

# Are Institutions Informed About News?

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November 2012

# Motivation

## Why institutions should be informed

- Better access to information
  - Institutions have direct line of communication with publicly traded firms as well as brokerages through their investment banking, lending, and asset management divisions
  - Most mutual and hedge funds employ buy-side analysts and enjoy better relationship with the sell-side analysts
- Better information processing
  - Economies of scale allow institutions to monitor many sources of information
  - Institution employ professionals and technologies with superior information processing skills

# Are institutions informed?

Popular press

New York Times, December 23, 2002, “Can settlements actually level the playing field for investors?”

“For years, Wall Street’s dirty little secret was that its research was devised expressly for two key constituencies: its institutional investors and its corporate clients. If the individual investor wanted to join the party, well, caveat emptor”

Not touching issue of whether or not institutions being informed is good or bad

# Are institutions informed?

## Empirical evidence for YES

- Returns of stocks with high institutional ownership lead returns of stocks with low institutional ownership - Badrinath, Kale, and Noe (1995)
- Higher institutional holdings is associated with more efficient pricing - Sias and Starks (1997), Boehmer and Kelly (2009)
- Profitable buying by institutions beginning five days prior to the public release of analysts' initial reports containing positive recommendations - Irvine, Lipson, and Puckett (2007)
- Institutional trading predicts returns at the firm, industry, and market levels - Boulatov, Hendershott, and Livdan (2011)

# Are institutions informed?

Empirical evidence for NO

- Institutional are not net buyers in target firms prior to acquisitions and their trading is not related to future earnings announcement returns - Griffin, Shu, Topaloglu (2011)
- Institutions are marginally net sellers of the targets in the month prior to takeover announcements and their trading strategy around the announcement does not yield significant abnormal returns - Jegadeesh and Tang (2010)
- Institutions are not able to differentiate between good recommendations and bad recommendations - Busse, Green, Jegadeesh (2010)
- Short sellers do not anticipate news - Engelberg, Reed, Ringgelberg (2010)

# Our evidence

This paper uses comprehensive set of news and institutional trading

- Combine daily non-public data on buy and sell volume by institutions from 2003 through 2005 for 1,700 NYSE-listed stocks with all news announcement for the same time period from the Reuters NewsScope Sentiment Engine
- We find the institutional trading predicts:
  - 1 News announcements
  - 2 The sentiment of the news
  - 3 Returns on announcement day
  - 4 Earnings announcement surprises
- True for specific news types, but less statistically significant
- Consistent with models of asymmetric information with correlated public news releases

- Non-public data for 2003-2005
- NYSE Consolidated Equity Audit Trail (CAUD)
  - 1 Data is part of TORQ ( 100 stocks in 1990)
  - 2 TORQ is similar to TAQ, but has 2 extra files: CD (the audit trail) and SOD (the system order data)
  - 3 Used in other papers, e.g., Kaniel, Saar, and Titman (2008, 2011) for “individuals”; Boehmer and Kelly (2009) and Boulatov, Hendershott, and Livdan (2011) for institutions
- In each transaction the type of the buyer and seller is identified by a code; started after 87 crash
- Each day for each NYSE common stock we calculate \$ buys and sells by institutions  $\Rightarrow$  41% of total volume

# News Data

## Description

- Reuters NewsScope Sentiment Engine (RNSE) - a database of news releases on the Reuters Data Feed (RDF) for 2003-2005
- RNSE reports uses natural language processing to measure news sentiment and relevance

Topic code	Topic	Description	No. items
RES	Corporate Results	All corporate financial results, dividends, accounts, and annual reports	213,781
RESF	Corporate Results Forecasts	All forecasting of corporate financial results	153,928
NEWS	Major breaking news	Top stories of major international impact	112,740
DBT	Debt Markets	All debt market news	97,910
STX	Stock Markets	All news about equity markets operations, regulations and structure	96,399
MRG	Mergers and Acquisitions	All stories on change of ownership, share stakes, mergers, acquisitions etc.	93,674
USC	US Corporate Bonds	All news about US corporate bonds: issues, forecasts and analysis	74,030
HOT	Hot Stocks	News about stocks on the move	39,769
BACT	Business Activities	News relating to business activities	36,754
CORA	Corporate Analysis	Analysis about a company or group of companies	34,270
ISU	New Issues	All new government and corporate issues of debt and equity	29,463
RCH	Broker Research and Recomm.	All news about broker research and recommendations	27,364
AAA	Ratings	All news about credit ratings	22,868
MNGISS	Management issues/policy	Executive pay, bonuses, corporate governance, accounting irregularities	18,689



# RNSE news announcements

Sample

TIMESTAMP	RIC	RELEVANCE	SENTIMENT	POSITIVE	NEUTRAL	NEGATIVE	LINKED COUNTS	ITEM TYPE	HEADLINE	TOPIC CODES
00:34:28.944	IBM.N	0.29	1	0.538	0.454	0.008	0,0,0,0,0	ARTICLE	Arrow to buy smaller rival for \$485 million	US WHO LEN RTR
11:14:04.042	IBM.N	1	1	0.842	0.133	0.025	0,0,0,0,0	ALERT	UBS RAISES IBM <IBM.N> TO BUY FROM NEUTRAL - THEFLYONTHEWALL.COM	RCH US CA LEN R
11:16:55.812	IBM.N	1	1	0.850	0.119	0.031	1,1,1,1,1	ARTICLE	US RESEARCH NEWS-UBS raises IBM to buy - theflyonthewall.com	RCH US CA LEN R
11:20:50.082	IBM.N	1	0	0.247	0.614	0.138	1,1,1,1,1	ARTICLE	RESEARCH ALERT-UBS upgrades IBM to buy - theflyonthewall.com	RCH DPR HDWR S
12:22:43.689	IBM.N	1	1	0.842	0.133	0.025	0,0,0,0,0	ALERT	IBM <IBM.N> SHARES RISE 1.1 PCT TO \$98.50 BEFORE THE BELL AFTER	RCH US CA LEN R
12:36:50.695	IBM.N	1	1	0.542	0.450	0.008	3,3,3,3,3	ARTICLE	Before the Bell - Bed Bath & Beyond, IBM rise early	DPR HDWR US ST
12:49:19.943	IBM.N	0.28	0	0.213	0.609	0.178	3,3,3,3,3	APPEND	HEADLINE STOCKS - U.S. stocks to watch Jan 8	US STX FIN RESF
14:59:02.943	IBM.N	1	1	0.701	0.164	0.135	1,1,1,1,1	ARTICLE	UPDATE 1-RESEARCH ALERT-UBS upgrades IBM to buy from neutral	US RCH DPR HDWR
15:05:53.790	IBM.N	0.13	-1	0.056	0.125	0.819	1,1,1,1,1	ARTICLE	US RESEARCH NEWS-Credit Suisse recommends trading buy on GM	RCH US CA LEN R
15:06:13.000	IBM.N	0.08	-1	0.056	0.125	0.819	2,2,2,2,2	APPEND	US RESEARCH NEWS-Credit Suisse recommends trading buy on GM	RCH US CA LEN R
16:31:45.041	IBM.N	0.25	0	0.218	0.612	0.170	4,4,4,4,4	APPEND	HEADLINE STOCKS - U.S. stocks on the move on Jan 8	US STX FIN RESF
16:31:55.631	IBM.N	0.25	0	0.218	0.612	0.170	6,6,6,6,6	APPEND	HEADLINE STOCKS - U.S. stocks on the move on Jan 8	US STX FIN RESF
18:49:48.004	IBM.N	0.32	0	0.221	0.613	0.166	7,7,7,7,7	APPEND	HEADLINE STOCKS - U.S. stocks on the move on Jan 8	US STX FIN RESF
19:18:14.726	IBM.N	0.20	-1	0.180	0.251	0.568	0,0,0,0,0	ARTICLE	UPDATE 1-Sears aims to drive sales with virtual showroom	RET US WWW LE
20:09:19.547	IBM.N	0.34	1	0.830	0.128	0.042	0,0,0,0,0	ARTICLE	US STOCKS-Indexes higher, upgrades boost tech sector	US STX BUS MUN
20:09:54.796	IBM.N	0.14	1	0.830	0.128	0.042	1,1,1,1,1	APPEND	US STOCKS-Indexes higher, upgrades boost tech sector	US STX BUS MUN
04:09:34.780	IBM.N	1	1	0.512	0.382	0.107	0,0,0,0,0	ARTICLE	IBM appoints new Greater China CEO	CN ASIA ELI HK T
19:13:02.511	IBM.N	0.17	0	0.216	0.611	0.174	0,0,0,0,0	ARTICLE	CES-Visa, Nokia turn mobile phones into mobile wallets	WEU EUROPE WW
19:13:59.476	IBM.N	0.17	0	0.216	0.611	0.174	1,1,1,1,1	APPEND	CES-Visa, Nokia turn mobile phones into mobile wallets	WEU EUROPE WW
11:55:22.595	IBM.N	1	-1	0.188	0.112	0.700	0,0,1,1,1	ALERT	AG EDWARDS CUTS IBM <IBM.N> TO HOLD FROM BUY - THEFLYONTHEWALL.COM	RCH US DPR HDWR
12:02:25.855	IBM.N	1	-1	0.137	0.217	0.645	1,1,3,3,3	ARTICLE	RESEARCH ALERT-AG Edwards cuts IBM to hold - theflyonthewall.com	RCH US DPR HDWR
15:20:49.892	IBM.N	1	-1	0.311	0.145	0.544	1,1,3,3,3	ARTICLE	UPDATE 1-RESEARCH ALERT-AG Edwards downgrades IBM	US RCH DPR HDWR
11:29:20.729	IBM.N	0.18	1	0.841	0.123	0.036	0,0,0,0,0	APPEND	FACTBOX-UK companies cut, close final-salary pensions	GB WEU EUROPE
12:57:47.150	IBM.N	1	1	0.552	0.441	0.007	0,0,0,0,0	ALERT	BANC OF AMERICA RAISES IBM <IBM.N> PRICE TARGET TO \$110 FROM	RCH DPR US LEN
13:24:15.667	IBM.N	1	1	0.565	0.342	0.093	3,3,5,7,7	ARTICLE	RESEARCH ALERT-BofA raises price targets on IBM, Apple, EMC	RCH DPR US LEN

# Data

## Descriptive statistics

	Mean	S.D.	1%	50%	99%
<b>Panel A: News releases and sentiment (126,436 observations)</b>					
News stocks per day	0.115	0.039	0.000	0.111	0.240
News days per company	0.107	0.166	0.000	0.046	0.886
Sentiment	0.005	0.419	-0.763	0.040	0.814
<b>Panel B: Institutional trading (1,101,788 observations)</b>					
IOF	0.004	0.168	-0.425	0.002	0.450
IVol	0.829	1.642	0.006	0.430	6.653
IOF /IVol	0.155	0.170	0.001	0.102	1.000
IBuys	0.416	0.828	0.001	0.215	3.347
ISales	0.413	0.823	0.001	0.212	3.332
<b>Panel C: Return and volume (1,101,788 observations)</b>					
Return	0.094	1.948	-5.451	0.035	6.232
Volume	0.880	1.600	0.013	0.499	6.599

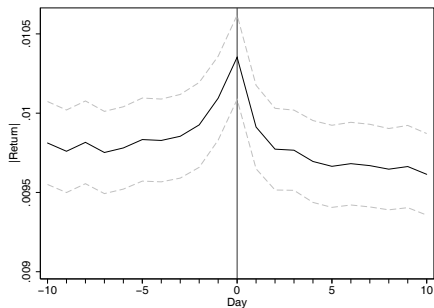
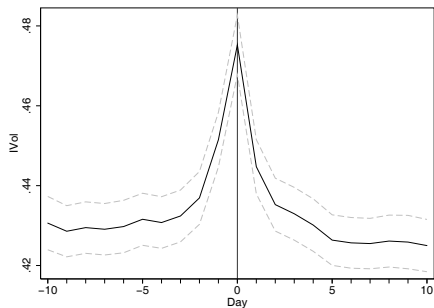
# Empirical tests

## Strategy

- Examine relations between institutional trading and news announcements:
  - ① Occurrence of announcements
  - ② Sentiment of announcements
  - ③ Market reaction (returns) to announcements
  - ④ Institutional trading volume (IVOL), buys+sales
  - ⑤ Institutional order flow (IOF), buys-sales
  
- Tests, panel regression w/ fixed effects
  - ① Probit for news announcements and IVOL
  - ② News sentiment and IOF
  - ③ Newday returns and IOF
  - ④ Panel VARs for sentiment, IOF, and returns
  - ⑤ Earnings announcement surprises and IOF
  
- Suggestions for additional types of analysis welcome

# Institutional trading around news releases

Event Studies: Returns and IOF



# Institutional trading around news releases

Panel Logit regression - News Days

	(A)	(B)	(C)	(D)	(E)
IVol	1.025*** (0.000)				1.017*** (0.000)
Return		1.108*** (0.000)			1.020*** (0.000)
News day			2.427*** (0.000)		6.283*** (0.000)
Sentiment				2.557*** (0.000)	0.448*** (0.000)
Log-likelihood	-2.393	-2.392	-2.335	-2.379	-2.369

# Institutional trading around news releases

Panel Logit regression - No of News Stories

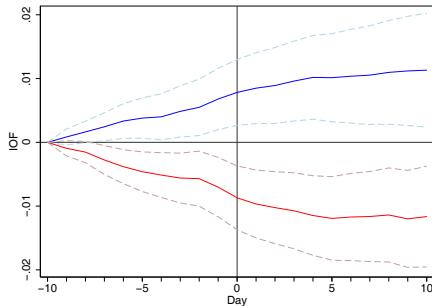
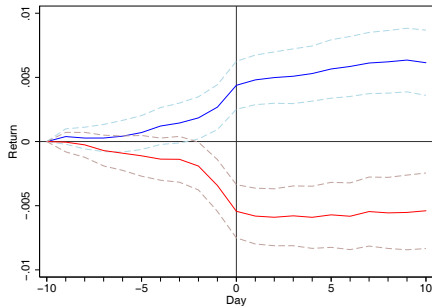
	(A)	(B)	(C)	(D)	(E)
IVol	0.066*** (0.000)				0.043*** (0.000)
Return		0.074*** (0.000)			0.056*** (0.000)
News day			0.889*** (0.000)		0.999*** (0.000)
Sentiment				0.438*** (0.000)	-0.402*** (0.000)
Log-likelihood	-9.944	-9.941	-9.757	-9.931	-9.736

# Institutional trading on news days

## Event Studies: Returns and IOF

Mean abnormal buy-and-hold return (BHAR) for  $i \in (Good, Bad)$ :

$$BHAR(t_0, t_1) = \sum_i w_i \prod_{t_0}^{t_1} R_{i,t} - \sum_{Control} w_{Control} \prod_{t_0}^{t_1} R_{Control,t}$$



Abnormal IOF uses same methodology as returns

# Institutional trading on news days

Returns on day  $t$  regressed on lagged variables

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
IOF	0.632*** (0.169)					0.674*** (0.183)	
IBuys		0.611*** (0.169)					0.647*** (0.183)
ISales		-0.671*** (0.172)					-0.711*** (0.185)
Return			-0.013 (0.014)			-0.015 (0.015)	-0.016 (0.015)
Sentiment				0.024 (0.025)		0.028 (0.026)	0.028 (0.026)
ln(Volume)					-0.021 (0.030)	-0.022 (0.030)	0.003 (0.036)
$R^2$	0.005	0.005	0.005	0.005	0.005	0.005	0.005
$F$	51.349	28.833	3.921	0.895	1.160	15.538	14.244

Economic Significance  $0.632 * 0.168 \Rightarrow 10.6$  b.p.



# Institutional trading on news days

Sentiment on day  $t$  regressed on lagged variables

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
IOF	0.076*** (0.021)					0.049** (0.020)	
IBuys		0.068*** (0.021)					0.044* (0.020)
ISales		-0.091*** (0.022)					-0.057*** (0.021)
Return			0.011*** (0.001)			0.009*** (0.001)	0.009*** (0.001)
Sentiment				0.165*** (0.010)		0.162*** (0.010)	0.162*** (0.010)
In(Volume)					-0.015* (0.008)	-0.013* (0.007)	-0.008 (0.008)
$R^2$	0.064	0.064	0.065	0.082	0.064	0.083	0.083
$F$	17.147	38.436	89.258	609.550	14.096	174.722	151.253

# Institutional trading on news days

IOF on day  $t$  regressed on lagged variables

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
IOF	0.257*** (0.011)					0.247*** (0.011)	
IBuys		0.259*** (0.011)					0.250*** (0.011)
ISales		-0.254*** (0.011)					-0.243*** (0.011)
Return			0.005*** (0.000)			0.004*** (0.000)	0.004*** (0.000)
Sentiment				0.001 (0.001)		-0.001* (0.001)	-0.001* (0.001)
ln(Volume)					0.003*** (0.001)	0.002** (0.001)	-0.001 (0.001)
$R^2$	0.075	0.075	0.033	0.020	0.020	0.084	0.084
$F$	1051	544	1084	1.75	28.26	517	421

# Calendar-time evidence

## Panel regression

	(A)	(C)	(E)	(G)
IOF	0.361*** (0.071)	0.291*** (0.061)		
IOF * News day		0.385*** (0.148)		
IBuys			0.355*** (0.072)	0.285*** (0.063)
ISales			-0.374*** (0.072)	-0.300*** (0.061)
IBuys * News day				0.380** (0.148)
ISales * News day				-0.395*** (0.149)
News day		0.015 (0.021)		0.019 (0.022)
Return		-0.017 (0.013)		-0.017 (0.013)
Sentiment		0.041** (0.020)		0.041** (0.020)
ln(Volume)		-0.008 (0.025)		0.001 (0.031)
$R^2$	0.002	0.002	0.002	0.002
$F$	159.504	37.384	81.284	28.874

# Calendar-time evidence

## VAR Estimates

		IOF	Return	Sentiment
IOF	$t - 1$	0.240*** (0.008)	0.169*** (0.016)	0.003*** (0.001)
	$t - 2$	0.077*** (0.006)	0.032** (0.016)	-0.001 (0.001)
Return	$t - 1$	0.003*** (0.000)	-0.005*** (0.001)	0.001*** (0.000)
	$t - 2$	0.000*** (0.000)	0.000 (0.001)	0.000 (0.000)
Sentiment	$t - 1$	0.000 (0.001)	0.090*** (0.014)	0.098*** (0.002)
	$t - 2$	-0.001 (0.001)	0.019 (0.013)	0.030*** (0.002)

# Different news groups

## Returns

	RES	RESF	DBT	STX	NEWS	MRG	USC	HOT	BACT	CORA	ISU	RCH	AAA	MNGISS
IBuys	0.978* (0.528)	1.302** (0.539)	0.988* (0.530)	1.320** (0.554)	0.696 (0.571)	0.991* (0.557)	1.605*** (0.616)	1.117* (0.641)	0.897 (0.691)	0.867 (0.711)	1.002 (0.831)	3.997*** (0.899)	1.315** (0.626)	0.291 (0.858)
ISales	-1.012** (0.515)	-1.280** (0.533)	-1.016* (0.539)	-1.310** (0.557)	-0.692 (0.580)	-1.037* (0.568)	-1.615*** (0.614)	-1.111* (0.619)	-0.805 (0.708)	-0.791 (0.731)	-1.120 (0.852)	-3.748*** (0.858)	-1.387** (0.633)	-0.419 (0.895)
Return	-0.026 (0.019)	-0.016 (0.017)	-0.002 (0.018)	0.004 (0.020)	-0.003 (0.016)	-0.027 (0.018)	-0.002 (0.020)	0.012 (0.025)	0.005 (0.029)	0.006 (0.029)	-0.037 (0.024)	0.006 (0.030)	-0.019 (0.028)	-0.007 (0.018)
Sentiment	-0.052 (0.054)	0.012 (0.053)	0.094* (0.049)	0.011 (0.064)	0.033 (0.053)	0.010 (0.054)	0.062 (0.075)	-0.032 (0.097)	0.011 (0.040)	0.020 (0.045)	0.082 (0.062)	-0.061 (0.103)	0.250* (0.130)	0.061 (0.119)
Volume	-0.065 (0.058)	-0.076 (0.047)	-0.078* (0.047)	-0.023 (0.048)	-0.033 (0.044)	-0.052 (0.045)	-0.100* (0.057)	-0.084 (0.083)	0.031 (0.075)	0.039 (0.082)	0.008 (0.064)	-0.116 (0.117)	-0.083 (0.089)	-0.016 (0.079)
$R^2$	0.020	0.016	0.016	0.014	0.013	0.014	0.017	0.035	0.014	0.015	0.036	0.050	0.053	0.040
F	2.505	2.544	2.568	2.075	0.658	2.728	3.933	0.972	0.799	0.774	1.375	7.435	2.331	0.334

IOF coefficients are all of right sign, most statistically significant

# Different news groups

## Sentiment

	RES	RESF	DBT	STX	NEWS	MRG	USC	HOT	BACT	CORA	ISU	RCH	AAA	MNGISS
lBuys	0.158** (0.070)	0.219*** (0.071)	0.029 (0.085)	0.140** (0.069)	0.199** (0.084)	0.209** (0.086)	0.174** (0.085)	0.184** (0.088)	0.078 (0.058)	0.080 (0.054)	0.063 (0.098)	0.509*** (0.134)	0.031 (0.122)	0.224 (0.187)
lSales	-0.144** (0.068)	-0.206*** (0.075)	-0.032 (0.085)	-0.131** (0.067)	-0.212*** (0.082)	-0.216** (0.092)	-0.183** (0.087)	-0.183** (0.086)	-0.075 (0.064)	-0.077 (0.061)	-0.068 (0.094)	-0.469*** (0.132)	-0.041 (0.122)	-0.315* (0.191)
Return	0.015*** (0.002)	0.013*** (0.002)	0.011*** (0.002)	0.014*** (0.002)	0.011*** (0.002)	0.007*** (0.002)	0.011*** (0.003)	0.020*** (0.002)	0.007*** (0.002)	0.008*** (0.002)	-0.000 (0.003)	0.018*** (0.004)	0.013*** (0.003)	-0.002 (0.004)
Sentiment	0.126*** (0.020)	0.152*** (0.020)	0.178*** (0.017)	0.131*** (0.012)	0.180*** (0.017)	0.146*** (0.011)	0.182*** (0.020)	0.136*** (0.027)	0.074*** (0.009)	0.065*** (0.011)	0.171*** (0.020)	0.099*** (0.020)	0.189*** (0.021)	0.192*** (0.021)
Volume	-0.023*** (0.008)	-0.025*** (0.009)	-0.031*** (0.011)	-0.038*** (0.010)	-0.008 (0.009)	-0.022* (0.013)	-0.024* (0.013)	-0.033*** (0.011)	-0.025*** (0.007)	-0.031*** (0.007)	-0.017 (0.012)	-0.046*** (0.013)	-0.049*** (0.016)	0.012 (0.019)
R <sup>2</sup>	0.113	0.107	0.131	0.122	0.128	0.124	0.141	0.143	0.148	0.168	0.123	0.119	0.292	0.198
F	36.238	53.200	62.506	66.880	74.785	36.380	52.539	37.940	18.272	21.301	20.551	18.707	21.981	21.279

IOF coefficients except AAA are of right sign, about half statistically significant

# Different news groups

IOF

	RES	RESF	DBT	STX	NEWS	MRG	USC	HOT	BACT	CORA	ISU	RCH	AAA	MNGISS
lBuys	0.384*** (0.025)	0.375*** (0.023)	0.362*** (0.024)	0.389*** (0.037)	0.378*** (0.024)	0.383*** (0.029)	0.369*** (0.027)	0.348*** (0.034)	0.440*** (0.054)	0.441*** (0.055)	0.314*** (0.044)	0.421*** (0.024)	0.352*** (0.041)	0.452*** (0.041)
lSales	-0.381*** (0.027)	-0.376*** (0.023)	-0.353*** (0.024)	-0.386*** (0.038)	-0.370*** (0.025)	-0.375*** (0.030)	-0.363*** (0.027)	-0.335*** (0.033)	-0.443*** (0.055)	-0.443*** (0.056)	-0.305*** (0.045)	-0.416*** (0.027)	-0.353*** (0.041)	-0.449*** (0.044)
Return	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.005*** (0.001)	0.005*** (0.001)	0.004*** (0.001)	0.005*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
Sentiment	-0.003** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.002 (0.001)	-0.002* (0.001)	-0.001 (0.001)	-0.002** (0.001)	-0.003* (0.002)	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)	-0.005* (0.003)	-0.005** (0.002)	-0.002 (0.002)
Volume	0.003 (0.002)	0.003* (0.002)	0.002 (0.001)	0.003* (0.002)	0.002 (0.001)	0.002 (0.002)	0.004** (0.002)	-0.000 (0.002)	0.003* (0.002)	0.003 (0.002)	0.004* (0.002)	0.005* (0.002)	0.003 (0.003)	-0.000 (0.003)
$R^2$	0.079	0.083	0.105	0.107	0.109	0.115	0.110	0.128	0.161	0.162	0.193	0.136	0.168	0.182
$F$	81.657	85.223	78.056	89.768	97.814	78.494	59.251	36.406	70.622	68.224	45.717	39.325	22.211	23.581

# Institutional trading and earnings surprises

Contemporaneous correlation positive w/ returns & sentiment, negative w/ IOF

SUE score:

$$SUE_i = \frac{ER_i - E[\widehat{ER}_i]}{\sigma(\widehat{ER}_i)}$$

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
IOF	0.980** (0.499)					0.838* (0.496)	
IBuys		1.058** (0.503)					0.853* (0.505)
ISales		-0.980** (0.490)					-0.837* (0.495)
Return			0.066*** (0.025)			0.059** (0.025)	0.058** (0.025)
Sentiment				0.139 (0.181)		0.104 (0.184)	0.103 (0.184)
Volume					0.074 (0.169)	0.066 (0.167)	0.058 (0.221)
$R^2$	0.197	0.197	0.198	0.197	0.197	0.199	0.199
$F$	4.755	2.735	3.846	0.361	0.278	2.289	1.873



- NYSE data on buy and sell volume by institutions
- Reuters NewsScope Sentiment Engine
- We find the institutional trading predicts:
  - 1 News announcements
  - 2 The sentiment of the news
  - 3 Returns on announcement day
  - 4 Earnings announcement surprises
- Suggestions for additional types of analysis welcome
- E.g., results by type of stock: market cap, liquidity, etc.