

Research Article

Big Is Beautiful: It Matters for Small Investors

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Abstract

Experimental finance stresses the role of emotions and psychological feelings in understanding the behavior and decision-making of investors on the stock markets. This article focuses on individual investors, who are thought to develop a kind of predisposition to behavioral and cognitive biases. Based on data collected from an experiment in the field of trading and supported by the use of qualitative analysis tools, we demonstrate that the participants in the experiment are more likely to trade in companies with the highest market capitalizations. Indeed, by examining and analyzing the different investment strategies chosen during the experiment, we observe a strong link between the company size and the investment choices. We also highlight, during the experiment, intensive media coverage (or media overexposure) specifically directed to the largest companies. To some extent, this can be explained by the large number of opinions and recommendations issued by financial analysts that are either directly related to companies in the news or focused on companies in the same sector (spillover effects). Financial analysts can therefore be considered as helping to reduce uncertainty and providing guidance for individual investors who are chronically in need of references on the stock markets. In addition, our results suggest that a lack of experience and a low level of familiarity regarding how stock markets work will naturally direct the attention of investors towards companies extensively covered by financial analysts (in other words, large ones) and the most media covered ones. To a certain extent, corporate communications and the marketing of stock market websites would therefore become central markers for the definition of investment strategies. The data collected show the development of “all that glitters attracts” bias, which can be explained by a strong focus on easily available and highly visible information (the availability bias). The more visible they would be, the larger the companies and the more they would be followed by financial analysts. We believe that how information is covered by the media leads to the development of herd behavior. Ultimately, stock market websites would therefore appear to facilitate behavioral and cognitive biases.

Keywords

Qualitative Research, Uncertainty, Stock Markets, Experimental Finance, Behavioral Biases

1. Introduction

Financial and economic literature argues that informational asymmetry is a key factor in understanding how stock markets work. From this perspective, institutional investors have more rapid access to information than individual investors. Furthermore, large investors are better

able to deal with the effects of information flows than individual ones. For individual investors, this lack of information can result in specific patterns in the decision-making processes, and in particular a strong influence of emotional factors and the development of behavioral and

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cognitive biases. All these factors underlie behavioral finance, as they make it possible to move away from the assumption that stock market operators are fully rational. In other words, since information is of little use to individual investors, fundamental analysis is of little relevance. Individual investors would therefore be looking for references and signals on the stock markets to shape their investment strategies. Based on a state of the art, we believe that the profile of individual investors naturally drives them to follow conventions developed by the markets supported by financial analysis. The opinions issued by financial analysts are presented in a very short discursive form, they are relatively clear, and an effort is made to quantify the forecast (even if, most of the time, forecast intervals are given).

This kind of information - as largely provided on stock market websites - can be easily interpreted by individual investors, unlike announcements where links must be estimated between the informational content and its effects on the future value creation process. What makes it difficult to interpret the opinions is their large number and the fact that they do not necessarily come to the same conclusion. The multiplication of opinions brings the company to the public eye on stock market websites and attracts the attention of investors. Financial analysts' opinions thus become central references for individual investors in search of easily understandable information. As the largest companies are the most followed ones, our research question will be as follows: to which extent might the large number of financial opinions targeting big companies and their publication on stock market websites be responsible for the 'all that glitters attracts' bias?

The 'all that glitters attracts' bias is rarely studied on its own, but more often seems to be part of the availability bias (an investor would be fully satisfied with immediately available information, instead of seeking out all the information required to take a decision) and herd behavior (the tendency of individuals to follow the general market trend), without knowing which came first, *the chicken or the egg*. By addressing this bias, our article aims to fill a gap in the literature on behavioral and cognitive biases.

The article will be organized as follows: the first section will deal with how individual investors cope with uncertainty and will also analyze the development of behavioral and cognitive biases. The second section will focus on the role of financial analysts as information providers for individual investors. The third one will be devoted to discussing methodological choices. The fourth section will present general data relating to the experiment conducted. The fifth section will present all the findings. The conclusion will answer the initial research question, and, in the last section, the avenues for further research will focus on what could be carried out in the future on the topics that were considered.

2. Managing Uncertainty: The Case of Individual Investors on the Stock Markets

Chandra observes that individual investors do not always make rational investment decisions: they are victims of emotional and behavioral factors such as greed, fear, cognitive dissonance, heuristics, mental accounting and anchoring [1]. Based on these elements and according to Bourghelle and Brandouy, "*a dense and rapid flow of information is often difficult to process due to the limited cognitive capacities of economic agents, and the mobilization of the criterion of optimizing rationality seems inappropriate for understanding how expectations are actually formed on the financial markets*" [2]. Small investors would sort a set of data in order to create information that would then be reduced to a personal construct through a mental process and an analysis of the elements provided [3]. Karlsson et al. demonstrate that under uncertainty, individuals will focus on the first waves of positive news and will not take into consideration any possibly contradictory further information [4]. Time pressure would change how people explore uncertainty and try to respond to it. More specifically, they would reduce their investigation and understanding of uncertainty under time pressure and would make decisions with a low level of structured reasoning [5]. From Postel, the risk would remain an unpredictable situation and no theory considering it as central [6]. In our view, human reasoning is very limited, and the stock markets would be too unstable for modelling exercises. From this perspective, prices would only reflect a "simple" convention on future states [7], far from fundamental analysis. According to the conventional idea, information flows would be assimilated and analyzed by both institutional investors (who could therefore be seen as "objective translators" of information) and financial analysts (who could therefore be considered as "moderators of uncertainty"). The individual investor could decide to delegate the analysis to others (considered to be) more professional and better kept informed. Going further by considering the different behavioral and cognitive biases, we believe that individual investors will rely on weak and highly visible signals on stock market websites for choosing their investment strategy. In fact, informational visibility has rarely been analyzed in financial literature, except through the 'all that glitters attracts' bias. This bias suggests that individual investors would prefer stocks that are in the spotlight (i.e. stocks of companies widely commented on by financial newspapers and/or showing abnormally high trading volumes [8]). From this perspective, based on 28,387 data from individual investors in the Chinese market, Chen et al. find that a high proportion of investors mainly buy stocks that attract attention (so-called attention-driven buyers) [9]. They would be more sensitive to news and more inclined to use online information as a key reference. Attention-driven buyers would also build more speculative investment strategies.

It is therefore a question of knowing what could attract the attention of individuals investors. For this purpose, in the following section, we will focus on the role of financial analysts as information providers on the stock markets.

3. Financial Analysts' Opinions: Which Kind of Information for Individual Investors

The influence of financial analysts' opinions leads to contrasting results. Even if financial analysts are often considered to reduce the problems of informational asymmetry, improve market efficiency [10] and moderate speculative bubbles by coordinating investor beliefs [11], the fact remains that the opinions expressed can, to a certain extent, be open to question, namely in their degree of precision. For instance, the results of Du and Budescu on the accuracy of analysts' earnings forecasts indicate a low degree of precision [12]. Moreover, the accuracy of the opinions expressed by financial analysts can also be strongly influenced by biases, in particular overconfidence, optimism [13, 14] and what it is called rational vanity [15]. In any case, the sociology of financial markets should be mobilized to understand the behavior of financial analysts and their networks [16]. On the one hand, this would facilitate considering the potential interests' conflicts to which sell-side analysts are subject, particularly when their banks have business relationships with the companies they are asked to evaluate. On the other hand, it would facilitate studying the relationships with company management teams and the questions of career and incentives.

On the specific subject of media coverage made by financial analysts, we refer to the conclusions of the following articles:

Huang et al. show that an intense analyst coverage (even if it can reduce agency problems) puts pressure on managers to meet short-term performance targets, such as earnings forecasts [17]. Therefore, analyst coverage would have a "dark side" by encouraging managers to focus on short-term results, potentially to the expense of long-term investments. Similarly, the results of He and Tian suggest that an important coverage is associated with a decrease in the number of company patents and impact [18]. The paper argues that the analysts' pressure to meet short-term objectives can be detrimental to long-term innovative investments.

Doukas et al. examine whether excessive stock market valuations are related to excessive coverage by financial analysts [19]. According to this study, companies with high analyst coverage are likely to be overvalued and to generate low future returns. Conversely, companies with low analyst coverage are likely to be undervalued and to generate high future returns. The findings suggest that abnormal analyst coverage results in shares trading at prices far from fundamental values, which is damaging to investors and to the market's ability to allocate capital efficiently.

Rees et al. examine the key factors in the coverage of financial analysts in the business press and the effects on the analysts' careers [20]. The analysts cited in the business press are more likely to possess features related to superior quality (prestige, competence, experience and effort). The results demonstrate that the business press is a valuable source of exposure for financial analysts. Media coverage can boost analysts' reputation, increase demand for their services and improve their career opportunities. The analysts who follow consumer-oriented companies are also more likely to be mentioned in the media because of greater public interest.

The study by Bonsall et al. carried out in contexts of market uncertainty suggests that the media increase their coverage of earnings announcements, particularly through short news items [21]. This media coverage is said to lead to better information for investors. The results also show that journalists write fewer full articles during uncertainty times but switch to more frequent updates using short news flashes. In addition, the results show an increased coverage of big companies, without increasing coverage of smaller ones. It should be noted that the role of the CEO can also be decisive for the intensity of media coverage [22].

The latter study, even if carried out in a specific context, demonstrates the importance of media coverage - with a differentiated approach depending on the size of the company - for delivering messages to investors. This difference in treatment reinforces our research question.

4. Research Methodology and Analysis Tools Selected

Several authors demonstrated that it would be necessary to develop models based on the empirical observation of behavior to consolidate the recent advances in behavioral finance [23, 24], in particular by working from experimentation. In terms of methodology, we use an analysis inspired by experimental finance and supported by qualitative analysis tools. There are two reasons for this double, largely interconnected approach.

Firstly, from the 1980s, Grether noted that experimentation was generally used by researchers in psychology but very little in the financial area [25]. Because of behavioral finance and better control of some technological tools, research paradigms have changed over time, and more interest has been paid to experimental finance. Bloomfield and Anderson argue that experimentation is an underused method in the financial field but has advantages for behavioral finance and bias analysis [26]. Experimentation can be a useful method for bypassing several common econometric problems, such as omitted and unobserved variables. Experimentation would also make it possible to extend theoretical models by relaxing some working assumptions or by examining situations too complex to be treated quantitatively. Controlled manipulations would have the advantage of building an environment

where a causal theory of phenomena could be tested with maximum validity [27].

Within the framework of experimental finance, particular attention must be paid to the building of a scientifically proven experimental protocol. In recent years, we developed a number of proposals aimed at controlling the conduct of experiments in the field of finance [28]. For this purpose, we based our work on the different experiments that we have conducted in the past [29-32]. As a result, we have been able to correct some weaknesses and significantly improve our approach, particularly by addressing the problem of emotional dysregulation caused by a large number of decision-making [33].

Secondly, according to the previous description, we use qualitative analysis techniques. The literature shows a growing interest in qualitative methodologies [34] that can follow different paths. Mwita highlights several potentially useful qualitative techniques: interviews, participant observation, questionnaires and written documentation [35]. In the field of trading, the meta-analysis carried out by Pérez-Sánchez and Delgado shows that the data collection relating to individual investors in qualitative studies is based on an orally process (21 studies out of the 25 surveyed) or a written one (3 studies out of the 25 surveyed), or from focus groups (only one study) [36]. In order to consolidate the results of the qualitative approach, it is often recommended to use several techniques simultaneously.

Concerning sampling, in most cases, financial experiments involve student populations [37, 38], and it seems to make scientific sense [39]. We would argue that a large number of transactions over a relatively long investment horizon provide a rapid understanding of the reality in the stock markets. However, based on the study by Dorn and Sengmueller, we keep in mind that students not directly interested in the financial value of the portfolios may overplay (any form of overconfidence apart) [40].

In the context of this study, the experiment involved three days of continuous trading, between January 27 and 29, 2025. With reference to Claudon and Weber, the aim is to place the participants in an emotionally charged situation that would shape, consolidate or exacerbate some psychological biases [41]. We selected eight students – seven men and one woman, which is in line with the literature on the subject, highlighting a singularly masculine propensity to participate in activities related to the stock markets or simply to participate in activities where the playful side is omnipresent [42] - in the Business Administration program at the University of Mons (Belgium). Due to financial constraints (the students were paid for all three days), it was not possible for us to increase the number of participants or extend the duration of the experiment. This point will be specifically taken into consideration in the avenues for further research (point 8). Financial constraints also prevented us from soliciting professional traders.

The condition for participating in the experiment was to have passed a financial subject given in the second year. This was intended to ensure a minimum of knowledge in the fi-

ancial field. The students were paid on the basis of an hourly wage, and a reward was offered for the highest financial portfolio at the end of the experiment (worth a maximum of 200 euros, which the person could choose freely). The stock market platform used was ABC Bourse, which is used to create stock market games over specific periods. Starting with a simulated financial portfolio of 100,000 euros, students could only trade securities from companies included in the CAC 40 (the 40 largest market capitalizations on the French market); among other things, this choice ensured familiarity with the stocks in the portfolio. It should be noted that at the beginning of the experiment, the portfolio consisted only of cash. No limit was set on the number and type of transactions. The website showed the ranking of the different participants every hour. Each student was given a trading journal in which they had to record the nature of their transactions (purchase or sale), the name of the company, the number of shares bought or sold, the financial amount of the transactions and the total amount of cash in the portfolio after each transaction.

The analysis material consists of data from trading journals and written feedback collected at the end of the experience. Firstly, trading journals can be used to identify the different movements made and their size and also give an idea of the direction of investment strategies and their changes over time. At the same time, all the information provided on the stock market website was collected by the organizers. Secondly, at the end of the experimentation, we collected feedback from the participants, using an updated version of the questionnaire developed by Harmon-Jones et al. [43]. For this purpose, participants were asked to describe their emotions after some scenarios. For this purpose, we rely on the work of Harmon-Jones et al., who argue ‘*this approach serves to validate emotions through memories driven by emotional scenarios*’ [43]. These are in line with Gueroui: ‘*scenarios are an effective means for the detection, interpretation and organization of information in terms of planning and strategic decision-making*’ [44].

Through the “anger” scenario, participants were asked to recall a moment when the general market configuration did not meet their expectations and had a negative effect on the value of their portfolio. The “fear” scenario referred to a dangerous situation in relation to the financial value of the portfolio. The “anxiety” related scenario is designed to analyze how participants anticipate a negative trend. In the “sadness” scenario, they were asked to recall a significant loss, difficult or even impossible to overcome. The “happy” scenario focused on a moment when a positive event had taken place.

5. Overall Context of the Experimentation and Overview of the Investment Strategies Selected

The experiment took place over three days, during which the general stock market trend was negative, even if losses

were relatively small. Data on the evolution of the CAC40 over the period are given below (see [Table 1](#)), along with data on American and Japanese stock market indices, to give a broader view of the stock market environment.

Several news had a negative impact on the behavior of the French stock market (and other markets) over the three days. On January 27, this concerned Deepseek, a Chinese competitor to American companies in the Artificial Intelligence field.

On January 28, the day was largely influenced by Deepseek's arrival and the consequences for American companies on the Artificial Intelligence market. On January 29, LVMH annual results were announced (lower than expected). It should be pointed out that the Fed's announcement on 29.01 (interest rates would remain unchanged) had largely been anticipated by the markets.

Table 1. CAC 40, DJ30, NASDAQ 100 and TOPIX Performance Over the Experimentation.

Date	01.27.2025	01.28.2025	01. 29.2025	Total
CAC 40	-0,0003	-0,00012	-0,0032	-0,0036
DJ 30	0,0065	0,0031	-0,0031	0,0065
NASDAQ 100	-0,0297	0,0159	-0,0024	-0,0162
TOPIX	0,0026	-0,0004	0,0068	0,009

Based on the data in [Tables 2 and 3](#), 53% of transactions took place during the first day, which is not surprising given that the first portfolio consisted only of cash. In general, the strategies selected were very conservative. Firstly, the statistical data on holding times (see [Table 3](#)) show that 75% of participants held their shares for more than two hours, which demonstrates the little use of offensive strategies and scalping trading (investment horizon of less than 15 minutes). Secondly, the portfolio diversification levels were relatively high (see [Table 4](#)). We suggest that the bearish stock market did not provide an opportunity for increasing the number of transactions. Even if the financial portfolio was only virtual and losses on the index were only small, the participants were very affected by the personal losses (there was a kind of very strong and personal appropriation of the portfolio and its

value). Even if this is not the objective directly pursued and other methodological tools should be mobilized, an “aversion to regret” and a “disposition bias” seem to have developed over time [\[45\]](#). Going further, we also observe that on the third day, a feeling of abandonment seems to have developed in some participants (3, 6 and 7) who hardly carried out any transactions at all. This finding is particularly surprising as a reward had been promised to the owner of the highest portfolio. Thus, we could have observed more aggressive strategies at the end of the experiment, since some participants had nothing left to lose. As an explanation, we hypothesize that the large number of disappointments could result in individuals feeling so discouraged that they no longer have the necessary energy to manage their emotions [\[46\]](#).

Table 2. Direction of Trading Over the Three Days.

	Total Day 1	Buy	Sell	Total Day 2	Buy	Sell	Total Day 3	Buy	Sell	Total	Buy	Sell
1	21	12	9	18	15	3	8	5	3	47	32	15
2	28	17	11	8	4	4	7	3	4	43	24	19
3	17	15	2	4	1	3	2	1	1	23	17	6
4	49	28	21	14	10	4	12	9	3	75	47	28
5	18	12	6	21	10	11	16	7	9	55	29	26
6	15	11	4	2	1	1	0	0	0	17	12	5
7	13	9	4	12	7	3	1	0	1	26	16	10
8	11	10	1	9	3	6	16	8	8	36	21	15

	Total Day 1	Buy	Sell	Total Day 2	Buy	Sell	Total Day 3	Buy	Sell	Total	Buy	Sell
Total	172	114	58	88	51	35	62	33	29	322	198	124
Mean	21,5	14,25	7,25	11	6,37	4,38	7,75	4,12	3,62	40,25	24,75	15,5

Table 3. Holding Period of Shares in the Portfolio.

Average detention time for students	6 hours
Student detention frequency	
Between 0 minute and 2 hours 13 mins	25%
Between 2 hours 14 mins and 8 hours 29mins	50%
Between 8 hours 30 and 17 hours 51mins	25%

Table 4. Level of Portfolio Diversification.

	Number of Companies in Portfolio	% of Index
1	22	0,55
2	12	0,3
3	15	0,375
4	26	0,65
5	16	0,4
6	8	0,2
7	12	0,3
8	16	0,4
Mean	15,875	0,397

6. Results and Findings

The answer to our research question will be provided by a set of elements all moving in the same direction. That is how it is generally recommended to proceed when using a qualitative methodology addressed to small samples.

In order to answer our research question, according to data collected in trading journals, we will first describe the orientation of student transactions according to the company size, as well as the coverage of index companies by financial analysts (see Table 5). A focus will also be made on LVMH. Second, we will consider the percentage of investments made in the 10 largest companies and, third, transactions in the 10 largest companies during the initial phase of experiment will be analyzed. The second part of the results will focus on the first-hand reports of the participants at the end of the exper-

iment according to the scenarios described in the methodological section.

6.1. Results from Trading Journals

Index companies have been classified into four main categories according to their size. In other words, category 1 to 10 includes the 10 largest market capitalizations on the French market and category 31 to 40 includes the ten smallest. Number of opinions issued is also provided.

Table 5. Number of Transactions and Number of Opinions Issued by Financial Analysts.

Size	Number of Transactions	% of Total	Number of Opinions	% of Total
1-10	118	0,375	28	0,718
11-20	69	0,219	3	0,077
21-30	80	0,254	5	0,128
31-40	48	0,152	3	0,077
Total	315	1	39	1

From these observations, it appears that the participants targeted large companies and left smaller companies out (for instance, category 31 to 41 only represents 15.2% of transactions). It should also be noted that some transactions in the third category could be also explained by spillover effects. In other words, the announcement of LVMH's (the largest company on the French market) results could affect the attractiveness of other luxury goods companies (e.g. Kering) included in categories below. The conclusions related to the financial analysts' opinions given in the following section reinforce this spillover effect.

Indeed, more than 70% of the financial opinions were addressed to companies included in the first category, and a strong coverage by financial analysts on LVMH, which announced its annual results during the period of the experiment. It should be noted that Teleperformance, a company in the fourth category, also announced its annual performance during the experiment (on January 27). This announcement did not result in a significant number of analyst opinions or a significant number of trades by participants (transactions on Teleperformance represent only 1.6% of all transactions while

transactions on LVMH represent 9.5% of all transactions, appendix I; 16 opinions were issued on LVMH, but only one on Teleperformance, appendix II).

In more detail, we can see a high concentration of trades in the five largest market capitalizations and a lack of interest in the five smallest (see Table 6). Keeping in mind spillover effects, a large number of transactions were in the luxury sector, and not just LVMH, which was in the spotlight. Since both LVMH and Teleperformance reported their annual performances during the experiment, the number of transactions could have been relatively similar. In fact, it was not the case. The explanation could come from the fact that Teleperformance was not closely followed by analysts (only

one publication) and therefore had little media coverage on stock market websites. This would reinforce the idea of the “all that glitters attracts” bias, supported by the “marketing” carried out by financial analysts. For individuals unfamiliar with stock markets, LVMH could also be better known than Teleperformance, particularly because of the range of famous products offered by the luxury company. In any case, from our findings, participants were more focused on presentation and marketing than on content itself. In other words, the larger a company is, the more it is followed by financial analysts, which obviously results in a large number of publications on websites that could attract eye and attention.

Table 6. Number of Transactions and Number of Opinions Issued by Financial Analysts (for the Five Largest and Five Smallest Market Values).

Company	Number of transactions	% of Total	Number of Opinions Issued
LVMH	30	0,095	16
Hermès	16	0,051	0
L'Oréal	15	0,047	2
Schneider	16	0,058	0
Airbus	6	0,019	6
Total	83	0,26	24
Unibail	0	0	0
Eurofins	3	0,0095	0
Carrefour	12	0,0381	1
Edenred	2	0,0063	1
Teleperformance	5	0,0159	1
Total	22	0,07	3

This feeling was also reinforced by a general positive market sentiment on LVMH, and so participants followed it (see Table 7). In fact, the data below supports the assumption of the development of a market-based sentiment associated with LVMH shares in the days prior to the announcement of the results. Indeed, during the week preceding the announcement, the company's market valuation increased sharply (see Table 7), both in absolute and relative terms (the stock return is compared with the market return). Considering the average daily trading volumes between January 14 and 27 (10 days preceding the announcement), they amount to 626,681, whereas between December 30 and January 13 (10 days), they only amounted to 371,901. These initial figures seem to demonstrate a strong *buzz* around the stock, and markets are anticipating positive news associated with the announcement of the annual results on January 28 after the close.

Table 7. Trend in Share Price and Net Stock Return.

LVMH	Return	CAC 40 Return	Net Return
01.21.2025	0,033	0,00029	0,033
01.22.2025	0,009	0,0076	0,00126
01.23.2025	0,017	0,0087	0,008
01.24.2025	0,024	0,0171	0,0072
01.27.2025	0,029	-0,014	0,0435
Total	0,1128	0,02	0,093

A more detailed analysis shows a positive intraday trend of the company's share price until 04:49 p.m. on January 28,

2025 (the share price reached 762.7 euros at that moment, which corresponds to a gain of 1% over the day). The data collected shows a strong anticipation of an announcement with positive information content, especially as the analysts' opinions were relatively positive on January 27. These expectations do not appear to be unjustified considering that (see Table 8), the announcements of LVMH annual performance for the last three financial years were always followed by significant increases in the company's market value.

Table 8. Historical Stock Market Reactions to the Announcement of LVMH Annual Results.

Day of Announcement	Prices	Variation
01.25.2024	743,86	
01.26.2024 (results 2023)	832,7	0,12
01.25.2023	865,9	
01.26.2023 (results 2022)	876,52	0,0123
01.27.2022	770,08	
01.28.2022 after closing (results 2021)	795,27	0,033

We assume that a kind of stock market “tradition” has developed, whereby the announcement of LVMH's results systematically corresponds to an increase in the company's value. The markets would therefore anticipate similar positive stock market configurations for future announcements. This set of elements may explain the herd behavior exhibited by the participants, who also want to benefit from the positive news.

The last two proxies to assess the biggest market capitalizations attractiveness will first consist of a comparison between the investments made in the 10 largest market capital-

izations on the first day and over the whole experiment (see Table 9). This variable aims at analyzing to which extent, even though participants are not very familiar with how markets work, the size of the company can be a determining factor in the selection of their investment strategy.

Table 9. Comparison of the Proportion of Investments Made in the 10 Largest Capitalizations between the First Day and the Three Days Experimentation.

Top 10	Day 1	Total (3 Days)	Difference (D1 – 3 Days)
1	0,250	0,279	-0,029
2	0,353	0,304	0,049
3	0,420	0,167	0,253
4	0,556	0,509	0,046
5	0,522	0,408	0,114
6	0,133	0,118	0,016
7	0,615	0,385	0,231
8	0,364	0,361	0,003
Mean	0,402	0,316	0,085
SD	0,162	0,129	0,105
Maximum	0,615	0,509	0,253
Minimum	0,133	0,118	-0,029

Secondly, we consider the number of transactions relating to the 10 largest capitalizations during the first day, between 9:00 a.m. and 11:30 a.m. (see Table 10). During this period, participants have the fewest references.

Table 10. Percentage of Transactions in the 10 Largest Market Capitalizations during the Initial Phase of the Experiment.

	Number of Transactions in Top 10 Capitalizations	Total Number of Transactions	Percentage
1	4	12	0,333
2	6	13	0,462
3	13	24	0,542
4	3	6	0,500
5	6	9	0,667
6	2	10	0,200
7	5	7	0,714
8	4	9	0,444
Mean	5,375	11,250	0,483

	Number of Transactions in Top 10 Capitalizations	Total Number of Transactions	Percentage
SD	3,378	5,651	0,167
Maximum	13,000	24,000	0,714
Minimum	2,000	6,000	0,200

On average, the data shows a very high concentration of investments in the largest market capitalizations during the first day (in other words, the day when participants are least familiar with the stock markets). However, as they gain experience or because what was initially attractive was in fact not, the average concentration of investments in the largest companies tends to decrease over time.

By focusing on the first moments of the experiment, we also notice a very strong concentration on the largest companies in the index. This result demonstrates that the lack of knowledge results in investments being directed towards well-known companies (in fact, what they know best), whether or not they are in the spotlight.

6.2. Journals Assessing Emotional Feelings Towards the Largest Market Capitalizations Through the Use of Scenarios

The different scenario described in the methodological section and the comments related to them are presented below.

Using the “anger” scenario, items below were collected:

- 1) Participant 212077¹: the participant was unaware that the announcement of the LVMH results would result in such a fall. Moreover, this was his only risky move planned in advance. The main emotion was disappointment.
- 2) Participant 220528: during the second day, this participant wanted to reinvest in LVMH, expecting a rally on the third day, but he had not kept himself informed and the luxury sector fell on the third day. The main emotions were disgust and surprise. The participant felt useless and incompetent.
- 3) Participant 221399: at the end of the second day, this participant thought that Schneider had hit his lowest point, but the price continued to fall. At that point, he was no longer rational, and the decisions were based on impulsiveness.
- 4) Participant 190030: On the third day, as the CAC40 and LVMH fell, participant began to regret not having sold the day before. The main emotion was regret.

The scenario related to “disgust” provided us with the following descriptions:

- 1) Participant 220223: The luxury sector experienced a sharp decline, and the participant forgot that he held

shares in these companies. The main emotion was disgust.

- 2) Participant 220528: At the start of the second day, Schneider fell sharply, increasing the gap between this participant and the others. This participant was disgusted but believed that it was impossible to anticipate such a move because it was due to the market. The main emotions are regret, disgust and sadness.

The “fear” scenario gave us the opportunity to highlight the following:

- 1) Participant 220528: Schneider's fall confused this participant and he tried to recover. He expected to lose even more when the American markets opened.
- 2) Participant 190030: LVMH's fall made this participant hesitate between selling and waiting. He felt irritated because the market was moving in the wrong direction. The main emotions were: annoyance, irritation and anger.
- 3) By considering the “anxiety” scenario, we got the following comments:
- 4) Participant 220528: At the start of the third day, LVMH fell and this participant did not want to face the same situation as Schneider, so he sold his LVMH shares.
- 5) Participant 221399: After buying Schneider shares three times believing that the lowest price had been reached, this participant lost all confidence and felt that he was completely losing control.
- 6) Participant 190030: The participant bought Schneider shares because he thought the share price had gone as low as it could go, but the situation got even worse. He took risks while waiting for an increase that did happen, but it was not enough to cover the loss. The emotions were: hope, desire, will and confidence.

For the “sadness” scenario, we obtain the following feedback:

- 1) Participant 212077: this participant was surprised that the announcement of LVMH's results would cause such a fall. The main emotions were disappointment, acceptance and perseverance.
- 2) Participant 220528: On the third day, Schneider rose but the participant remained in the red. Feeling frustrated, he thought it was impossible to get back into the green.
- 3) Participant 220665: Schneider shares caused this participant to experience a huge loss, but he decided to continue investing in this stock by playing the game with the other participants. The main emotions were: irony,

exasperation, boredom, frustration.

- 4) Participant 223457: This participant made significant investments in LVMH and L'Oréal at the wrong time. This resulted in a large loss. The main emotions were disappointment, sadness and hope.
- 5) Participant 190030: On the third day, this participant sold LVMH and Schneider because the market was bearish. He did not stress because he knew that the situation was irrecoverable. The main emotions were calm, relaxation, release and abandonment.
- 6) Participant 223457: This participant thought that Hermès would perform positively, but this resulted in a loss. The main emotions were disappointment, rage and regret.
- 7) Participant 190030: At the end of the first day, this participant bought back LVMH shares and, on the second day, this share increased in value. Thinking that he was starting to understand how markets work, the participant wanted it to go on like this. The main emotions were: desire, ambition, confidence and hope.

For the "happiness" scenario:

- 1) Participant 220528: Schneider rose by 5% and the participant was happy because his predictions were correct. The main emotions were: happiness, confidence and satisfaction.
- 2) Participant 223457: As the price of LVMH and L'Oréal rose, this participant couldn't wait to sell the shares and make a profit. The main emotions were: satisfaction, contentment, joy, enthusiasm and confidence.

From written feedback and whatever the scenario considered, the same companies are always mentioned, namely LVMH, Hermès, L'Oréal and Schneider, the four largest market capitalizations in the index. Based on these statements, it would therefore seem that the participants were attracted by the largest companies. This also shows the importance of emotional reactions and explains why some people give up on the third day.

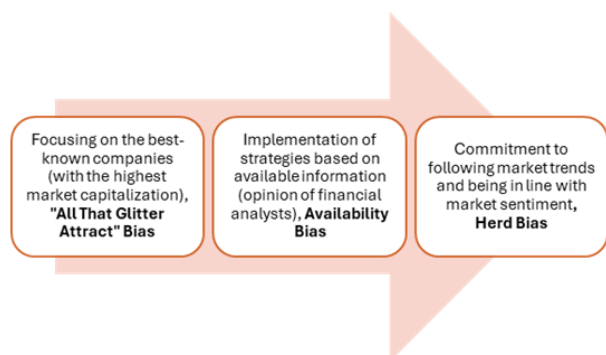


Figure 1. The three phases of investment strategy selection.

From our results based on trading journal and written documentation, it appears that the participants' strategies were at the same time influenced by the size of the companies, the

coverage by financial analysts, the marketing of the stock market sites and the behavior of the markets. In our opinion, the choice of investment strategies would follow a pattern in (strongly connected) three phases:

7. Conclusion

Even if our results are highly contingent on market conditions and the profile of the individuals taking part in the experiment, they come from a spectrum of evidence. The limits of the work and areas for improvement will be specifically considered in the next section on future researches. (point 8).

Apart from these limits, our study shows that investors in need of guidance and knowledge about stock markets hold on to whatever information they can find, even if it is of very limited objective interest. We also argue that the large number of opinions issued by financial analysts (mainly for the largest companies) could attract the attention of individual investors. The question that also arises is the alignment of individual sentiment with the sentiment widely found on the market. As the financial literature suggests, there would therefore be very strong connections between three biases: "all that glitters attracts" bias (supported by a company size effect), the availability bias (i.e. informational signals sent on stock market websites) as well as herd behavior (i.e. to follow the general market trend). Our results show that the "all that glitters attracts" bias occurs before the others, especially in the case of a very low level of knowledge of how the stock markets work. In short, we suggest that the lower the level of knowledge, the more any signal will be subject to over-interpretation. The participants just take whatever information they can, without really analyzing or decoding it. They leave it to others which are supposed to be better informed to process it. To answer our research question, yes, big is beautiful, or more precisely, big is bright or big is shining.

This conclusion raises the question of stock market websites marketing and the pressure exerted by financial analysts searching for visibility and reputation. As we have shown in the state of the art, alignment with the opinions of financial advisors also raises the question of their (un)biased judgment. Indeed, different studies have shown that they are subject to the influence of non-rational factors.

To conclude this article, it is worth considering what lies beyond the glittering packaging, and the actual information content (because the size of a company in itself does not carry any informational signal). The possible difference may be a source of disappointment and could lead to widespread withdrawals.

8. Further Avenues of Research

We believe that the under-representation of qualitative studies in the field of finance is a matter for concern, partic-

ularly when it comes to understanding and evaluating investors' emotions and feelings. In our view, this method of proceeding is particularly relevant, since behavioral finance places great importance on understanding the psychological and emotional reality of individuals in order to assess decision-making processes. Consequently, the use of experimental finance supported by proven scientific protocols could improve knowledge of the factors underlying the behaviors on the stock market.

Firstly, we believe that a wider use of qualitative methodological tools (semi-structured interviews, focus groups) could consolidate the results based on written documents. Secondly, working with larger samples would make it possible to consolidate our results, although there is a risk that this could lead to a loss of precision in the follow-up of individuals' behavior. Similarly, the use of longer time periods for analysis could reinforce some of the conclusions, and analyze the long-term effect of the bias under analysis. Using professionals in the field of trading could also give more value to our results. These three areas of analysis do, however, require additional financial resources and more human resources to understand investment patterns and how they could change over time. In any case, given additional funding, our experimental protocol could be replicated on larger populations and for longer periods of time.

Thirdly, our results could also be supplemented by data from neurophysiological sensors (electroencephalogram, heartbeat, facial recognition, etc.).

Abbreviations

CEO Chief Executive Officer

Appendix

Appendix I: Distribution of Transactions by Company

Company	Number of Transactions	% of Total
Accor Hotels	18	0,057
Air Liquide	13	0,041
Airbus	6	0,019
Arcelor Mittal	9	0,029
Axa	11	0,035
Bnp Paribas	12	0,038
Bouygues	4	0,013
Capgemini	11	0,035
Carrefour	12	0,038
Crédit Agricole	7	0,022
Danone	4	0,013

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Author Contributions

Alain Finet: Project administration, Conceptualization, Investigation, Supervision, Writing – original draft, Writing – review & editing

Kevin Kristoforidis: Data curation, Investigation, Resources, Writing – original draft, Writing – review & editing

Julie Laznicka: Data curation, Investigation, Resources, Writing – original draft, Writing – review & editing

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data supporting the outcome of this research work has been reported in this manuscript.

Company	Number of Transactions	% of Total
Dassault Aviation	5	0,016
Edenred	2	0,006
Engie	3	0,009
Essilor Luxottica	6	0,019
Eurofins Scient.	3	0,009
Hermès	16	0,05
Kering	8	0,0254
Legrand SA	7	0,022
L'Oréal	15	0,048
LVMH	30	0,095
Michelin	9	0,029
Orange	2	0,006
Pernod Ricard	10	0,032
Publicis Groupe	4	0,0127
Renault	4	0,0127
Safran	2	0,006
Saint Gobain	4	0,0127
Sanofi	6	0,019
Schneider Electric	16	0,05
Société Générale	12	0,038
Stellantis	8	0,025
STMicroelectronics	13	0,041
Téléperformance	5	0,016
Thales	3	0,009
Total Energies	8	0,025
Vinci	7	0,022
Total	315	1

Appendix II: Number of Opinions Issued by Analysts for Each Company in the Index

Company	Number of Opinions	Positive	Neutral	Negative
Air Liquide	1	0	1	0
Airbus	6	2	4	0
AXA	1	0	1	0
Carrefour	1	0	1	0
Edenred	1	0	0	1
Essilor Luxottica	2	2	0	0
Legrand	1	0	0	1

Company	Number of Opinions	Positive	Neutral	Negative
L'Oréal	2	0	2	0
LVMH	16	6	6	4
Michelin	1	1	0	0
Pernod-Ricard	1	0	1	0
Publicis	1	0	1	0
Saint-Gobain	1	0	1	0
Société Générale	1	1	0	0
Téléperformance	1	0	1	0
Total Energies	1	1	0	0
Vinci	1	1	0	0
Total	39	15	18	6

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Research Field

Alain Finet: Corporate Governance, Market Efficiency, Event Studies, Behavioral Finance, Qualitative Research Methodology, Emotions, Cognitive Bias.

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