

# FORUM

Invited article

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## BEHAVIORAL FINANCE: ADVANCES IN THE LAST DECADE

### INTRODUCTION

As recently as three decades ago, human factors were rarely considered in theoretical and empirical research in finance (Miller, 1986). However, this has gradually changed, especially after the internet bubble at the beginning of the twenty-first century. As part of this new understanding of the importance of human factors, a new field of knowledge has gained prominence: Behavioral Finance, which uses ideas derived from psychology, many of which draw upon the seminal work of Daniel Kahneman, winner of the Nobel Prize in 2002.

Behavioral Finance is a growing approach that sparks fertile and innovative field research in finance, with potential for development of new management tools, whether in the area of corporate finance or investments. Since the work of Kahneman (2002), the behavioral approach has provided results that are relevant for assessing the quality of executive decisions (Campelo, 2012, p. 881). In the area of asset pricing, in the last decade, for example, researchers have tried to discover and interpret anomalies in stock returns, such as reactions to news and extreme events (Bange & Miller, 2004; Hwang & Salmon, 2004).

Thus, in April 2012, the Observatório da Inovação Financeira, a nucleus research of the Escola de Administração de Empresas de São Paulo, Fundação Getulio Vargas (FGV/EAESP), in partnership with researchers working in Brazil, the United States and Europe, and with the support of the Editorial Board of the *RAE-Revista de Administração de Empresas*, issued a call for papers devoted to modern issues in Behavioral Finance. From the methodological point of view, we understand that Behavioral Finance works on three levels: i) experiments with subjects under controlled laboratory conditions; ii) study of financial decisions in the real world, with applications in personal, family, professional and corporate spheres; and iii) the behavior of financial markets.

The papers selected for this special issue of *RAE* cover topics that address all three levels of studies in Behavioral Finance. We received 25 submissions, four were selected. We thank all authors and reviewers, as well as the Editorial Team of the *RAE*, especially the editor-in-chief Eduardo Diniz, and Eduarda Pereira (Editorial Assistant) for the attention with which they treated the work and the whole manuscript evaluation and improvement process. We are extremely grateful to Professor Hersh Shefrin (University of Santa Clara), who presented his overview of the contemporary literature on Behavioral Finance. We also thank the authors of the book review and recommendations, which complete this special issue.

### THE PAPERS

The first of the four articles in this special issue is about the experimental side of Economics and Behavioral Finance. Almeida and Leal (2015) focus on an approach that has been developing rapidly recently, mainly for two reasons. First, because the economic and behavioral variables

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are difficult to isolate, it is challenging to study this relationship in real world data. Second, and most important, according to the authors, is that data availability would require the existence of a restrictive environment. Thus, an experimental model is justified.

The present paper, via controlled experiments with students and market professionals, examines whether there are differences in pricing initial public offerings (IPOs) when changing the method of pricing. As [Ritter and Welch \(2002\)](#) agree, the process of pricing is the most delicate point in IPOs, because there are no historical reference prices. This does not happen with a follow-on offer, where the reference price is the secondary market.

The three methods for pricing used in [Almeida and Leal's \(2015\)](#) experiments were bookbuilding, Dutch auction and the competitive IPO. Some authors, such as [Jenkinson and Jones \(2009\)](#), support the idea that although bookbuilding is the dominant method used internationally (including Brazil), it has been heavily criticized for inducing conflicts of interest. This is because investment banks not only serve the interests of the issuing companies, having an incentive to increase the bid price and, therefore, their own remuneration, but also serve the interests of their investor clients, which would tend to decrease the offering price to increase the chance of higher earnings in the secondary market. To resolve this problem, [Jenkinson and Jones \(2009\)](#) describe a new method of pricing recently used in some European countries.

In the competitive IPO the functions of structuring the supply and distribution (sale of shares) are divided among different investment banks. The great advantage of this new mode, besides decreasing the conflict of interest, would be to avoid a complete break with the dominant method of bookbuilding. An alternative way to mitigate the discretion of the banks would be the auction, which would represent a significant change from the way deals are now completed. The competitive IPO, however, retains many of the qualities of bookbuilding and promotes small changes to control conflicts of interest.

As [Almeida and Leal \(2015\)](#) suggest, there is still no consensus on the best way of pricing a public offering of shares or bonds. Thus, the use of controlled experiments may well help find a solution to this problem, or, at least, show the most promising path. Many authors, such as [Bonini and Voloshyna \(2013\)](#), [Trauten and Langer \(2013\)](#), and [Zhang \(2009\)](#), among others, have sought to identify, through experimental methods, the best method and the parameters to improve efficiency in pricing IPOs, both from the point of view of investors, from the point of view of the issuer (issuing firm) and the selling shareholders.

[Almeida and Leal](#) based their experiment upon the work of [Bonini and Voloshyna \(2013\)](#), conducting all sessions with the support of *z-Tree* ([Fischbacher, 2007](#)), a software commonly used in Experimental Economics. Among the 9 experimental sessions, the 87 participants were composed of 38 students and 49 professionals in the financial market. Each of the 9 sessions consisted of 24 trials of simulated offerings, for a total of 216 IPOs.

Among the results of the simulations, it was found that bookbuilding was the pricing method that most benefited the investor, rather than the issuing company and the selling shareholders. The competitive IPO got the opposite result, benefiting the issuer and the selling shareholders at the expense of investors. The auction was in between. Furthermore, it was found that after an initial learning period (proxied by the last 12 offers the total simulated 24), bookbuilding was more efficient than the auction and the competitive pricing IPO method, assuming that efficient pricing is one where the average initial returns are near zero.

Another interesting point to note is that there were no differences in outcomes between students and professionals in the financial market. The results of [Almeida and Leal \(2015\)](#), which favor bookbuilding, are in line with [Cornelli and Goldreich \(2001\)](#) and [Wilhelm Jr. \(2005\)](#). Perhaps the growing literature supporting bookbuilding will encourage the development of this model in international markets, supplanting other pricing mechanisms.

The disposition effect describes the propensity of investors to sell too quickly assets that have appreciated in value ('winners') while holding for too long assets those whose values have decreased ('losers'), relative to a reference point (for example, the purchasing price of the asset). The seminal work by [Shefrin and Statman \(1985\)](#) was the first to connect the disposition effect to psychological arguments. In particular, Shefrin and Statman showed that this phenomenon could be explained by the prospect theory offered by [Kahneman and Tversky \(1979\)](#), complemented by other psychological traits, such as regret aversion.

The disposition effect has since been documented in sizable empirical literature, making it one of the most widely cited empirical regularities in the field of Behavioral Finance. However, the debate remains regarding the causes of this behavior, as well as its ubiquity. The second paper in this special issue, by [Lucchesi, Yoshinaga and Castro Junior \(2015\)](#) contributes to this debate by offering further evidence of this phenomenon, while attempting to disentangle alternative explanations for its existence.

Earlier papers, notably [Lakonishok and Smidt \(1986\)](#), have challenged the psychological explanations for the disposition effect arguing it might well be motivated by perfectly rational considerations, including portfolio rebalancing and transaction

costs. However, subsequent work has convincingly shown that these and other rational trading strategies cannot fully explain the strong disposition effect observed in the data. On the contrary, [Odean \(1998\)](#) and other researchers have shown that investors are systematically harmed by selling winners too soon and losers too late.

The precise psychological underpinnings of this behavior remain an open question, nonetheless, because alternative psychological traits and cognitive biases could motivate it. In particular, [Odean \(1998\)](#) points out that the disposition effect could originate from a biased belief in mean reversion, according to which investors (incorrectly) believe that losers will eventually recover and winners are likely to experience negative returns in subsequent periods. [Lucchesi et al., \(2015\)](#) are among the first researchers to empirically investigate this conjecture.

Their empirical analysis is based on a sample of active Brazilian equity funds with data from 2002 to 2008. [Lucchesi et al., \(2015\)](#) constructed measures of stock performance relative to a reference point (either the average purchase price or the average market return) in order to identify winners and losers. Additionally, they defined dummy variables based on the persistence of relative stock performance, using three-, six- and twelve-month horizons. [Lucchesi et al., \(2015\)](#) used a binary logit model to describe the decision by a fund manager to sell a stock and an ordered logit model to describe the proportion of stock sold by the fund. Results show that winning stocks are significantly more likely to be sold (and also be sold in larger proportions) by fund managers, consistent with the disposition effect.

In contrast, their analysis shows that the performance persistence dummy variables are not relevant, at least when the stock performance was negative in the previous three, six or twelve months. Therefore, the authors do not find strong evidence in favor of a belief by fund managers in mean reversion. Taken together, [Lucchesi et al., \(2015\)](#) interpret the evidence as suggesting that the disposition effect is better explained by the prospect theory than by a biased belief in mean reversion, thus reinforcing the usefulness of this seminal behavioral theory to explain relevant financial phenomena.

The third article, authored by [Rogers, Silva and Securato \(2015\)](#) aims to identify psychological variables that can be integrated into credit scoring models, aiming to predict the entry of individuals into default. The work is relevant to the extent that the variables used are traditionally focused mainly on the individual's economic position. This study emphasizes that individuals in similar economic positions may have different credit risk due to behavioral and psychological characteristics.

The methodology used for defining the psychological variables consisted of a questionnaire. Initially, the

questionnaire was validated in a convenience sample of 280 individuals and, later, between February and April 2010, the final questionnaire was administered to a sample of 975 individuals living in a city in southeastern Brazil, resulting in 555 individuals with valid and complete responses. This questionnaire collected demographic data and socio-defined scales of psychological variables of individuals that were related via logistic regressions with the individual's credit quality.

The authors conclude that the probability of default is positively related to: i) negative dimensions associated with money, such as conflict, suffering and inequality; ii) the individual's perception of self-efficacy, verifying that this is biased, through overconfidence and optimism; iii) inadequate purchasing behaviors such as compulsive buying behavior, and giving of gifts by individuals classified as luxury to friends and kids and still; iv) alcohol consumption. This evidence provides a theoretical contribution to the credit risk literature, in that it introduces new variables determining such risk.

The fourth and final article of this special issue of *RAE* concentrates on the theme of financial behavior of households, a topic of particular interest to both the academic community ([Antonides, Groot, & Raaij, 2011; Lynch, 2011](#)) and business ([Consumer Federation of America, 2013](#)). The study, authored by [Miotto and Parente \(2015\)](#), is developed from a modern approach, integrating two levels of analysis, one qualitative and the other quantitative. In terms of relevance and contribution, the central merits of this article are supported by two main features. First, this research provides an integrative view of theoretical aspects that are often approached in a piecemeal way in the literature.

Therefore, [Miotto and Parente \(2015\)](#), as recommended by [Antonides et al., \(2011\)](#), and based on data from a survey of more than 2,000 consumers, analyze personal characteristics of the decision maker, concentrating on the examination of its consequences and extensions, e.g. savings and default. In this sense, the empirical results achieved by [Miotto and Parente \(2015\)](#) point to the mediating role that financial management has on the relationship between personal characteristics and consequences of financial behavior, whether positive, such as savings, or negative, such as default.

Secondly, in terms of contribution to the field of Behavioral Finance, [Miotto and Parente's work \(2015\)](#), compared to results obtained in more developed economies, addresses Brazilian peculiarities. For example, it highlights: i) little, if any, savings, ii) inadequate focus on control, iii) reduced attention to financial planning beyond the short term, and iv) the critical influence of extreme events on the propensity to default.

It is understood that, due to Brazil's typical behaviors and to cultural similarities with other countries whose economies may be seen as less developed, these results may provide a stimulus for further research on the financial behavior of households, constructed around specific emerging economies (Mendes-Da-Silva, Nakamura and Moraes, 2012; Norvilitis & Mendes-Da-Silva, 2013).

## FINAL WORD

Finally, in addition to the progress made in the last ten years and, as discussed in detail in this Special Issue by Professor Shefrin, there is a clear research agenda. This schedule depends on the ability of researchers to establish sufficiently complex and diverse programs of research to enable the development work that builds on knowledge from different fields, contributing to greater completeness and collaborative networks.

Therefore, it is hoped that future research in Behavioral Finance may go beyond the description and verification of phenomena, toward prescription, whether in the personal, corporate, or public levels. In this sense, *RAE*, along with the guest editors who worked on this Special Issue devoted to the topic of Behavioral Finance, hope, with this initiative, to have contributed to the development of the field of Behavioral Finance internationally.

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