects on competition.

$$\text{Direct rival incentives}_{i,t} = p * AUM_t * \sum_j w_{j,t}, \quad (8)$$

$$\text{Flow rival incentives}_{i,t} = p * AUM_t * \beta * \sum_j (w_{j,t} - v_{j,t}), \quad (9)$$

Rival incentives depend not only on an institution's holdings in the industry (direct incentives) but also on the holdings of other institutions through the impact on relative performance and subsequent flows.



# A. Estimates of Rival Incentives

Table VII

Own-Firm versus Rival Incentives, 2015 to 2017

		Mean	Med	Std	p1	p25	p75	p99
Panel A: Three-Digit SIC Codes with Two to Six Firms								
Own-firm incentives	%Incentives_Direct	<u>0.0146</u>	0.0100	0.0161	0.0015	0.0061	0.0171	0.0655
	%Incentives_Total	<u>0.0313</u>	0.0202	0.0377	0.0033	0.0133	0.0357	0.1561
	\$Incentives_Direct	49.1	33.0	44.0	0.9	11.6	78.9	139.5
	\$Incentives_Total	<u>78.1</u>	56.7	68.1	1.9	21.1	125.5	252.4
Rival incentives	%Incentives_Direct	<u>0.0029</u>	0.0009	0.0044	0.0000	0.0002	0.0030	0.0167
	%Incentives_Flow	0.0015	0.0001	0.0035	-0.0009	0.0000	0.0008	0.0131
	%Incentives_Total	<u>0.0043</u>	0.0011	0.0076	-0.0002	0.0001	0.0036	0.0295
	\$Incentives_Direct	24.2	6.2	36.0	0.0	1.4	27.0	126.7
	\$Incentives_Flow	7.2	0.1	17.2	-6.4	-0.7	4.8	58.2
	\$Incentives_Total	<u>31.4</u>	5.9	52.1	-0.9	0.6	31.3	183.4
	Negative flow incentives	<u>0.6529</u>	0.6762	0.1889	0.2751	0.4912	0.8151	0.9813
	Negative total incentives	<u>0.4618</u>	0.4401	0.2214	0.0962	0.2914	0.6118	0.9748



# A. Estimates of Rival Incentives

Table VII—Continued

		Mean	Med	Std	p1	p25	p75	p99
Panel B: Three-Digit SIC Codes with 7 to 18 Firms								
Own-firm incentives	%Incentives_Direct	<u>0.0131</u>	0.0100	0.0142	0.0014	0.0061	0.0153	0.0626
	%Incentives_Total	0.0283	0.0204	0.0338	0.0033	0.0126	0.0316	0.1479
	\$Incentives_Direct	41.9	33.3	37.4	0.9	12.7	55.5	148.1
	\$Incentives_Total	69.8	56.1	64.7	1.8	23.2	92.4	298.4
Rival incentives	%Incentives_Direct	<u>0.0076</u>	0.0051	0.0077	0.0002	0.0021	0.0102	0.0363
	%Incentives_Flow	0.0035	0.0009	0.0073	-0.0028	0.0000	0.0031	0.0336
	%Incentives_Total	0.0110	0.0063	0.0145	-0.0007	0.0023	0.0126	0.0689
	\$Incentives_Direct	55.0	40.4	50.1	1.2	15.6	82.0	211.2
	\$Incentives_Flow	6.5	1.3	20.0	-26.4	-2.2	7.7	91.3
	\$Incentives_Total	61.5	43.5	63.6	-0.6	14.2	85.8	277.5
	Negative flow incentives	<u>0.5624</u>	0.5575	0.1572	0.2458	0.4397	0.6819	0.8870
	Negative total incentives	0.2962	0.2636	0.1507	0.0778	0.1819	0.3747	0.7715
Panel C: Three-Digit SIC Codes with 19 or More Firms								
Own-firm incentives	%Incentives_Direct	<u>0.0175</u>	0.0129	0.0168	0.0015	0.0077	0.0234	0.0849
	%Incentives_Total	0.0348	0.0256	0.0382	0.0035	0.0157	0.0418	0.2008
	\$Incentives_Direct	89.5	56.8	96.3	0.7	18.2	125.3	318.2
	\$Incentives_Total	139.9	90.6	163.2	1.4	32.8	185.3	562.5
Rival incentives	%Incentives_Direct	<u>0.0470</u>	0.0304	0.0403	0.0020	0.0141	0.0781	0.1571
	%Incentives_Flow	0.0115	0.0044	0.0279	-0.0226	0.0011	0.0131	0.1309
	%Incentives_Total	0.0585	0.0383	0.0618	0.0013	0.0162	0.0911	0.2847
	\$Incentives_Direct	414.6	265.0	361.6	11.6	118.3	687.1	1,321.7
	\$Incentives_Flow	32.3	12.1	79.4	-152.5	-9.5	59.3	324.5
	\$Incentives_Total	446.9	292.9	405.7	7.5	118.3	734.1	1,554.3
	Negative flow incentives	<u>0.5034</u>	0.5154	0.1587	0.1302	0.3913	0.6187	0.8263
	Negative total incentives	0.1395	0.1060	0.1130	0.0072	0.0594	0.1854	0.5408

## B. Discussion

Common ownership of firms in the same industry is indeed common, especially in industries with many firms.

An institutional shareholder often has at least some incentive to consider the fortunes of rival firms when voting on shareholder proposes or engaging with management.

- If collusion would increase the value of all firms in the industry by 1%, an average institutional shareholder would gain \$4,600 per rival from such a policy (in addition to the own-firm effect).
- Institutions' cross-holdings in the industry tend to reduce by roughly 40% the average institution's incentive to support a policy that helps the firm at the expense of industry rivals.



## C. Extensions

Table VIII  
Own-Firm versus Rival  
Incentives, Alternative  
Industry Concentration  
Measures, 2015 to 2017

	Most Concentrated		Middle		Least Concentrated	
	Own	Rival	Own	Rival	Own	Rival
Panel A: SIC Codes Sorted by Four-Firm Concentration Ratio (more than 80%, 50% to 80%, or less than 50%)						
%Incentives_Direct	<u>0.0150</u>	<u>0.0064</u>	0.0166	0.0404	0.0173	0.0588
%Incentives_Flow	0.0158	0.0017	0.0165	0.0079	0.0190	0.0204
%Incentives_Total	0.0309	0.0081	0.0331	0.0483	0.0363	0.0792
\$Incentives_Direct	66.8	54.9	78.1	380.8	78.7	455.1
\$Incentives_Flow	38.4	4.4	39.4	31.3	57.7	36.0
\$Incentives_Total	<u>105.3</u>	<u>59.3</u>	117.6	412.1	136.4	491.1
Benchmark weight	0.0037	0.0051	0.0047	0.0348	0.0036	0.0441
Negative flow incentives	0.2111	0.5786	0.2324	0.5244	0.2119	0.4814
Negative total incentives	0.0555	0.3334	0.0555	0.1681	0.0568	0.1037
Panel B: Firms Sorted by Number of HP Competitors (One to Five Firms, 6 to 17 firms, or 18 or More Firms)						
%Incentives_Direct	<u>0.0125</u>	<u>0.0027</u>	0.0177	<u>0.0111</u>	0.0158	<u>0.0501</u>
%Incentives_Flow	0.0136	0.0011	0.0196	0.0033	0.0153	0.0144
%Incentives_Total	0.0262	0.0039	0.0373	0.0144	0.0311	0.0645
\$Incentives_Direct	50.2	23.0	73.9	96.0	81.0	443.5
\$Incentives_Flow	28.7	4.5	50.1	10.4	40.9	47.2
\$Incentives_Total	<u>78.9</u>	<u>27.5</u>	124.1	106.5	121.9	490.7
Benchmark weight	0.0027	0.0019	0.0036	0.0087	0.0048	0.0397
Negative flow incentives	0.2126	0.6208	0.2187	0.5251	0.2364	0.4433
Negative total incentives	0.0570	0.4275	0.0606	0.2504	0.0523	0.1093



## C. Extensions

Table IX

### Own-Firm versus Rival Incentives for the Largest Shareholders, 2015 to 2017

	Most Concentrated		Middle		Least Concentrated	
	Own	Rival	Own	Rival	Own	Rival
Panel A: SIC Codes Sorted by Number of Firms (Two to Six Firms, 7 to 18 Firms, or 19 or More firms)						
%Incentives_Direct	0.0139	<u>0.0027</u>	0.0134	<u>0.0078</u>	0.0178	<u>0.0461</u>
%Incentives_Flow	0.0158	0.0012	0.0157	0.0038	0.0179	0.0101
%Incentives_Total	0.0297	0.0039	0.0292	0.0117	0.0357	0.0562
\$Incentives_Direct	90.3	45.6	79.2	100.4	174.3	765.6
\$Incentives_Flow	54.2	16.2	54.4	11.5	102.5	55.4
\$Incentives_Total	144.5	61.8	133.7	112.0	276.8	821.0
Benchmark weight	0.0026	<u>0.0018</u>	0.0021	<u>0.0051</u>	0.0050	<u>0.0388</u>
Negative flow incentives	0.1786	0.5947	0.2042	0.5035	0.1960	0.5123
Negative total incentives	0.0043	0.3370	0.0075	0.1938	0.0077	0.0806



## C. Extensions

Table IX—Continued

	Most Concentrated		Middle		Least Concentrated	
	Own	Rival	Own	Rival	Own	Rival
Panel B: SIC Codes Sorted by Four-Firm Concentration Ratio (More than 80%, 50% to 80%, or less than 50%)						
%Incentives_Direct	0.0153	0.0063	0.0163	0.0394	0.0188	0.0582
%Incentives_Flow	0.0162	0.0017	0.0162	0.0064	0.0213	0.0193
%Incentives_Total	0.0314	0.0080	0.0325	0.0458	0.0401	0.0775
\$Incentives_Direct	127.1	100.4	152.9	719.7	151.9	810.2
\$Incentives_Flow	78.5	10.6	79.4	52.3	114.2	60.2
\$Incentives_Total	205.6	111.0	232.3	772.0	266.0	870.4
Benchmark weight	0.0036	0.0051	0.0047	0.0348	0.0035	0.0443
Negative flow incentives	0.1701	0.5124	0.2260	0.5356	0.1785	0.5051
Negative total incentives	0.0039	0.2289	0.0091	0.1028	0.0086	0.0503
Panel C: Firms Sorted by Number of HP Competitors (One to Five firms, 6 to 17 Firms, or 18 or More Firms)						
%Incentives_Direct	0.0120	0.0027	0.0170	0.0109	0.0160	0.0488
%Incentives_Flow	0.0128	0.0010	0.0188	0.0031	0.0156	0.0127
%Incentives_Total	0.0249	0.0037	0.0358	0.0140	0.0316	0.0615
\$Incentives_Direct	95.5	42.8	139.6	177.8	158.6	817.7
\$Incentives_Flow	58.0	10.0	96.3	21.1	84.4	87.7
\$Incentives_Total	153.5	52.8	235.9	198.9	243.0	905.4
Benchmark weight	0.0028	0.0019	0.0035	0.0087	0.0048	0.0397
Negative flow incentives	0.1789	0.5349	0.1675	0.4872	0.2313	0.4079
Negative total incentives	0.0061	0.2985	0.0102	0.1677	0.0049	0.0506



## C. Extensions

Table X  
Own-Firm versus Rival Incentives for Institutions' Largest Holdings,  
2015 to 2017

		Mean	Med	Std	p1	p25	p75	p99
Panel A: Three-Digit SIC Codes with Two to Six Firms								
Own-firm incentives	%Incentives_Direct	<u>0.0098</u>	0.0046	0.0208	0.0013	0.0036	0.0083	0.0877
	%Incentives_Total	<u>0.0200</u>	0.0072	0.0499	0.0020	0.0048	0.0169	0.2067
	\$Incentives_Direct	50.0	37.4	50.2	0.3	10.2	71.1	193.7
	\$Incentives_Total	80.6	57.6	90.5	0.5	17.7	106.6	385.3
Rival incentives	%Incentives_Direct	<u>0.0014</u>	0.0012	0.0030	0.0000	0.0006	0.0014	0.0081
	%Incentives_Flow	0.0000	-0.0002	0.0040	-0.0041	-0.0007	0.0002	0.0083
	%Incentives_Total	<u>0.0014</u>	0.0009	0.0070	-0.0040	-0.0001	0.0015	0.0165
	\$Incentives_Direct	13.2	7.8	16.4	0.0	0.9	17.6	67.5
	\$Incentives_Flow	0.1	-0.4	12.6	-27.6	-2.6	1.4	50.4
	\$Incentives_Total	13.3	4.0	25.5	-15.9	-0.1	19.2	<u>116.3</u>
	Negative flow incentives	0.7352	0.7446	0.1876	0.3421	0.5936	0.8901	1.0000
Negative total incentives	0.5381	0.5436	0.3004	0.0463	0.2883	0.7823	1.0000	



# C. Extensions

## Table X—Continued

		Mean	Med	Std	p1	p25	p75	p99
Panel B: Three-Digit SIC Codes with 7 to 18 firms								
Own-firm incentives	%Incentives_Direct	0.0124	0.0048	0.0248	0.0025	0.0037	0.0099	0.1215
	%Incentives_Total	0.0262	0.0080	0.0597	0.0035	0.0049	0.0206	0.2884
	\$Incentives_Direct	54.7	40.3	56.6	0.3	13.6	77.0	248.4
	\$Incentives_Total	91.1	56.6	111.6	0.7	23.9	138.8	564.3
Rival incentives	%Incentives_Direct	0.0042	0.0035	0.0080	0.0000	0.0030	0.0039	0.0249
	%Incentives_Flow	0.0002	-0.0005	0.0108	-0.0081	-0.0014	-0.0001	0.0273
	%Incentives_Total	0.0044	0.0031	0.0187	-0.0078	0.0017	0.0037	0.0519
	\$Incentives_Direct	37.0	26.4	39.0	0.0	5.0	51.6	131.2
	\$Incentives_Flow	-4.6	-2.8	17.8	-36.4	-10.1	-0.2	36.5
	\$Incentives_Total	32.4	19.5	42.0	-9.7	2.8	46.1	120.9
	Negative flow incentives	0.6698	0.6671	0.1591	0.3630	0.5367	0.7779	1.0000
	Negative total incentives	0.3870	0.3787	0.2849	0.0085	0.0910	0.5746	1.0000
Panel C: Three-Digit SIC Codes with 19 or More Firms								
Own-firm incentives	%Incentives_Direct	0.0233	0.0132	0.0333	0.0054	0.0117	0.0187	0.1822
	%Incentives_Total	0.0461	0.0204	0.0810	0.0099	0.0154	0.0361	0.4315
	\$Incentives_Direct	144.4	103.9	156.7	0.6	28.6	173.3	458.3
	\$Incentives_Total	228.7	153.1	287.3	1.2	50.2	287.5	1006.7
Rival incentives	%Incentives_Direct	0.0286	0.0251	0.0192	0.0060	0.0237	0.0289	0.1021
	%Incentives_Flow	0.0005	-0.0021	0.0250	-0.0347	-0.0041	0.0005	0.0884
	%Incentives_Total	0.0291	0.0228	0.0438	-0.0231	0.0201	0.0285	0.1912
	\$Incentives_Direct	275.4	200.5	295.1	0.2	41.4	349.6	953.9
	\$Incentives_Flow	-9.6	-8.0	58.3	-120.3	-36.8	0.9	156.8
	\$Incentives_Total	265.7	192.7	300.6	-20.8	33.9	319.2	1040.9
	Negative flow incentives	0.6285	0.6297	0.1411	0.2925	0.5429	0.6961	1.0000
	Negative total incentives	0.2264	0.1572	0.2261	0.0011	0.0170	0.3628	0.9233



## C. Extensions

Table XI  
Own-Firm versus Rival Incentives in Concentrated Industries, Indexers versus Nonindexers, 2015 to 2017

	Indexers		Other Institutions	
	Own	Rival	Own	Rival
Panel A: SIC Codes with Two to Six Firms				
%Incentives_Direct	<u>0.0033</u>	<u>0.0020</u>	<u>0.0235</u>	<u>0.0031</u>
%Incentives_Flow	0.0009	0.0002	0.0291	0.0018
%Incentives_Total	<u>0.0042</u>	<u>0.0022</u>	0.0526	0.0049
\$Incentives_Direct	64.8	40.7	43.9	18.7
\$Incentives_Flow	15.6	4.6	34.9	7.9
\$Incentives_Total	<u>80.4</u>	<u>45.3</u>	<u>78.9</u>	26.6
Benchmark weight	<u>0.0027</u>	<u>0.0019</u>	0.0026	0.0018
Negative flow incentives	<u>0.4059</u>	<u>0.5354</u>	0.1741	0.6935
Negative total incentives	0.0962	0.1402	0.0618	0.5590
Panel B: SIC Codes with Four-Firm Concentration Ratio Greater than 80%				
%Incentives_Direct	<u>0.0045</u>	<u>0.0055</u>	0.0258	0.0065
%Incentives_Flow	0.0011	0.0005	0.0308	0.0019
%Incentives_Total	0.0056	0.0060	0.0567	0.0085
\$Incentives_Direct	91.0	109.9	59.7	36.1
\$Incentives_Flow	22.9	9.2	46.9	2.6
\$Incentives_Total	<u>113.9</u>	<u>119.0</u>	106.6	38.7
Benchmark weight	<u>0.0037</u>	<u>0.0051</u>	0.0036	0.0051
Negative flow incentives	<u>0.3636</u>	<u>0.4512</u>	0.1897	0.6288
Negative total incentives	0.0789	0.0673	0.0642	0.4203



## C. Extensions

Table XI—Continued

	Indexers		Other Institutions	
	Own	Rival	Own	Rival
Panel C: Firms with One to Five HP Competitors				
%Incentives_Direct	0.0034	0.0021	0.0152	0.0029
%Incentives_Flow	0.0009	0.0002	0.0173	0.0014
%Incentives_Total	0.0043	0.0022	0.0326	0.0044
\$Incentives_Direct	68.4	41.4	41.2	17.0
\$Incentives_Flow	18.4	3.3	29.5	5.0
\$Incentives_Total	86.8	44.7	70.7	22.1
Benchmark weight	0.0028	0.0019	0.0028	0.0019
Negative flow incentives	0.3434	0.4747	0.1903	0.6701
Negative total incentives	0.0417	0.1194	0.0676	0.5226



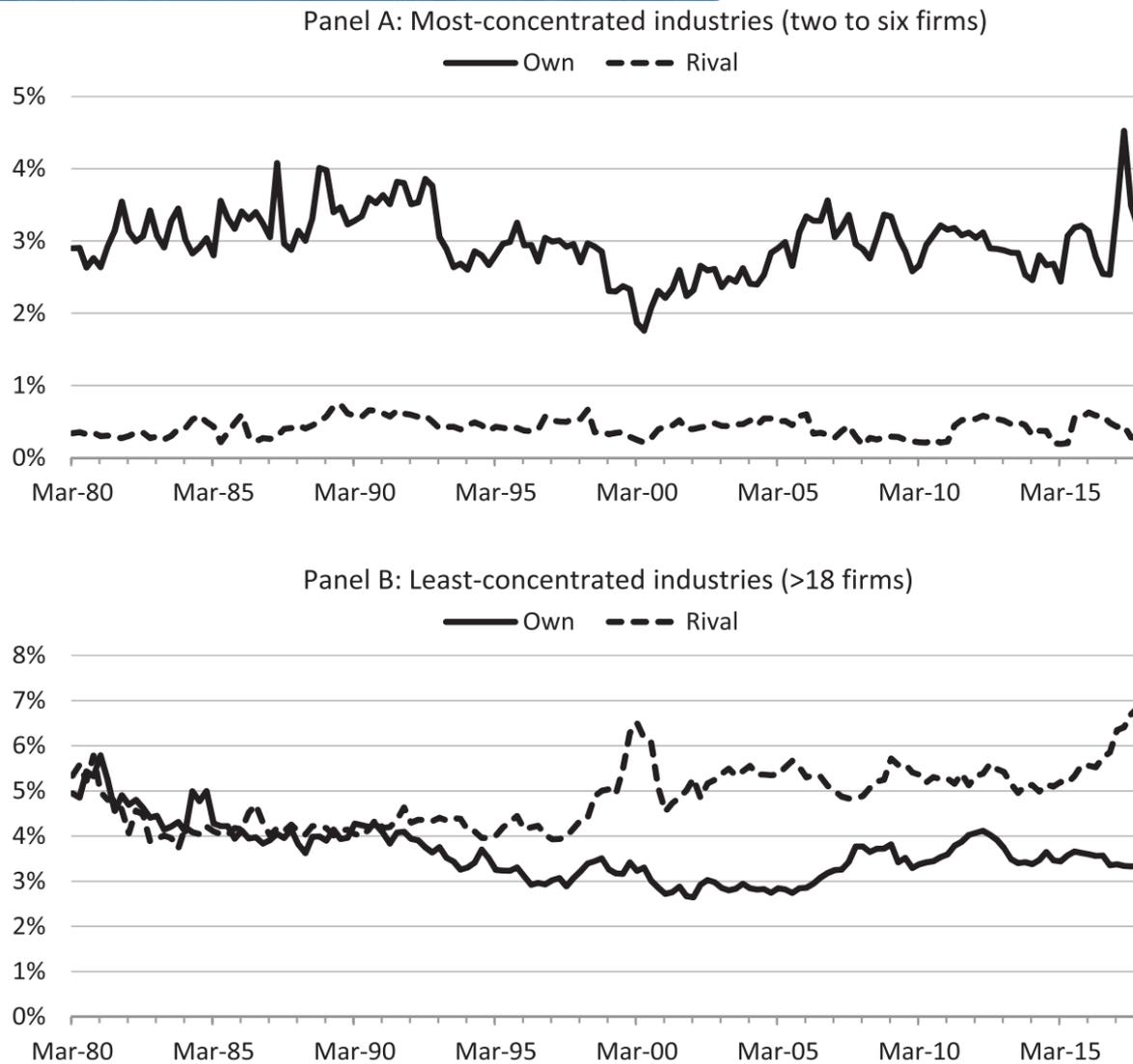


Figure 5. Own-firm versus rival incentives, 1980 to 2017.



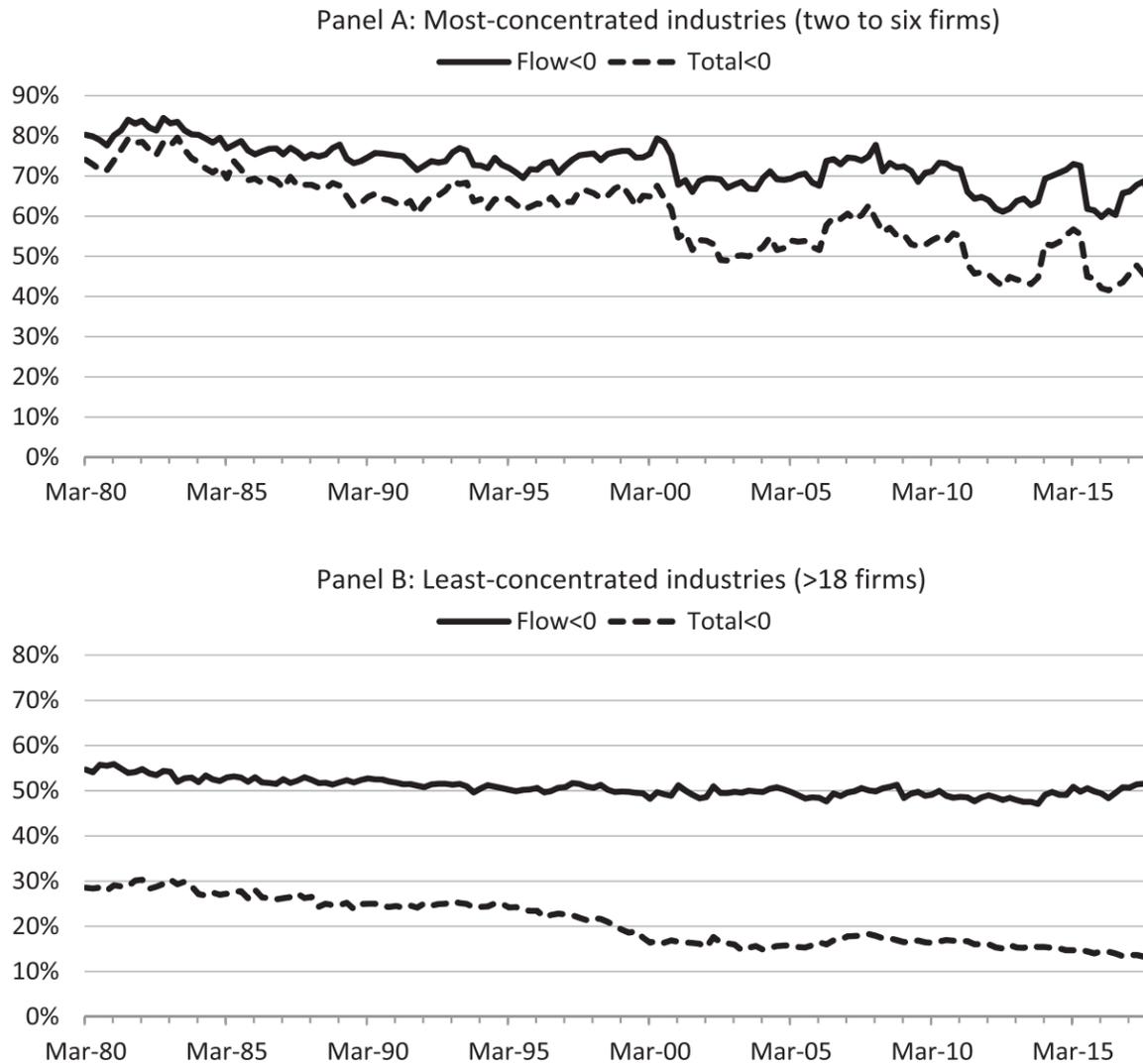


Figure 6. Frequency of negative rival incentives, 1980 to 2017.



## 6. Conclusion



Our estimates suggest that institutions' incentives are frequently modest but can be strong, especially for larger firms and larger institutions.

Rival incentives can be significant, especially for large indexing institutions, but are generally weak in the most concentrated industries (in which concerns about strategic interactions might be larger).

For a significant fraction of institutional shareholders in a given firm, rival incentives are actually negative because the institution underweights rival firms relative to competing institutions, implying that an increase in the value of a rival hurts the institution's relative performance and hence subsequent flows.



THANKS!



山西大学

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