Illumination or Illusion? Placebic Information and Stock Price Forecasts

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Extended Abstract

Purpose:

Meta studies show that stock returns – and as a consequence future stock prices – are mainly determined by a stock’s beta factor (see Barillas/Shanken, 2018; Hwang/Rubesam, 2018) and – depending on the stocks to be analyzed and the corresponding time period – a momentum factor and few value and profitability factors (see Barillas/Shanken, 2018). All relevant information to determine these factors is included in past stock prices and the company’s financial statements. Hence, other company data, such as number of employees and location of headquarter, are to be considered irrelevant for the stock returns and prices and, therefore, irrelevant data for investors. Langer et al. (1978) refer to this type of irrelevant data as “placebic information”. When making investment decisions, retail investors commonly receive a considerable amount of placebic information from financial advisors, analyst reports, or key investor information documents.

The purpose of our study is to analyze how investors perceive placebic information and whether placebic information influences investors’ stock price forecasts when presented in addition to relevant information. Based on the concept of bounded rationally (see Simon 1955, 1956), which accounts for investors’ limited cognitive
capacity and the necessity to use heuristics and rules of thumb, we hypothesize that investors feel better informed when they receive more data, even though this information is placebo, i.e. investors are subject to an information illusion. It also seems possible that placebo information causes an information overload and distracts investors from relevant information.

**Design/methodology/approach:**
We initiate a questionnaire-based stock price forecast competition. 197 participants are asked to forecast the stock price in three months’ time and an upper and lower bound of the stock price that will not be exceeded or undercut with more than five percent probability, respectively, within the next three months. Following Glaser et al. (2007), this approach allows us to estimate the participants’ expectation of the standard deviation of stock returns that is underlying their stock price forecast.

The forecast competition covers three stocks. The stocks with corresponding information are presented successively to the participants. The first stock represents the base case. This means that solely a stock price chart and past stock and market returns are presented, i.e. no placebo information. The second stock is accompanied by information in the base case categories plus selected balance sheet and cash flow statement information, including book value, total assets, and operational profit. The third stock is presented with the same information categories as the second stock plus additional placebo information including, e.g., number of employees, location of headquarter, branches abroad as well as some information typically provided in key investor information documents, such as “stock prices can depend on the demand on the stock market or changes in the company’s profitability”. In addition to varying the amount of information between the stocks, the three stocks exhibit a different price pattern displayed in the price chart, i.e. upward, downward, or sideways price trend.
To enhance the robustness of the results, we split the 197 participants into four groups. The first stock is the same in all groups (i.e. the base case with no placebo information and a sideways price trend) while the groups receive different combinations of amount of information and price trend as second and third stocks in the questionnaire. In each of the four groups, the three participants with the most accurate forecast per stock received a prize money when the actual stock prices were realized after three months.

For each stock, participants are also asked, i.e. in addition to the stock price forecast, to assess on an eleven-point Likert-scale whether they received all relevant information necessary to accurately forecast the stock price. Moreover, participants are asked to estimate the probability that they receive a prize in the competition and the participation fee they would be willing to pay. As participation was free of charge and participants received a participation fee of five Euros, the question about their willingness to pay is a hypothetical question to estimate the risk the participants would be willing to take in the competition.

In addition, the questionnaire includes items to capture further participant characteristics that have been shown to influence stock price forecasts or trading behavior, including participants’ financial knowledge (Abreu/Mendes, 2012), self-assessed knowledge in statistics (Glaser et al., 2007), overconfidence (Deaves et al., 2009), risk attitude (Dohmen et al., 2011), cognitive reflection (Primi et al., 2016 and Frederick, 2005), Big Five personality factors (Rammstedt et al., 2012), Reinforcement Sensitivity Theory personality factors (Studer et al., 2016), locus of control (Kovaleva et al., 2012), and positive and negative affect (Krohne et al., 1996) (see Oehler et al., 2018, for a similar approach).
For the three levels of placebic information (i.e., no vs. medium vs. high amount of placebic information) we perform a series of tests of equality (t-tests) to analyze differences in the participants’ perception of how much relevant information they are provided with, stock price forecasts, expected return from the competition, and the participation fee participants would be willing to pay. Further, we run a series of multivariate regression models to analyze the determinants of participants’ expectation of stock return and risk, expectation of success in the competition, and hypothetical participation fee they would be willing to pay.

Findings:

With an increasing amount of placebic information, participants state to have significantly more relevant information available to accurately forecast the stock price. Hence, participants are subject to an information illusion as they perceive placebic information as actually relevant information. When varying the order of the stocks so that participants receive the high and medium amount of placebic information with the second and third stock, respectively, the perceived amount of relevant information for the third stock is still lower than for the second stock but the difference is less significant compared to the setup with the high amount of placebic information being presented for the third stock. The amount of perceived relevant information, however, has no significant influence on participants’ stock price forecasts and their accuracy.

In contrast, placebic information has an effect on the payoff that participants expect from the competition. For the stocks with placebic information, participants state a lower probability to win a prize in the competition than for the base case stock which means that they expect a lower payoff (defined as individually expected probability to win a prize times prize money). Simultaneously, the participants would pay a slightly higher participation fee, although this effect is not statistically significant. In
combination, participants’ expected return from the competition, i.e. the difference between individually expected payoff and (hypothetical) participation fee divided by the (hypothetical) participation fee, is significantly lower. A possible explanation for the change in participants’ expectations could be that participants feel unable to cope with the higher amount of perceived relevant information, i.e. suffer from information overload, while they assume that other participants probably might derive advantage from the additional information.

**Originality/value:**

Our study is, to the best of our knowledge, the first one that introduces the concept of placebic information into economic decision making. As our study covers participants’ behavior in an economic game, i.e. the forecast competition, under the influence of placebic information, our findings have implications for researchers and practitioners alike. Researchers should be aware that placebic information influences participants’ return expectations in economic games and their perceived level of relevant information. Additionally, as our participants serve as proxy for retail investors, both regulators and policy makers should consider that placebic information can significantly impact investors’ perceived level of relevant information.
References


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