All That Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors

张英、曹育玮、胡睿卿、王一森

SF RUC

11/27/2022

1. Research Background
2. Data and Indicator
3. Empirical Results
4. Conclusion

1. Research Background
2. Data and Indicator
3. Empirical Results
4. Conclusion

Background

- In finance, market participants are assumed to be perfectly rational
- In fact, market participants are often irrational
- The research results of behavioral finance cognitive psychology are applied to the analysis of investors' behavior

Motivation

- The attention of financial market participants is limited. So How players in financial markets make decisions with limited attention.

Hypothesis

- Investors have limited attention, so they narrow their selection pool by focusing on attention-grabbing stocks.
- Since investors do little short selling, they tend to be net buyers of these stocks.
- Hypothesis: Individual investors are net buyers of compelling stocks.

Tool : sorting

- In Asset pricing, sorting is an important method to check possible effects of one variable on another.
- For example, in this article stocks are divided into 10 groups on their Abnormal Trading Volume, then we observe the pattern of the mean *BSI* of these portfolios
- Choosing portfolio rather than single stock as research object is a tradition from senior Big Names(e.g Eugene Fama), the reason of which is that stock-level regression results are heavily contaminated for internal correlation of perturbation term.

UNIVERSITY 1937 中国人民大

1. Research Background
2. **Data and Indicator**
3. Empirical Results
4. Conclusion

RENMIN UNIVERSIT
1937
中国人民大

Data Source

- To capture the trading attention, this article uses the order level data
- Individual investor trading data are from three sources
  - a large discount brokerage provides cheap and simple services
  - a small discount brokerage where more sophisticated investors gather
  - a large retail brokerage which is full-service and professional
- Insititutional investor data are from Plexus Group which records 43 money managers' daily trading data.
- According to the work of Keim and Madhavan(1998), these managers are classified as "Momentum", "Value" and "Diversified"

Indicator Construction

- Though the perfect proxy for attention may not exist, this article proposes three proxies
  - Abnormal Trading Volume

$$AV_{it} = \frac{V_{it}}{\overline{V_{it}}} \qquad \overline{V_{it}} = \sum_{d=t-252}^{t-1} \frac{V_{id}}{252}$$

where V_{it} is the dollar volume for stock i at day t from CRSP

  - One-day return, namely the last trading day return for one stock
  - News, a dummy $news_{it}$ which is set to 1 when there is news about stock i at day t

Indicator Construction

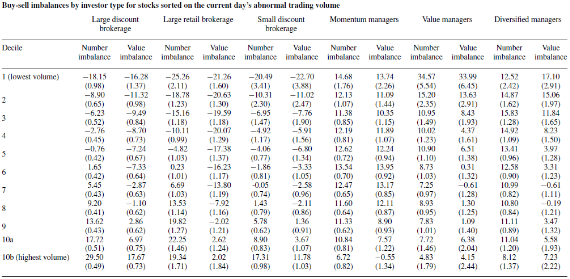
- Another key point of this paper is to precisely measure the trading behaviour of investors on some stock
- Authors propose the buy-sell imbalance BSI to fix this problem

$$BSI_{pt} = \frac{\sum_{i=1}^{n_{pt}} NB_{it} - \sum_{i=1}^{n_{pt}} NS_{it}}{\sum_{i=1}^{n_{pt}} NB_{it} + \sum_{i=1}^{n_{pt}} NS_{it}}$$

- where n_{pt} is the number of stocks in partition p on day t
- NB_{it}, NS_{it} can be the number or value of net purchases and net sales of stock i at day t

1. Research Background
2. Data and Indicator
3. **Empirical Results**
4. Conclusion

Volume Sorts

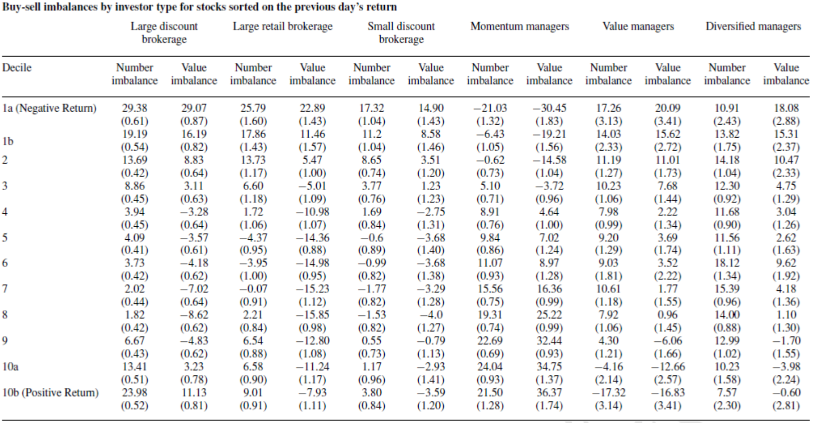


Buy-sell imbalances by investor type for stocks sorted on the current day's abnormal trading volume

	Large discount brokerage		Large retail brokerage		Small discount brokerage		Momentum managers		Value managers		Diversified managers	
Decile	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance
1 (lowest volume)	−18.15	−16.28	−25.26	−21.26	−20.49	−22.70	14.68	13.74	34.57	33.99	12.52	17.10
	(0.98)	(1.37)	(2.11)	(1.60)	(3.41)	(3.88)	(1.76)	(2.26)	(5.54)	(6.45)	(2.42)	(2.91)
2	−8.90	−11.32	−18.78	−20.63	−10.31	−11.02	12.13	11.09	15.20	13.63	14.87	15.06
	(0.65)	(0.98)	(1.23)	(1.30)	(2.30)	(2.47)	(1.07)	(1.44)	(2.35)	(2.91)	(1.62)	(1.97)
3	−6.23	−9.49	−15.16	−19.59	−6.95	−7.76	11.38	10.35	10.95	8.43	15.83	11.84
	(0.52)	(0.84)	(1.18)	(1.18)	(1.47)	(1.90)	(0.85)	(1.15)	(1.49)	(1.93)	(1.28)	(1.65)
4	−2.76	−8.70	−10.11	−20.07	−4.92	−5.91	12.19	11.89	10.02	4.37	14.92	8.23
	(0.45)	(0.73)	(0.99)	(1.29)	(1.17)	(1.56)	(0.81)	(1.07)	(1.23)	(1.61)	(1.09)	(1.50)
5	−0.76	−7.24	−4.82	−17.38	−4.06	−6.80	12.62	12.24	10.90	6.51	13.41	3.97
	(0.42)	(0.67)	(1.03)	(1.37)	(0.77)	(1.34)	(0.72)	(0.94)	(1.10)	(1.38)	(0.96)	(1.28)
6	1.65	−7.33	0.23	−16.23	−1.86	−3.33	13.54	13.95	8.73	0.31	12.58	3.31
	(0.42)	(0.64)	(1.01)	(1.17)	(0.81)	(1.05)	(0.70)	(0.92)	(1.03)	(1.32)	(0.90)	(1.23)
7	5.45	−2.87	6.69	−13.80	-0.05	−2.58	12.47	13.17	7.25	−0.61	10.99	−0.61
	(0.43)	(0.63)	(1.03)	(1.19)	(0.74)	(0.96)	(0.65)	(0.85)	(0.97)	(1.28)	(0.82)	(1.11)
8	9.20	−1.10	13.53	−7.92	1.43	−2.11	11.60	12.11	8.93	1.30	10.80	−0.19
	(0.41)	(0.62)	(1.14)	(1.16)	(0.79)	(0.86)	(0.64)	(0.87)	(0.95)	(1.25)	(0.84)	(1.21)
9	13.62	2.86	19.82	−2.02	5.78	1.36	11.33	8.90	7.83	1.09	11.11	3.47
	(0.43)	(0.62)	(1.27)	(1.21)	(0.62)	(0.91)	(0.62)	(0.93)	(1.01)	(1.40)	(0.89)	(1.32)
10a	17.72	6.97	22.25	2.62	8.90	3.67	10.84	7.57	7.72	6.38	11.04	5.58
	(0.51)	(0.75)	(1.46)	(1.24)	(0.83)	(1.07)	(0.81)	(1.22)	(1.46)	(2.04)	(1.20)	(1.93)
10b (highest volume)	29.50	17.67	19.34	2.02	17.31	11.78	6.72	−0.55	4.83	4.15	8.12	7.23
	(0.49)	(0.73)	(1.71)	(1.84)	(0.98)	(1.03)	(0.82)	(1.34)	(1.79)	(2.44)	(1.37)	(2.22)

- BSI for individual investors rises monotonically with trading volume.
- However, institutional investors show the opposite result.

Return Sorts

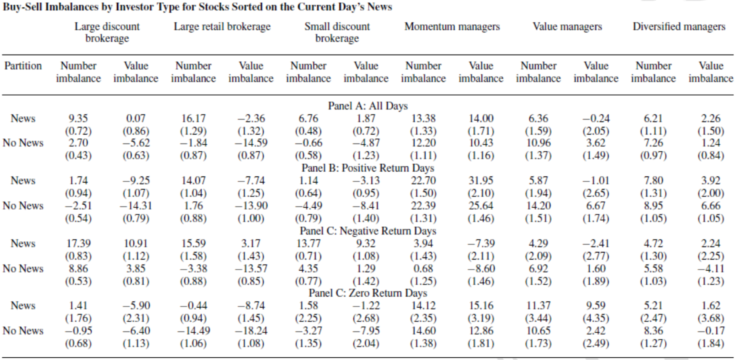


Buy-sell imbalances by investor type for stocks sorted on the previous day's return

	Large discount brokerage		Large retail brokerage		Small discount brokerage		Momentum managers		Value managers		Diversified managers	
Decile	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance
1a (Negative Return)	29.38	29.07	25.79	22.89	17.32	14.90	−21.03	−30.45	17.26	20.09	10.91	18.08
	(0.61)	(0.87)	(1.60)	(1.43)	(1.04)	(1.43)	(1.32)	(1.83)	(3.13)	(3.41)	(2.43)	(2.88)
1b	19.19	16.19	17.86	11.46	11.2	8.58	−6.43	−19.21	14.03	15.62	13.82	15.31
	(0.54)	(0.82)	(1.43)	(1.57)	(1.04)	(1.46)	(1.05)	(1.56)	(2.33)	(2.72)	(1.75)	(2.37)
2	13.69	8.83	13.73	5.47	8.65	3.51	−0.62	−14.58	11.19	11.01	14.18	10.47
	(0.42)	(0.64)	(1.17)	(1.00)	(0.74)	(1.20)	(0.73)	(1.04)	(1.27)	(1.73)	(1.04)	(2.33)
3	8.86	3.11	6.60	−5.01	3.77	1.23	5.10	−3.72	10.23	7.68	12.30	4.75
	(0.45)	(0.63)	(1.18)	(1.09)	(0.76)	(1.23)	(0.71)	(0.96)	(1.06)	(1.44)	(0.92)	(1.29)
4	3.94	−3.28	1.72	−10.98	1.69	−2.75	8.91	4.64	7.98	2.22	11.68	3.04
	(0.45)	(0.64)	(1.06)	(1.07)	(0.84)	(1.31)	(0.76)	(1.00)	(0.99)	(1.34)	(0.90)	(1.26)
5	4.09	−3.57	−4.37	−14.36	−0.6	−3.68	9.84	7.02	9.20	3.69	11.56	2.62
	(0.41)	(0.61)	(0.95)	(0.88)	(0.89)	(1.40)	(0.86)	(1.24)	(1.29)	(1.74)	(1.11)	(1.63)
6	3.73	−4.18	−3.95	−14.98	−0.99	−3.68	11.07	8.97	9.03	3.52	18.12	9.62
	(0.42)	(0.62)	(1.00)	(0.95)	(0.82)	(1.38)	(0.93)	(1.28)	(1.81)	(2.22)	(1.34)	(1.92)
7	2.02	−7.02	−0.07	−15.23	−1.77	−3.29	15.56	16.36	10.61	1.77	15.39	4.18
	(0.44)	(0.64)	(0.91)	(1.12)	(0.82)	(1.28)	(0.75)	(0.99)	(1.18)	(1.55)	(0.96)	(1.36)
8	1.82	−8.62	2.21	−15.85	−1.53	−4.0	19.31	25.22	7.92	0.96	14.00	1.10
	(0.42)	(0.62)	(0.84)	(0.98)	(0.82)	(1.27)	(0.74)	(0.99)	(1.06)	(1.45)	(0.88)	(1.30)
9	6.67	−4.83	6.54	−12.80	0.55	−0.79	22.69	32.44	4.30	−6.06	12.99	−1.70
	(0.43)	(0.62)	(0.88)	(1.08)	(0.73)	(1.13)	(0.69)	(0.93)	(1.21)	(1.66)	(1.02)	(1.55)
10a	13.41	3.23	6.58	−11.24	1.17	−2.93	24.04	34.75	−4.16	−12.66	10.23	−3.98
	(0.51)	(0.78)	(0.90)	(1.17)	(0.96)	(1.41)	(0.93)	(1.37)	(2.14)	(2.57)	(1.58)	(2.24)
10b (Positive Return)	23.98	11.13	9.01	−7.93	3.80	−3.59	21.50	36.37	−17.32	−16.83	7.57	−0.60
	(0.52)	(0.81)	(0.91)	(1.11)	(0.84)	(1.20)	(1.28)	(1.74)	(3.14)	(3.41)	(2.30)	(2.81)

- Individual investors display a U-shaped Buy-sell imbalance curve.

News Sorts

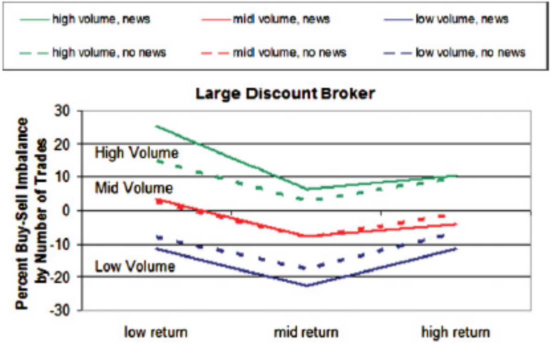


Buy-Sell Imbalances by Investor Type for Stocks Sorted on the Current Day's News

	Large discount brokerage		Large retail brokerage		Small discount brokerage		Momentum managers		Value managers		Diversified managers	
Partition	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance	Number imbalance	Value imbalance
Panel A: All Days												
News	9.35	0.07	16.17	−2.36	6.76	1.87	13.38	14.00	6.36	−0.24	6.21	2.26
	(0.72)	(0.86)	(1.29)	(1.32)	(0.48)	(0.72)	(1.33)	(1.71)	(1.59)	(2.05)	(1.11)	(1.50)
No News	2.70	−5.62	−1.84	−14.59	−0.66	−4.87	12.20	10.43	10.96	3.62	7.26	1.24
	(0.43)	(0.63)	(0.87)	(0.87)	(0.58)	(1.23)	(1.11)	(1.16)	(1.37)	(1.49)	(0.97)	(0.84)
Panel B: Positive Return Days												
News	1.74	−9.25	14.07	−7.74	1.14	−3.13	22.70	31.95	5.87	−1.01	7.80	3.92
	(0.94)	(1.07)	(1.04)	(1.25)	(0.64)	(0.95)	(1.50)	(2.10)	(1.94)	(2.65)	(1.31)	(2.00)
No News	−2.51	−14.31	1.76	−13.90	−4.49	−8.41	22.39	25.64	14.20	6.67	8.95	6.66
	(0.54)	(0.79)	(0.88)	(1.00)	(0.79)	(1.40)	(1.31)	(1.46)	(1.51)	(1.74)	(1.05)	(1.05)
Panel C: Negative Return Days												
News	17.39	10.91	15.59	3.17	13.77	9.32	3.94	−7.39	4.29	−2.41	4.72	2.24
	(0.83)	(1.12)	(1.58)	(1.43)	(0.71)	(1.08)	(1.43)	(2.11)	(2.09)	(2.77)	(1.30)	(2.25)
No News	8.86	3.85	−3.38	−13.57	4.35	1.29	0.68	−8.60	6.92	1.60	5.58	−4.11
	(0.53)	(0.81)	(0.88)	(0.85)	(0.77)	(1.42)	(1.25)	(1.46)	(1.52)	(1.89)	(1.03)	(1.23)
Panel C: Zero Return Days												
News	1.41	−5.90	−0.44	−8.74	1.58	−1.22	14.12	15.16	11.37	9.59	5.21	1.62
	(1.76)	(2.31)	(0.94)	(1.45)	(2.25)	(2.68)	(2.35)	(3.19)	(3.44)	(4.35)	(2.47)	(3.68)
No News	−0.95	−6.40	−14.49	−18.24	−3.27	−7.95	14.60	12.86	10.65	2.42	8.36	−0.17
	(0.68)	(1.13)	(1.06)	(1.08)	(1.35)	(2.04)	(1.38)	(1.81)	(1.73)	(2.49)	(1.27)	(1.84)

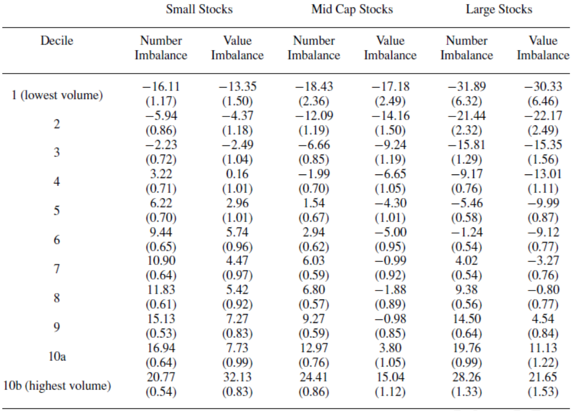
- Investors are more likely to be net buyers of stocks that are in the news than those that are not.
- Average BSI for individual investors is always greater on news days than no-news days.

Volume,return,and news sorts



- Consistent with the univariate sorts, BSI increases with abnormal volume for each return partition.

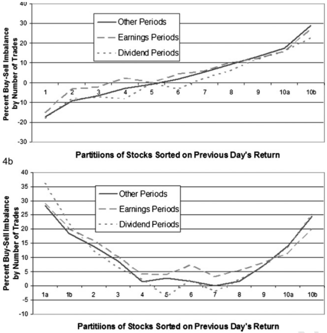
Robustness Test—Size Partitions



	Small Stocks		Mid Cap Stocks		Large Stocks	
Decile	Number Imbalance	Value Imbalance	Number Imbalance	Value Imbalance	Number Imbalance	Value Imbalance
1 (lowest volume)	−16.11 (1.17)	−13.35 (1.50)	−18.43 (2.36)	−17.18 (2.49)	−31.89 (6.32)	−30.33 (6.46)
2	−5.94 (0.86)	−4.37 (1.18)	−12.09 (1.19)	−14.16 (1.50)	−21.44 (2.32)	−22.17 (2.49)
3	−2.23 (0.72)	−2.49 (1.04)	−6.66 (0.85)	−9.24 (1.19)	−15.81 (1.29)	−15.35 (1.56)
4	3.22 (0.71)	0.16 (1.01)	−1.99 (0.70)	−6.65 (1.05)	−9.17 (0.76)	−13.01 (1.11)
5	6.22 (0.70)	2.96 (1.01)	1.54 (0.67)	−4.30 (1.01)	−5.46 (0.58)	−9.99 (0.87)
6	9.44 (0.65)	5.74 (0.96)	2.94 (0.62)	−5.00 (0.95)	−1.24 (0.54)	−9.12 (0.77)
7	10.90 (0.64)	4.47 (0.97)	6.03 (0.59)	−0.99 (0.92)	4.02 (0.54)	−3.27 (0.76)
8	11.83 (0.61)	5.42 (0.92)	6.80 (0.57)	−1.88 (0.89)	9.38 (0.56)	−0.80 (0.77)
9	15.13 (0.53)	7.27 (0.83)	9.27 (0.59)	−0.98 (0.85)	14.50 (0.64)	4.54 (0.84)
10a	16.94 (0.64)	7.73 (0.99)	12.97 (0.76)	3.80 (1.05)	19.76 (0.99)	11.13 (1.22)
10b (highest volume)	20.77 (0.54)	32.13 (0.83)	24.41 (0.86)	15.04 (1.12)	28.26 (1.33)	21.65 (1.53)

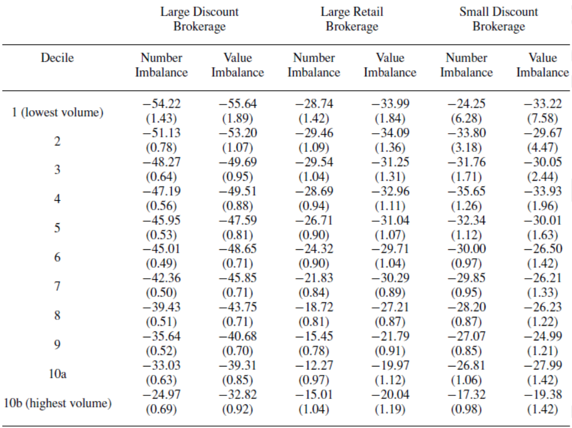
- Investors are likely to buy rather than sell attention-grabbing stocks regardless of size.

Robustness Test—Earnings and Dividend Announcements



- For volume, return and news sorts, BSI results are similar across three partitions.

Robustness Test—Short-Sale Constraints



	Large Discount Brokerage		Large Retail Brokerage		Small Discount Brokerage	
Decile	Number Imbalance	Value Imbalance	Number Imbalance	Value Imbalance	Number Imbalance	Value Imbalance
1 (lowest volume)	−54.22	−55.64	−28.74	−33.99	−24.25	−33.22
	(1.43)	(1.89)	(1.42)	(1.84)	(6.28)	(7.58)
2	−51.13	−53.20	−29.46	−34.09	−33.80	−29.67
	(0.78)	(1.07)	(1.09)	(1.36)	(3.18)	(4.47)
3	−48.27	−49.69	−29.54	−31.25	−31.76	−30.05
	(0.64)	(0.95)	(1.04)	(1.31)	(1.71)	(2.44)
4	−47.19	−49.51	−28.69	−32.96	−35.65	−33.93
	(0.56)	(0.88)	(0.94)	(1.11)	(1.26)	(1.96)
5	−45.95	−47.59	−26.71	−31.04	−32.34	−30.01
	(0.53)	(0.81)	(0.90)	(1.07)	(1.12)	(1.63)
6	−45.01	−48.65	−24.32	−29.71	−30.00	−26.50
	(0.49)	(0.71)	(0.90)	(1.04)	(0.97)	(1.42)
7	−42.36	−45.85	−21.83	−30.29	−29.85	−26.21
	(0.50)	(0.71)	(0.84)	(0.89)	(0.95)	(1.33)
8	−39.43	−43.75	−18.72	−27.21	−28.20	−26.23
	(0.51)	(0.71)	(0.81)	(0.87)	(0.87)	(1.22)
9	−35.64	−40.68	−15.45	−21.79	−27.07	−24.99
	(0.52)	(0.70)	(0.78)	(0.91)	(0.85)	(1.21)
10a	−33.03	−39.31	−12.27	−19.97	−26.81	−27.99
	(0.63)	(0.85)	(0.97)	(1.12)	(1.06)	(1.42)
10b (highest volume)	−24.97	−32.82	−15.01	−20.04	−17.32	−19.38
	(0.69)	(0.92)	(1.04)	(1.19)	(0.98)	(1.42)

- After short-sale constraints, individual investors are still attracted by the abnormal trading volumes.

1. Research Background
2. Data and Indicator
3. Empirical Results
4. **Conclusion**

Confirming the hypothesis that:

- Individual investors are more likely to buy rather than sell those stocks that catch their attention.
- This result is independent of size factors and special announcements.
- The above hypothesis is not valid for professional investors.

Thanks!