Attention-grabbing stocks and the behavior of individual investors in Brazil

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Abstract This study complements the existing literature on investor attention with three empirical findings. First, we show that low-activity individual investors are net buyers of stocks appearing on the headlines of news stories that convey no meaningful information about future returns. Second, we document that this buying pressure of some individuals following purely attention-grabbing articles leads to higher short-term returns. Finally, we provide evidence that investors who are more prone to purchase stocks after irrelevant news have poorer stock-picking performance. We hypothesize that individuals tend to narrow their choice set to alternatives that attract attention. Taken together, our findings suggest that the media, just by making some firms more salient, plays an important role in the allocation of individual investors’ attention in investment activities.

Keywords: Attention-grabbing stocks; Behavioral biases; Individual investors; News

JEL Code: G12, G40, G41.

1. Introduction

Standard rational economics usually assumes that a decision maker considers all feasible alternatives. When trading a stock, an individual should be able to weight the profitability prospects of thousands of available options. Attention is, however, a limited resource. As individual investors face time and cognitive constraints, it is possible that one would like to buy stock x, but chooses stock y instead or does not trade at all simply because he is not paying attention to x. But how do investors choose the stocks they look at? Unsophisticated retail investors rely heavily on public media to make trade decisions, since they do not have the time and financial resources to monitor the same information channels as professional investors. Media coverage is therefore a primary mechanism for attracting their attention. The key innovation of this paper is to show that media-driven attention in itself, that is, orthogonal to the release of meaningful information, affects individual investors’ trading behavior towards the cross-section of stocks.
Our empirical strategy is based on what we call “purely attention-grabbing” (PAG) news. These are news stories that make firms more salient without conveying any relevant information about future returns. Because identifying this kind of article is clearly challenging, we focus on two very specific categories. Importantly, they are published on a widely-followed financial news website, and the firm name always appears in the headline. In the first category, firms’ analysts make stock recommendations and give no new information about their own firm. The second category consists of recruitment process announcements, such as application deadlines, mainly for highly-selective trainee programs. We show that low-activity individual investors tend to be net buyers of stocks mentioned in PAG news. This result holds for three different definitions of low-activity investors, all of them comprising about 50% of all retail traders in the Brazilian stock market. We also document that PAG news places an economically-significant upward pressure on stock prices in the first 10 days after publication, and find no clear evidence of reversal afterwards.

From a theoretical perspective, our findings are in the spirit of Barber & Odean (2008), who argue that, in order to manage the problem of choosing from among thousands of possible stock purchases, individual investors limit their search to stocks that recently caught their attention. The same reasoning, however, does not apply to selling; individuals rarely short, and thus the option they pick for selling is one of the relatively few stocks held in their portfolios. As a result, their model predicts that retail traders are net buyers of stocks with attention-grabbing events. But what catches investors’ attention? Salience detection is the psychological mechanism that makes individuals focus their limited cognitive resources on the attributes that are more unusual or prominent with respect to a given frame. As Kahneman (2003) points out, salient impressions come to mind more spontaneously: “if a large green letter and a small blue letter are shown at the same time, “green” will come to mind first.” By the same token, a headline mentioning a firm attracts attention. When a stock receives more attention, it starts being considered in the investor’s choice set. One does not necessarily purchase every option that draws attention, but certainly more than those outside one’s attention.

Finally, how accurate is the stock-picking ability of individuals who tend to focus on attention-grabbing stocks? We use a data set that registers the daily trading activity of a 50% random sample of all individual investors in Brazil from 2012 to 2017, and calculate a responsiveness measure to PAG stories. We document that individuals who are more susceptible to buying stocks following PAG articles make purchases with much poorer performance

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1The same data set is used by Chague, De-Losso & Giovannetti (2019)
than those who are unresponsive to this kind of news.

The remainder of the paper is organized as follows. In Section 2 we discuss the literature related to salient stocks. In Section 3 we present our news data set and the concept of PAG news. Section 4 presents our individual investors’ trading data. We show the effect of salience on investors’ trading activity in Section 5. Section 6 shows that PAG news induces a short-term upward pressure on stock returns. Section 7 shows that individuals more prone to buy stocks following PAG news have worse stock-picking ability than others. Section 8 concludes.

2. Related research

This paper contributes to the vast literature on investors’ limited attention in financial markets.

Several studies document that media coverage is a primary channel for inducing trading activity. A striking example is in Huberman & Regev (2001): a Sunday New York Times article on a potential development of a new cancer cure made the prices of biotechnology stocks soar for weeks, even though the finding had already been reported in various popular newspapers (including the Times) more than five months earlier. Fang & Peress (2009) find that stocks with no media coverage earn higher returns than stocks with high media coverage, even after controlling for well-known risk factors. Engelberg & Parsons (2011) show that after an earnings announcement by an S&P 500 Index firm, trading in a given region is strongly related to whether the local paper covers the announcement or not. Fang, Peress & Zheng (2014) show that mutual funds tend to buy more stocks that receive heavy media coverage, and that their performance in the cross-section is negatively related to their propensity to buy such stocks. Solomon, Soltes & Sosyura (2014) document that investors allocate significantly more capital to funds holding media-covered stocks with high past returns, after controlling for fund returns and other fund characteristics. Kaniel & Parham (2017) find an increase in quarterly capital flows into mutual funds mentioned in a prominent Wall Street Journal ranking, compared to those funds which just missed making the list. Fedyk (2018) uses a natural experiment in prominent “front page” positioning of news on the Bloomberg terminal. News stories are first classified by editors as primary important or secondary important. Primary important stories are positioned on the top of the news feed, and replaced after a certain time. If there is no other primary important story to replace it, a secondary important story randomly makes it to the top of the feed. She finds that front page positioning induces 280% higher trading volumes and 180% larger price changes within the first ten minutes after news publication, followed by a strong drift...
for 30-45 minutes.

More specifically, our paper adds to prior studies on attention-grabbing events, such as abnormal trading volume (Gervais, Kaniel & Mingelgrin, 2001), extreme stock returns, index additions and deletions (Chen, Noronha & Singal, 2004), ranked stocks (Hartzmark, 2015), and media coverage. The common theme underlying this literature is that investors are more likely to buy stocks that have recently caught their attention, which in turn may lead to short-term abnormal returns. Barber & Odean (2008) argue that attention-constrained investors have to search through thousands of available options when buying a stock, but through only the small number of alternatives they hold when making a sell decision. They propose that to manage the underlying search problem of buying stocks, investors limit their choices to the stocks that recently caught their attention. As a result, investors are more likely to buy than sell attention-grabbing stocks. Related research shows that this higher buying activity, in turn, leads to higher stock returns in the short run, but lower subsequent returns. Seasholes & Wu (2007) provide evidence that this pattern arises after upper price limit events in China. Tetlock (2011) defines the staleness of a news story based on textual similarity to the previous ten stories about the same firm. He shows that on the day of stale news, investors are net buyers of the mentioned firm, and the stock return negatively predicts the return in the following week. He concludes that individuals overreact to stale news. Da, Engelberg & Gao (2011) use the Google Trends Search Volume Index as a direct measure of investor attention, and show that it predicts higher stock prices in the short run and price reversals in the long run. Lou (2014) finds that an increase in product-market advertising by a firm is accompanied by a contemporaneous rise in retail investors buying, higher abnormal stock returns, and subsequently by lower future returns. Kumar, Ruenzi & Ungeheuer (2020) show that, after being ranked as daily winner or loser, stocks suffer buying pressure from retail investors, subsequently underperforming unranked stocks.

Our paper contributes to the mentioned studies by providing evidence that

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Another strand of this literature relates salience to sell decisions. For example, Yuan (2015) uses record-breaking events for the Dow index as a pure market-wide attention event. He controls for the associated economic information by using returns and record occurrences of broader market indexes. He concludes that Dow record events predict both abnormally aggregate higher individual investor selling activities and the next-day return of the value-weighted NYSE–Amex index to be 19 basis points lower than average. His results are consistent with the idea that attention-constrained investors become more active and trade, subject to the disposition effect. Frydman & Wang (2020) use data from a Chinese brokerage company that started displaying to investors the paper gain/loss and break-even price on its online platform. They estimate that this salience shock causally increased the disposition effect by 17%.

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media coverage, without conveying any meaningful information, generates individual investors’ buying pressure, along with higher short-term returns. To the best of our knowledge, our paper is the first to show this result.

Finally, we add to the literature that investigates the behavior and stock-picking performance of individual investors (see Barber & Odean (2013) for a survey). As far as we know, we are also the first to show that individuals that are more susceptible to attention-grabbing tend to have poorer stock-picking ability.

3. Purely attention-grabbing news

Our financial news data set was collected by a web-crawling program from InfoMoney, a Brazilian news website that focuses on investing, business news and finance education. All its content is entirely free, and it is widely followed by retail investors, with around 27 million visits per month. Figure 1a shows InfoMoney’s Google Trends search volume index between January 2012 and February 2019. We also plot the search indexes of Ibovespa and PETR4 (Petrobras’s ticker symbol at Bovespa) as measures of investor attention to the stock market (Da et al. (2011)). As we can see, the level of interest for InfoMoney has an upward trend, and is above the two benchmarks during most of the period.

The data set contains the headlines of all news stories released by InfoMoney between January 2012 and December 2017, with a total of 313,863 observations. We are interested in stories mentioning publicly-traded Brazilian firms. To make sure that the mention is absolutely salient, we attribute a story to a firm if, and only if, the firm’s name appears in the headline. This definition results in 52,409 firm-article pairs, comprising 290 firms and 1737 days.

For a given firm, we say that a news story is purely attention-grabbing (PAG) if it draws investors’ attention to the firm without conveying any meaningful information about its future returns. Identifying such stories is obviously challenging, and because of this, we restrict our analysis to two very specific categories of articles. The first class of articles we consider consists of firms’ analysts making stock recommendations. These articles are hand-picked among those that mention publicly-traded financial institutions that cover stocks: Itaú-Unibanco, Banco do Brasil, Bradesco and Banco Santander. For instance: “Itaú recommends 4 stocks in the retail sector” brings no new information about Itaú itself, but only Itaú’s perspectives for some

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3https://www.infomoney.com.br/negocios/grandes-empresas/noticia/7692442/
infomoney-foi-o-site-de-economia-mais-lido-em-setembro-no-brasil

4“Itaú lista 4 ações que deverão ser bom investimento no setor de varejo”, 3/21/2013.
Figure 1

(a) InfoMoney Google Trends Search Volume Index: This figure compares the Google Trends search volume indexes of InfoMoney, Ibovespa (Bovespa’s benchmark index) and PETR4 (Petrobras’s ticker symbol at Bovespa). One can consult the quotes of Ibovespa and Petrobras simply by searching for these two terms on Google, which makes their indexes good proxies for the general level of interest in the stock market. InfoMoney experienced an upward trend and was above the two references during most of the period.

(b) Average Trading Volume Around a PAG news release: This figure reports the trading volume around a PAG news release (day 0). For each stock-day, $V_{s,t}$ is the financial volume of stock $s$ on day $t$, standardized by stock. We compute the averages of $V_{s,t}$ across all stocks for each day around the PAG news from 10 days before to 10 days after the publication, with a 95% confidence interval. There is no evidence of an abnormal trading volume around a PAG news publication. In particular, between days 0 and +6 trading volumes are actually below average.
firms. The second class considered are recruitment news, such as: “Vale Trainee Program application deadline is tomorrow.”\(^5\) These recruitment processes are, in general, annual and highly selective, which makes them widely-known and with no significant impact on firms’ payroll. Hence, there is no reason to believe they carry any relevant information about the future.

We get a total of 932 unique firm-day-PAG article observations. 837 are stock recommendations and 95 are recruitment news. A sample of these articles is presented in Table 1. Table 2 shows the distribution of articles by firm and Table 3 presents the distribution over time.

One possible concern is that PAG news stories are correlated with the release of meaningful information. We provide evidence that this seems not to be the case. Figure 1b reports the trading volume around a PAG news release (day 0). For each stock-day we compute \( V_{s,t} \), the financial volume of stock \( s \) on day \( t \), standardized by stock. We compute the averages of \( V_{s,t} \) across all stocks for each day around the PAG news release from 10 days before to 10 days after the publication, along with 95% confidence interval. There is no evidence of an abnormal trading volume around a PAG news publication. In particular, between days 0 and +6 trading volumes are actually below average.

### 4. Individual investors transactions

Our individual investors data set (the same used by Chague et al. (2019)) contains the trading activity of a 50% random sample of all individual investors in the Brazilian stock market between January 2012 and August 2017. It comes from “Comissão de Valores Mobiliários” (CVM), the Brazilian equivalent to the Securities and Exchange Commission (SEC) in the US. Since our data come from the regulator of the Brazilian financial market, they are extremely reliable. The observations are at the level investor-stock-day, and we observe the quantity of shares the investor buys and sells.

The sample contains 16,890,277 individual-stock-day observations, excluding day-trades, which are the result of the trading activity of 362,957 individual investors on 393 different stocks. In Table 4, Panel A shows the evolution of these numbers over the years. Panel B reports the empirical distribution, at the individual level, and for selected percentiles, of the total number of trades, purchases, sales, number of days with trade and number of different stocks traded. The median investor in our sample made 4 purchases, 4 sales and traded 3 different stocks on 6 different days between 2012 and 2017.

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\(^5\)“Prazo para se inscrever no programa de estágio da Vale termina amanhã,” 04/09/2013
Table 1
Purely Attention-Grabbing News Sample

Panel A: This table shows a random sample of 20 stock recommendation news articles, in which firms’ analysts make stock recommendations and give no new information about their own firm. Panel B: This table shows a random sample of 20 recruitment news articles. They are generally related to news about trainee and internship programs. These recruitment processes are periodic and highly selective, which makes them widely-known and with no significant impact on firms’ payroll. Hence, they carry no new information about future returns.

### Panel A: Stock Recommendations

| date       | firm  | headline                                                                                                                                 |
|------------|-------|------------------------------------------------------------------------------------------------------------------------------------------|
| 2012/09/26 | BBDC  | Lucro da Multiplus aumentará com real mais fraco, diz Bradesco BBI                                                                       |
| 2012/12/10 | BBAS  | BB inicia cobertura de Abril Educação com recomendação de compra                                                                           |
| 2013/07/29 | BBDC  | Bradesco/Ágora eleva preço alvo das ações da Iguatemi                                                                                 |
| 2013/08/05 | ITUB  | Ação da Hypermarcas sobe 2%; Itaú eleva recomendação após balanço do 2º tri                                                            |
| 2014/05/19 | SANB  | Por que a ação da dona do Posto Ipiranga caiu 4%? Pergunta para o Santander                                                              |
| 2014/12/16 | BBDC  | Ágora/Bradesco recomenda ações “arrojadas” para dezembro; veja carteira                                                                   |
| 2014/12/17 | BBDC  | 5 ações para lucrare com dividendos, segundo a Ágora/Bradesco                                                                            |
| 2015/02/11 | SANB  | Investimento para emergentes ainda é grande, diz economista do Santander                                                                 |
| 2015/07/27 | BBAS  | BB Investimentos analisa resultados e recomenda compra de Fibria                                                                           |
| 2015/08/17 | BBAS  | BB Investimentos recomenda compra de ação e espera alta de 114%                                                                          |
| 2015/11/17 | BBAS  | BB Investimentos coloca ações da Gol como “underperform” e avisa: “turbulência”                                                           |
| 2015/11/30 | SANB  | Santander Corretora recomenda educacionais mesmo em cenário complicado                                                                     |
| 2015/12/01 | BBDC  | Bradesco BBI rebaixa recomendação de Embraer; “alto valuation”                                                                         |
| 2015/12/10 | BBDC  | Bradesco BBI corta recomendação e preço-alvo do Pão de Açúcar                                                                           |
| 2016/01/04 | BBAS  | BB Investimentos recomenda 8 ações para você comprar no começo do ano                                                                   |
| 2016/02/17 | BBAS  | BB Investimentos recomenda ação fora do radar e espera alta de 65%; veja qual                                                           |
| 2015/04/11 | SANB  | Santander Corretora recomenda 8 ações em carteira de dividendos                                                                           |
| 2016/09/21 | BBDC  | Análise do Carf sobre caso BM&F deve gerar “ruído”, diz Bradesco BBI em relatório                                                          |
| 2015/07/27 | BBAS  | BB Investimentos recomenda 7 ações para investir este mês                                                                               |
| 2017/04/13 | BBDC  | Ação “com desconto” pode ter upside de 81%, diz Bradesco                                                                                 |

### Panel B: Recruitment News

| date       | firm  | headline                                                                                                                                 |
|------------|-------|------------------------------------------------------------------------------------------------------------------------------------------|
| 2012/07/18 | ITUB  | Itaú Unibanco oferece 70 vagas em Programa de Trainee 2013                                                                            |
| 2012/11/07 | SANB  | Santander abre 188 vagas para trainee de agência                                                                                         |
| 2013/03/01 | BBAS  | Banco do Brasil abre concurso para escriturário em seis estados                                                                         |
| 2013/03/18 | LREN  | Lojas Renner oferece 63 vagas em programa de trainee                                                                                     |
| 2013/04/05 | VIVT  | Vivo abre programa de estágio com 50 vagas e bolsa-auxílio de R$ 1,2 mil                                                                  |
| 2014/03/20 | BBAS  | Inscrição para concurso do BB termina nesta quinta; salários chegam a R$ 8,7 mil                                                        |
| 2015/01/05 | BBAS  | Banco do Brasil abre concurso público em 15 estados do país                                                                             |
| 2015/01/20 | PETR  | Petrobras divulga resultado de processo seletivo para 663 vagas                                                                         |
| 2015/05/28 | ABEV  | Ambev, BTG Pactual e Lojas Americanas estão com vagas abertas; confira                                                                    |
| 2015/07/28 | ABEV  | Ambev abre inscrição para programa de trainee com salário inicial de R$ 5,500                                                            |
| 2015/08/04 | ITUB  | Itaú e Itaú BBA abrem inscrições para programas de traine                                                                                 |
| 2016/02/01 | PETR  | Escolha do representante dos funcionários no Conselho da Petrobras terá 2º turno                                                        |
| 2016/08/01 | ITUB  | Itaú abre inscrições para o novo programa de trainee                                                                                     |
| 2016/08/31 | ELPL  | AES Tietê e Eletropaulo abrem inscrições para trainee; confira benefícios                                                              |
| 2016/08/31 | TITET | AES Tietê e Eletropaulo abrem inscrições para trainee; confira benefícios                                                              |
| 2016/09/16 | SANB  | Santander oferece bolsas de estudos para brasileiros em 21 países                                                                     |
| 2017/02/07 | VIVT  | Os salários dos funcionários da Vivo em 20 cargos                                                                                  |
| 2017/03/07 | ABEV  | Ambev abre inscrições para programa de trainee; salário inicial é de R$ 5,800                                                            |
| 2017/08/03 | SANB  | Santander Universidades oferece 100 bolsas de estudo em 20 países                                                                    |
| 2017/08/15 | PETR  | Petrobras abre inscrições para 954 vagas com salários de até R$ 9,7 mil                                                                 |
Table 2
**Distribution of Purely Attention-Grabbing News by Firm**

This table shows the distribution of purely attention-grabbing news by firm, separated by stock recommendations and recruitment news.

| (number of news articles) | recruitment news | stock recommendations |
|--------------------------|------------------|-----------------------|
| ABEV                     | 15               |                       |
| BBAS                     | 16               | 186                   |
| BBDC                     | 1                | 221                   |
| BRFS                     | 2                |                       |
| CIEL                     | 1                |                       |
| CRUZ                     | 1                |                       |
| CYRE                     | 1                |                       |
| ELPL                     | 1                |                       |
| ITUB                     | 14               | 152                   |
| JBSS                     | 1                |                       |
| LAME                     | 1                |                       |
| LREN                     | 2                |                       |
| NATU                     | 1                |                       |
| OIBR                     | 2                |                       |
| PETR                     | 20               |                       |
| SANB                     | 7                | 278                   |
| SUZB                     | 1                |                       |
| TELB                     | 1                |                       |
| TIET                     | 1                |                       |
| VALE                     | 1                |                       |
| VIVT                     | 3                |                       |
| WHRL                     | 2                |                       |
| **Total**                | **95**           | **837**               |

5. Low-activity individuals tend to be net buyers of stocks with PAG news

In this section we show that low-activity individual investors tend to be net buyers of stocks that become more salient after PAG news.

Under our null hypothesis, news articles that do not convey any relevant information about future returns should not affect the behavior of traders. However, the release of a story mentioning a firm in its headline in a widely-followed financial news website makes the stock more salient, even with no relevant information attached. We test the null against the alternative that salience leads individuals to be net buyers of PAG stocks, as argued by Barber & Odean (2008).

For each firm and day, we say that an individual is a net buyer (seller) if the difference between the quantity of shares bought and sold are greater (less) than zero. #Buyers$_{s,t}$ and #Sellers$_{s,t}$ are defined as the total number of investors that are net buyers (sellers) of stock $s$ on day $t$. #Imbal$_{s,t}$ is the indi-
Table 3

Distribution Over Time of Purely Attention-Grabbing News

This table presents the distribution (absolute frequency) over time of the 932 purely attention-grabbing news articles.

| (number of news articles) | recruitment news | stock recommendations |
|---------------------------|-------------------|-----------------------|
| 2012                      | 14                | 99                    |
| 2013                      | 14                | 136                   |
| 2014                      | 22                | 150                   |
| 2015                      | 15                | 167                   |
| 2016                      | 13                | 192                   |
| 2017                      | 17                | 99                    |
| January                   | 10                | 80                    |
| February                  | 10                | 70                    |
| March                     | 13                | 73                    |
| April                     | 6                 | 57                    |
| May                       | 8                 | 64                    |
| June                      | 1                 | 67                    |
| July                      | 11                | 71                    |
| August                    | 18                | 71                    |
| September                 | 3                 | 82                    |
| October                   | 5                 | 77                    |
| November                  | 5                 | 74                    |
| December                  | 5                 | 57                    |
| Monday                    | 25                | 168                   |
| Tuesday                   | 18                | 162                   |
| Wednesday                 | 20                | 177                   |
| Thursday                  | 14                | 167                   |
| Friday                    | 18                | 168                   |
| Sunday                    | 1                 | 1                     |
| Total                     | 95                | 843                   |

vidual investors trade imbalance, which is the difference between \(\#Buyers_{s,t}\) and \(\#Sellers_{s,t}\), standardized by stock. Positive values of \(\#Imbal_{s,t}\) indicate that individual investors, as a group, are aggressive buyers of shares in firm \(s\) on day \(t\).

Table 4 shows that there is a huge heterogeneity in the trading behavior of Brazilian investors. The median individual makes only 8 purchases or sales in a 6-year period, while the investor in the 75th percentile makes a total of 33 trades, and diversifies his portfolio three times more, as measured by the number of different stocks traded. Hence, although retail traders are thought to be uninformed, on average, we cannot rule out that some of them are informed, more active and less susceptible to attention-grabbing. To account for this, we consider four sub-samples, each corresponding to a quartile of individuals sorted according to three different measures of trading activity: total number of trades, number of different stocks traded and number of days.
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Table 4
Individual investors’ trading activity

This table shows descriptive statistics of the individual investors’ trading activity. **Panel A** reports the number of investors, the number of purchases and the number of sales per year. **Panel B** reports the empirical distribution, at the individual level, and for selected percentiles, of the total number of trades, purchases, sales, number of days with trade and number of different stocks traded.

**Panel A: Individuals’ aggregate trading activity**

|        | # of investors | # of purchases | # of sales |
|--------|----------------|----------------|------------|
| 2012   | 140,417        | 1,592,857      | 1,474,002  |
| 2013   | 152,884        | 1,524,576      | 1,322,661  |
| 2014   | 127,470        | 1,277,503      | 1,055,138  |
| 2015   | 123,393        | 1,334,481      | 1,053,150  |
| 2016   | 148,383        | 1,970,179      | 1,592,330  |
| 2017   | 142,234        | 1,480,946      | 1,212,454  |
| 2012-2017 | 362,957     | 9,180,542      | 7,709,735  |

**Panel B: Individual-level variable distributions**

|                      | percentile |
|----------------------|------------|
|                      | 5  | 10 | 25 | 50 | 75 | 90 | 95 | 99 |
| total number of trades | 1  | 2  | 8  | 33 | 99 | 185| 579 |
| total number of purchases | 0  | 0  | 0  | 4  | 19 | 56 | 103| 312|
| total number of sales | 0  | 1  | 1  | 4  | 14 | 44 | 84 | 270|
| number of days with trade | 1  | 1  | 2  | 6  | 24 | 67 | 119| 330|
| number of different stocks traded | 1  | 1  | 1  | 3  | 10 | 23 | 34 | 65 |

To test our hypothesis, we create the dummy variable $PAG_{s,[t-2,t]}$ that assumes value 1 if a purely attention-grabbing news about firm $s$ is released between $t - 2$ and $t$. This 3-day window is considered in order to account for a potentially delayed response of individuals to news (Chan (2003), Frazzini (2006), Hirshleifer, Lim & Teoh (2009), Dellavigna & Pollet (2009) and Ben-Rephael, Da & Israelsen (2017)). We then regress $\#Imbal_{s,t}$, for each quartile of trading activity, on $PAG_{s,[t-2,t]}$. If individual investors usually engage in contrarian strategies (as documented by Choe, Kho & Stulz (1999), Grinblatt & Keloharju (2000), Kaniel, Saar & Titman (2008), and Foucault, Sraer & Thesmar (2011)), we could observe increased buying (selling) activity by individuals on the days following negative (positive) returns. We thus include, as additional controls, the lagged stock returns $R_{s,-h}$, with $h = 5$, 20 and 120 trading days. Standard errors are clustered by firm.

Table 5 presents the results for the trading activity measured by the total number of trades in the sample period. PAG news increases the number of net buyers per stock by 0.0534 standard deviations in the first quartile and 0.0456 in the second quartile. Table 6 shows the results for the trading activity...
Chague et al., 2020

Table 5
Low-activity individual investors tend to be net buyers of stocks with PAG news (I)

For each firm and day, we say that an individual is a net buyer (seller) if the difference between the quantity of shares bought and sold are greater (less) than zero. \#Buyers_{st} and \#Sellers_{st} are defined as the total number of investors that are net buyers (sellers) of stock s on day t. \#Imbal_{st} is the individual investors trade imbalance, which is the difference between \#Buyers_{st} and \#Sellers_{st}, standardized by stock. We consider four sub-samples, each corresponding to a quartile of individuals sorted according to their trading activity, measured by the total number of trades they made between 2012 and 2017. Q1 denotes the quartile containing individuals with the lowest trading activity, and Q4, the highest. In order to test our hypothesis that the attention-grabbing effect of a news release, in itself, leads investors to be net buyers of the mentioned stocks, we create the dummy variable \text{PAG}_{st}^{[-\Delta t, t]} that assumes value 1 if purely attention-grabbing news about firm s is released between \(t - \Delta t\) and \(t\). We regress \#Imbal_{st} on \text{PAG}_{st}^{[-\Delta t, t]} and include, as additional controls, the lagged stock returns \(R_{s,h}\), with \(h = 5, 20\) and 120 trading days. \(t\) statistics in parentheses. Standard errors are clustered by firm. * p<0.10, ** p<0.05, *** p<0.01

| quartile (total number of trades) | Q1   | Q2   | Q3   | Q4   |
|----------------------------------|------|------|------|------|
| \(R_{s,-5}\)                     | -0.00246 | -0.00193 | -0.00240** | -0.00566 |
| \((-1.52)\)                      | \((-1.56)\) | \((-2.02)\) | \((-1.51)\) | |
| \(R_{s,-20}\)                   | -0.000174 | -0.00137 | -0.00156** | -0.000943 |
| \((-0.78)\)                      | \((-1.56)\) | \((-2.41)\) | \((-1.24)\) | |
| \(R_{s,-120}\)                  | 0.00120*** | 0.000656 | -0.000141 | -0.00234*** |
| \((4.54)\)                       | \((1.37)\) | \((-0.26)\) | \((-3.42)\) | |
| \(\text{PAG}_{s,[\Delta t -2,t]}\) | 0.0534*** | 0.0456* | 0.000581 | -0.0159 |
| \((3.00)\)                       | \((1.66)\) | \((0.03)\) | \((-0.97)\) | |
| constant                         | 0.00136** | 0.00144*** | 0.00142*** | 0.00148*** |
| \((2.49)\)                       | \((3.09)\) | \((3.23)\) | \((3.81)\) | |
| observations                     | 418,668 | 424,582 | 430,010 | 439,080 |
| R2                               | 0.000 | 0.000 | 0.000 | 0.000 |

The effect is an increase in the number of net buyers in the first quartile of 0.0654 standard deviations. The effect is of +0.0672 in the first quartile and +0.0469 in the second quartile. We therefore conclude that low-activity individuals tend to be net buyers of stocks with PAG news. In contrast, in the two upper quartiles, PAG news stories have no effect. This result is intuitive: individuals who rarely trade stocks are more likely to be inattentive to the stock market, and thus are the ones that are more susceptible to the attention-grabbing effect when buying. On the other hand, high-activity investors are more likely to be skilled and attentive to news. As consequence, PAG stories have no impact on them.
Table 6
Low-activity individual investors tend to be net buyers of stocks with PAG news (II)

For each firm and day, we say that an individual is a net buyer (seller) if the difference between the quantity of shares bought and sold are greater (less) than zero. #Buyers,s,t and #Sellers,s,t are defined as the total number of investors that are net buyers (sellers) of stock s on day t. #Imbal,s,t is the individual investors trade imbalance, which is difference between #Buyers,s,t and #Sellers,s,t, standardized by stock. We consider four sub-samples, each corresponding to a quartile of individuals sorted according to their trading activity, measured by the number of different stocks traded by them between 2012 and 2017. Q1 denotes the quartile containing individuals with the lowest trading activity, and Q4, the highest. In order to test our hypothesis that the attention-grabbing effect of a news release, in itself, leads investors to be net buyers of the mentioned stocks, we create the dummy variable $PAG s,[t−2],t$ that assumes value 1 if a purely attention-grabbing news item about firm s is released between $t−2$ and $t$. We regress #Imbal,s,t on $PAG s,[t−2],t$ and include, as additional controls, the lagged stock returns $R s,−h$, with $h = 5, 20$ and 120 trading days. $t$ statistics in parentheses. Standard errors are clustered by firm.

| quartile | Q1          | Q2          | Q3          | Q4          |
|---------|-------------|-------------|-------------|-------------|
| $R s,−5$| -0.00258*   | -0.00514**  | -0.00388**  | -0.00495    |
|         | (-1.95)     | (-2.33)     | (-2.15)     | (-1.38)     |
| $R s,−20$| -0.000759*  | -0.00135*   | -0.00119*   | -0.00107    |
|         | (-1.87)     | (-1.81)     | (-1.71)     | (-1.40)     |
| $R s,−120$| 0.000572*** | 0.000579    | -0.000394   | -0.00227*** |
|         | (1.67)      | (1.13)      | (-0.63)     | (-3.45)     |
| $PAG s,[t−2],t$ | 0.0654***     | -0.0138     | -0.00375    | -0.0111     |
|         | (2.63)      | (-0.62)     | (-0.19)     | (-0.74)     |
| constant | 0.000375    | 0.00143***  | 0.00156***  | 0.00149***  |
|         | (0.72)      | (3.34)      | (3.56)      | (3.87)      |
| observations | 413,319      | 423,358     | 428,277     | 439,080     |
| R2     | 0.000       | 0.000       | 0.000       | 0.000       |

6. Purely attention-grabbing news predicts higher short-term returns

Since a large group of individual investors tend to be net buyers of PAG stocks, temporary movements in stock prices may arise as a consequence. To test this hypothesis, let $PAG s,t$ be a dummy variable that assumes value 1 if a purely attention-grabbing news about firm s is released on day t. We regress future raw returns $R s,h$ on $PAG s,t$ and fixed-effects by firm, with $h = 1, 5, 10, 20, 40$, and 60 trading days ahead of the story release. Standard errors are clustered by firm. Panel A of Table 8 presents the results. A PAG news story predicts stock returns that are 42.0 bps higher 5 days ahead and 44.2 bps higher 10 days ahead. From 20 days on, the impact on returns is indistinguishable from zero. We thus have that salience produces a temporary
Table 7
Low-activity individual investors tend to be net buyers of stocks with PAG news (III)

For each firm and day, we say that an individual is a net buyer (seller) if the difference between the quantity of shares bought and sold are greater (less) than zero. #Buyers_{st} and #Sellers_{st} are defined as the total number of investors that are net buyers (sellers) of stock s on day t. #Imbal_{st} is the individual investors trade imbalance, which is the difference between #Buyers_{st} and #Sellers_{st}, standardized by stock. We consider four sub-samples, each corresponding to a quartile of individuals sorted according to their trading activity, measured by the total number of different days with trade between 2012 and 2017. Q1 denotes the quartile containing individuals with the lowest trading activity, and Q4, the highest. In order to test our hypothesis that the attention-grabbing effect of a news release, in itself, leads investors to be net buyers of the mentioned stocks, we create the dummy variable PAG_{[t-2,t]} that assumes value 1 if a purely attention-grabbing news item about firm s is released between t − 2 and t. We regress #Imbal_{st} on PAG_{[t-2,t]} and include, as additional controls, the lagged stock returns R_{s,-h}, with h = 5, 20 and 120 trading days. t statistics in parentheses. Standard errors are clustered by firm.

* p<0.10, ** p<0.05, *** p<0.01.

| quartile (number of days with trade) | Q1     | Q2     | Q3     | Q4     |
|-------------------------------------|--------|--------|--------|--------|
| R_{s,-5}                            | -0.00250 | -0.00107 | -0.00193** | -0.00582 |
|                                    | (-1.53) | (-0.81) | (-2.33) | (-1.51) |
| R_{s,-20}                           | -0.000110 | -0.00129 | -0.00144** | -0.001000 |
|                                    | (-0.47) | (-1.49) | (-2.19) | (-1.29) |
| R_{s,-120}                          | 0.00172*** | 0.000693 | 0.0000514 | -0.00240*** |
|                                    | (5.73)  | (1.46)  | (0.10)  | (-3.54)  |
| PAG_{[t-2,t]}                       | 0.0672** | 0.0469** | 0.00208 | -0.0160 |
|                                    | (2.58)  | (2.09)  | (0.09)  | (-0.97)  |
| constant                            | 0.00136** | 0.00145*** | 0.00138*** | 0.00150*** |
|                                    | (2.38)  | (3.04)  | (3.19)  | (3.81)  |
| observations                        | 424,205 | 423,967 | 428,617 | 439,080 |
| R2                                 | 0.000   | 0.000   | 0.000   | 0.000   |

upward pressure on stock prices.

We now break down stock returns by time intervals after the news release. Let R_{s,[j,k]} be the raw return of firm s from t + j to t + k, relative to the PAG news event that occurs on t. The following intervals are considered: [−1,0], [0,1], [1,3], [3,5], [5,10], [10,20], [20,40], [40,60]. R_{s,[j,k]} is then regressed, for each of the mentioned intervals, on PAG_{s,t} and fixed-effects by firm. Standard errors are also clustered by firm. Panel B of Table 8 shows the results. PAG_{s,t} is associated with higher returns between days [1,3], +13.1 bps, and [3,5], +20.8 bps, after the publication, ceasing thereafter. Because the positive effect in returns is salience-driven, with no fundamental value-relevant information, one might expect that PAG_{s,t} predicted a negative impact on returns in longer horizons. However, we find no statistically-significant evidence of
7. **Individuals more susceptible to PAG news have poorer stock-picking performance**

In this section we show that individual investors who tend to buy a stock following a PAG news story have worse stock-picking ability than others.

To get a representative sample at the individual level, we select the 30,550 investors in our data set who have at least 50 purchases between January 2012 and August 2017. Our measure of responsiveness to PAG news is the following. For each individual \( i \) and day \( t \), let \( \text{Purchase}_{i,s,[t,t+2]} \) assume value 1 if \( i \) purchases stock \( s \) between \( t \) and \( t+2 \), and 0 otherwise. If \(#\text{Purchases}_{i}\) is \( i \)'s total number of purchases in the sample period, we define \( N_{PAG,i} \) as:

\[
N_{PAG,i} = \frac{\sum_s \sum_t \text{PAG}_{s,t} \times \text{Purchase}_{i,s,[t,t+2]}}{\#\text{Purchases}_{i}}
\]

(1)

\( N_{PAG,i} \) measures the representativeness of individual’s purchases following PAG news stories, with respect to his total number of purchases. The higher \( N_{PAG,i} \) is, the more responsive the individual is to PAG news. Table 9 shows that the 5\(^{th}\), 25\(^{th}\), 50\(^{th}\), 75\(^{th}\), and 95\(^{th}\) percentiles of \( N_{PAG,i} \) are 0%, 0.7%, 2.04%, 4.21% and 9.52%, respectively.

For each individual, we then calculate the average return of his purchases both including (\( \bar{R}_{i,h} \)) and excluding (\( \overline{R}_{i,h} \)) PAG news purchases, i.e., purchases in which \( \text{Purchase}_{i,s,[t,t+2]} = 1 \). The horizons we consider are \( h = 5, 10, 20, 40, 60, 120, \) and \( 240 \) trading days. \( \bar{R}_{i,h} \) and \( \overline{R}_{i,h} \) are regressed on \( N_{PAG,i} \) and we include as controls: volume (in 1000's), the average volume across all purchases by individual \( i \) during 2012-2017, in thousands of Brazilian reais (R$); \# of months the number of months the investor was active (bought and/or sold a stock) in the stock market during 2012-2017; \# of days, the number of days the investor was active in the stock market during 2012-2017.

The results are presented in Table 10. Excluding PAG news-related purchases (Panel B), the average return of an investor with median responsiveness to PAG news (\( N_{PAG,i} = 2.04\% \)) is -67 bps lower for \( h=60 \), -142 bps lower for \( h=120 \) and -257 bps lower for \( h=240 \). In percentage terms, the expected performance of the median investor (the one with median values of \# of months, volume (in 1000's), \# of days and \( N_{PAG,i} \)) compared to the expected performance of an investor with the same characteristics, but with no responsiveness to PAG news (\( N_{PAG,i} = 0\% \)) is -14\% for \( h=60 \), -15\% for \( h=120 \).
Table 8

Purely attention-grabbing news predicts higher short-term returns

This table shows that PAG news inflates short-term stock returns. In Panel A we regress future returns $R_{s,h}$ on $PAG_{s,t}$ and fixed-effects by firm, with $h = 1, 5, 10, 20, 40,$ and $60$ trading days after the story release. In Panel B, we break stock returns by time intervals. Let $R_{s,[j,k]}$ be the return of firm $s$ between $j$ days and $k$ days after a PAG news publication. The following intervals are considered: $[−1,0], [0,1], [1,3], [3,5], [5,10], [10,20], [20,40], [40,60]$. $R_{s,[j,k]}$ is then regressed, for each of the mentioned intervals, on $PAG_{s,t}$ and fixed-effects by firm. In both regressions, standard errors are clustered by firm. $t$ statistics in parentheses. Standard errors are clustered by firm. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

| Panel A          | $R_{s,1}$   | $R_{s,5}$   | $R_{s,10}$   | $R_{s,20}$   | $R_{s,40}$   | $R_{s,60}$   |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| $PAG_{s,t}$      | 0.000737    | 0.00420***  | 0.00442***  | 0.00557     | 0.00654     | 0.00377     |
|                  | (0.85)      | (3.18)      | (3.10)      | (1.31)      | (1.21)      | (0.77)      |
| constant         | 0.00474***  | 0.0131***   | 0.0271***   | 0.0450***   | 0.0845***   | 0.121***    |
|                  | (2618.16)   | (4742.44)   | (9099.06)   | (5062.90)   | (7455.24)   | (11807.84)  |
| observations     | 445,724     | 445,505     | 445,180     | 444,597     | 443,777     | 442,158     |
| R2               | 0.001       | 0.003       | 0.006       | 0.010       | 0.020       | 0.029       |

| Panel B          | $R_{s,[−1,0]}$ | $R_{s,[0,1]}$ | $R_{s,[1,3]}$ | $R_{s,[3,5]}$ | $R_{s,[5,10]}$ | $R_{s,[10,20]}$ | $R_{s,[20,40]}$ | $R_{s,[40,60]}$ |
|------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| $PAG_{s,t}$      | 0.000631       | 0.000737      | 0.00131**     | 0.00208***    | 0.000339      | 0.00102       | 0.000678      | -0.00314      |
|                  | (1.48)         | (0.85)        | (1.98)        | (5.11)        | (0.79)        | (0.25)        | (0.38)        | (-0.97)       |
| constant         | 0.00474***     | 0.00474***    | 0.00654***    | 0.00321***    | 0.0158***     | 0.0215***     | 0.0476***     | 0.0489***     |
|                  | (5354.23)      | (2618.16)     | (4737.80)     | (3764.97)     | (17646.54)    | (2541.76)     | (12691.05)    | (7145.71)     |
| observations     | 445,756        | 445,724       | 445,603       | 445,505       | 445,180       | 444,597       | 443,377       | 442,158       |
| R2               | 0.001          | 0.001         | 0.001         | 0.001         | 0.003         | 0.004         | 0.010         | 0.010         |
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Table 9
Distribution of the responsiveness to PAG news

This table shows the distribution of $N_{PAG,i}$ for selected percentiles. $N_{PAG,i}$ is calculated for 30,550 investors who have at least 50 purchases between January 2012 and August 2017 and indicates the representatives of the purchases following a PAG news story, with respect to $i$’s total number of purchases. We also present the distribution of the variables included as controls in our regressions: *volume* (in 1000’s), the average volume across all purchases by individual $i$ during 2012-2017, in thousands of Brazilian reais (R$); *# of months* the number of months the investor was active (bought and/or sold a stock) in the stock market during 2012-2017; *# of days*, the number of days the investor was active in the stock market during 2012-2017.

| percentile | 5   | 10  | 25  | 50  | 75  | 90  | 95  | 99  |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|
| $N_{PAG,i}$ | 0   | 0   | 0.0072993 | 0.0204082 | 0.0421941 | 0.0707071 | 0.0952381 | 0.1692308 |
| volume (in 1000’s) | .2244898 | .3185185 | .6384615 | 1.444899 | 3.743036 | 9.713223 | 18.96532 | 198.1305 |
| # of days | 73  | 82  | 103  | 147  | 240  | 420  | 597  | 1046 |
| # of months | 13  | 17  | 24  | 35  | 48  | 60  | 65  | 68  |

and -13% for $h=240$. Results are similar including PAG purchases (Panel A).

8. Conclusion

This study complements the existing literature on investor attention with three empirical findings.

First, we show that low-activity individual investors are net buyers of stocks that appear in news stories that carry no meaningful information about future returns. We attribute this result to the “attention-grabbing effect,” described by Barber & Odean (2008): cognitive-constrained investors have a higher propensity to buy salient stocks. This effect has broad empirical support in the literature. But since individuals tend to rely heavily on public media, our result is of particular importance. It explicitly shows that news might impact retail investors’ decisions not only by conveying novel information, but also by drawing attention to mentioned firms. The underlying behavioral mechanism is consistent with recent theoretical models that assume the existence of a limited-attention agent who first restricts his choice to a subset of feasible alternatives that catches his attention, called the consideration set, and then picks his preferred item from within this subset (Masatlioglu, Nakajima & Ozbay (2012), Manzini & Mariotti (2014), Lleras, Masatlioglu, Nakajima & Ozbay (2017), Caplin, Dean & Leahy (2019)). Under this framework, when a firm is mentioned in the news, it joins the consideration set of some individuals. Even though investors do not necessarily buy every considered candidate, they are unlikely to pick alternatives that are out of the limelight. In contrast, they only sell the alternatives they own in their portfolios. As a result, they are net buyers of attention-grabbing stocks.
Table 10

Individuals more prone to respond to purely attention-grabbing news have poorer stock-picking performance

For each individual in our sample, we calculate the average return of his purchases both including ($R_{ih}$) and excluding ($R'_{ih}$) PAG news-related purchases, i.e., purchases in which $1\{Purchase_{i,h\in 2012-2017}\} = 1$. The horizons we consider are $h = 5$, 10, 20, 40, 60, 120, and 240 trading days. We regress $R_{ih}$ and $R'_{ih}$ on $NPAG_i$ and include controls: volume (in 1000's), the average volume across all purchases by individual $i$ during 2012-2017, in thousands of Brazilian reais (R$); # of days, the number of days the investor was active in the stock market during 2012-2017; # of months, the number of months the investor was active in the stock market during 2012-2017. $t$ statistics in parentheses, with robust standard errors. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

### Performance – all purchases

|          | $R_{i5}$  | $R_{i10}$ | $R_{i20}$ | $R_{i40}$ | $R_{i60}$ | $R_{i120}$ | $R_{i240}$ |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| $NPAG_i$ | -0.0233***| -0.0475***| -0.124*** | -0.248*** | -0.321*** | -0.663*** | -1.208*** |
|          | (-5.88)   | (-7.51)   | (-10.64)  | (-13.50)  | (-11.19)  | (-14.22)  | (-17.27)  |
| volume (in 1000's) | 0.00000393** | 0.00000470** | 0.00000610** | 0.00000926** | 0.00000929* | 0.00000205** | 0.00000495*** |
|          | (1.97)    | (2.15)    | (2.00)    | (1.98)    | (1.81)    | (2.20)    | (2.68)    |
| # of days | 0.000000581 | 0.000000715** | 0.00000162** | 0.00000438** | 0.00000671*** | 0.000100*** | 0.000157*** |
|          | (0.50)    | (3.52)    | (4.24)    | (7.50)    | (9.24)    | (7.49)    | (8.24)    |
| # of months | -0.0000207 | -0.0000920** | -0.000166** | -0.000463** | -0.000784** | -0.00105** | -0.00230*** |
|          | (-1.46)   | (-4.04)   | (-4.02)   | (-7.45)   | (-9.55)   | (-6.48)   | (-9.74)   |
| constant | 0.00457*** | 0.0105***  | 0.0204***  | 0.0417***  | 0.0641***  | 0.119***   | 0.254***   |
|          | (10.12)   | (14.21)   | (15.53)   | (18.83)   | (21.42)   | (22.48)   | (31.91)   |
| observations | 30,552    | 30,552    | 30,552    | 30,552    | 30,552    | 30,552    | 30,552    |
| R2       | 0.002     | 0.003     | 0.004     | 0.009     | 0.011     | 0.009     | 0.015     |
| R2       | 0.002     | 0.003     | 0.004     | 0.009     | 0.011     | 0.009     | 0.015     |

### Performance – excluding PAG news related purchases

|          | $\bar{R}_{i5}$ | $\bar{R}_{i10}$ | $\bar{R}_{i20}$ | $\bar{R}_{i40}$ | $\bar{R}_{i60}$ | $\bar{R}_{i120}$ | $\bar{R}_{i240}$ |
|----------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| $NPAG_i$ | -0.0268*** | -0.0511*** | -0.129*** | -0.256*** | -0.326*** | -0.695*** | -1.261*** |
|          | (-6.55)    | (-7.84)    | (-10.89)   | (-13.61)   | (-10.42)   | (-14.30)   | (-17.31)   |
| volume (in 1000's) | 0.000000399* | 0.00000486** | 0.00000632** | 0.00000960** | 0.00000967* | 0.0000208** | 0.0000496*** |
|          | (1.94)    | (2.14)    | (2.01)    | (1.98)    | (1.81)    | (2.23)    | (2.72)    |
| # of days | 0.000000550 | 0.00000726*** | 0.0000162**  | 0.0000443** | 0.0000677*** | 0.000102*** | 0.000150*** |
|          | (0.47)    | (3.50)    | (4.17)    | (7.46)    | (9.21)    | (7.55)    | (8.28)    |
| # of months | -0.0000221 | -0.0000951*** | -0.000166*** | -0.000466*** | -0.000795*** | -0.00107*** | -0.00237*** |
|          | (-1.53)   | (-4.10)   | (-3.94)   | (-7.41)   | (-9.54)   | (-6.51)   | (-9.74)   |
| constant | 0.00466*** | 0.0107***  | 0.0205***  | 0.0418***  | 0.0644***  | 0.120***   | 0.255***   |
|          | (10.14)   | (14.24)   | (15.47)   | (18.69)   | (21.39)   | (22.34)   | (31.73)   |
| observations | 30,552    | 30,552    | 30,552    | 30,552    | 30,552    | 30,552    | 30,552    |
| R2       | 0.002     | 0.003     | 0.004     | 0.009     | 0.011     | 0.009     | 0.016     |
Our second finding is that the buying pressure of low-activity retail traders is accompanied by an upward pressure on stock returns up to 10 days after the publication of $+44.2$ bps. This result corroborates our hypothesis that the attention-motivated demand of some investors for PAG stocks inflates prices.

Finally, individuals narrowing their choice sets to the alternatives that are more salient might be motivated by rationally inattentive behavior, since analyzing too many alternatives is welfare-reducing. However, if the investor seeks to lower his search costs using heuristics, such as “stocks that are on the news” to form his consideration set, then this approach probably has its own downsides, even if it pays off. Costs can arise according to two non-exclusive hypotheses. First, the moment the investor starts taking stock $x$ into consideration, and being more prone to purchase it, news might be orthogonal to his expected future payoff; this is exactly the case of the PAG news we present. Many investors acting in the same way can then temporarily inflate stock prices, leading to disappointing returns over a longer horizon. Our results in section 6, nonetheless, do not show any statistically significant evidence of reversal in prices to support this hypothesis. Second, individuals might differ in how they form their consideration sets. As we show, some individuals are more susceptible to purchase PAG stocks than others. Those who tend to consider alternatives that recently caught their attention because of salience, alone, might ignore preferable options. Therefore, an individual who has lower cognitive costs, and a larger consideration set, is likely to have better stock-picking ability. Our results seem to back this hypothesis, that the susceptibility to salience is a personal characteristic, since those who are more prone to purchase PAG stocks tend to underperform even when we do not consider PAG news-related purchases.

A natural extension of this paper is to study whether the attention-grabbing effect of news is pervasive to a higher number of industries and countries. Are individual investors also net buyers of stocks with PAG news in other data sets, considering broader categories of news articles? Does the attention-grabbing effect work in the same way for large and small firms? Are less sophisticated institutional investors also subject to salience-driven buying?

Finally, our study has implications for portfolio-choice models. Further studying the role of salience in attention allocation, and its heterogeneity among individuals, can help to shed more light on the underlying mechanisms of stock price changes, as well as provide better understanding of the performance of individual investors.
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