

**BEHAVIOUR FINANCE APPROACH TO SUBOPTIMAL CHOICES IN BANKING
BUSINESS: EMPIRICAL EVIDENCE FROM SERBIA**

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Abstract: Recent financial crises and the alternation of "euphoric and depressive phases", which have characterized the financial markets in recent years, have attracted the attention of many scholars who have begun to deal with a new line: Behavioural Finance.

A problem was therefore raised, that of the behaviour actually invested by investors, in making their investment choices, partly already raised by some scholars of psychology around the 1970s (Kahneman D., Tversky A., 1979). Kahneman was awarded The Nobel Prize in Economic Sciences for 2002 , what marked the period of the recognition of the importance of psychology in the process of taking economic decisions.

Behavioural finance is an alternative approach to classical financial theory that, by loosening some of the hypotheses of efficient market theory, seems to be able to provide better answers to the real outlook of financial markets than it could not make such a theory.

Behavioural Finance is the science that studies the functioning of the markets and the behaviour of the operators using knowledge and tools proper to human sciences, to have a realistic view of the complex and unpredictable financial world. It is a very young and still highly heterogeneous subject, since the set of concepts and models have been elaborated by a large number of scholars demonstrating a very different approaches.

The objective of the empirical survey is to study the decision-making process, based on a structured questionnaire, which is activated by the request of a client, bank of Belgrade, to grant funding.

Based on a research already conducted in Campania , the region of Italy, (Piccolo R., Editor's Guide, Naples, 2017), it was decided to extend the model to Belgrade banks as well.

Being a young and heterogeneous discipline , Behavioural Finance is still not offering many models that could have been applied in various decision-making processes. The pilot survey undertaken in the banks of Belgrade has shown differences between the way how the managers in Italy (and in Scotland – another study has been done in the banks of Scotland) and in Belgrade allocate the credits when having dilemmas or being uncertain.

Keywords: Behaviour Finance; credit allocation; sub-rational agents; irrationality; human judgment; bounded rationality.

1. INTRODUCTION

In the classical tradition of this discipline it is assumed that agents make unpredictable predictions about the future and decide to properly evaluate their interests. In practice, this means that the operator assumes that markets are efficient and that prices reflect fundamental values (Spanò M., 2005). It is denoted by the inability of the subjects to acquire and process the information received (Lacko J., Pappalardo J., 2004).

Behavioural Finance combines finance and psychology. It does not depend on the assumption that individuals are perfectly rational and markets as efficient as traditional finance, but starts from observing market anomalies and mistakes made by people, as discussed in the previous chapters. It is an extremely useful approach for financial advisor because it analyzes typical mistakes made by their clients and offers tools to limit their negative effects.

It is important, however, that the consultant is able to distinguish between cognitive, reasoning and emotional errors. Many people think they are smarter than the average investor. As a result, they often fail to seek out more reliable information and end up by underrating risks of considerable losses (Odean ,1999). In this regard, a more recent approach, is that of emotional finance, which even deals with unconscious emotions and how these affect investment decisions.

The inability to explain the functioning of financial markets and investor choices has led in recent years to revise various aspects of economic science according to a new optics, in which the psychological factor of the operators plays a new and much more important role. Concerning the suboptimal decision and the reflections of the bounded rationality and cognitive dissonance , that , per se, exists in the process of decision making, it is of high importance to evaluate this factors in the banking sector and measure the differences that occur as a consequence of institutional, regulatory and cultural differences.

2. THE RISE OF THE NEW HETERODOX THEORY

Behavioural Finance is that branch of finance that combines aspects of cognitive psychology and financial theories in the strict sense. It studies the behaviour of people faced with some economic and financial choices. Thus, it differs from the paradigm of the “Homo Oeconomicus” that characterizes the traditional approach and sees individuals as perfectly rational and omniscient agents, but to approach a more realistic vision in which people make mistakes, do not always act rationally or have no; trying to explain the so-called “anomalies” of the financial markets from this new point of view.

The behavioural study of finance has recent origins and dates back to the 1970s with the pioneering work of Daniel Kahneman and Hersh Shefrin, who were the first to understand that behavioural finance would represent the new frontier of corporate finance (Shepherd H., 2007). The aim is to make investors aware of the potential psychological traps in which financial managers are likely to face the various decision-making tasks they face.

In the opinion of Thaler (1981), people behave inconsistently. Examples in point are situations in which they show themselves risk-averse when trying to safeguard the interests of other people or circumstances under which they overrate their own competencies in stark contrast with the rationality assumption (Camerer & Hogarth 1999). As a result, when called upon to solve complex problems, they tend to use heuristics, i.e. mental shortcuts (Gabaix, Laibson & Weinberg 2006), and to rely on the influence of their emotions¹ (Della Vigna 2007).

Often mistakes resulting from psychological phenomena can be very expensive, the study of behavioural finance is of primary importance (Shefrin H., 2007). Moving away from rationality is attributed to the effect of agents cognitive mechanisms, and this applies to both investors and managers (Piccolo R., 2017). Shleifer (2000) has argued that it illustrates human failure in competitive markets; Lintner (1998) has offered a description of the way people read and use information when called upon to make investment decisions.

The behavioural finance applied to cognitive psychology has demonstrated the violation of axioms of rationality and the lack of coherence and stability in the preferences of real investors.

The emotional investor, using intuitive cognitive processes, often based on emotional reactions, is able to change his decisions based on the decision-making context, the amount of information being provided or even according to his “mood”.

Daniel Kahneman and Amos Tversky are among the most active authors in showing that the behaviour of real people does not necessarily conform to the axioms of rationality that are the basis of the expected utility theory. Most of the discrepancy between the decision-making behaviour of economic models and the real behaviour put into effect by investors can be captured by a model of decision-making that Kahneman and Tversky developed on the basis of their studies of violation of rationality axioms.

This is the “prospect theory” which is a model that attempts to describe, rather than anticipate, the way people make decisions. In this sense, the theory of the prospect goes hand in hand with the utility theory without pretending to replace it (Kahneman D., Tversky A., 1979).

Kahneman and Tversky’s 1979 prospect theory is an alternative option to the classical utility model² (Ferretti, Rubatell & Rumiati 2011) which is designed to explore types of behaviour departing from the rationality criterion (Rossano 2012).

Prospect theory highlights a greater level of investor sensitivity to prospects of pecuniary loss than prospective gains and the tendency of investors to assign different weights to possible outcomes (Lucarelli, Alemanni & Brighetti 2012).

Behavioural finance aims to foster classical economic notions, which in fact become a benchmark used to evaluate the quality of investors choices. Most humans base their decisions on empirical rules, called Heuristics.

Psychologists Kahneman and Tversky, have conducted several experiments to investigate the mental processes that agents use in evaluating choices in conditions of uncertainty. In their studies, they have shown that individuals think through heuristics, that is, cognitive filters that can simplify and approximate information, but can also lead to errors and bias.

The biases by which most people are systematically affected to the point of acting irrationally can mainly be traced to the use of mental shortcuts (or heuristics) , i.e. methods to simplify issues which are perceived as overly complex (Consob 2011).

¹ The findings that emotions do impinge on decision-making and that different emotions act themselves out in a variety of different manners have been highlighted in a vast body of psychological literature (Della Vigna 2007).

² In *Kahneman* and *Tversky*’s approach, the term ‘prospect’ stands for a lottery, i.e. for the full range of possible outcomes of an option and the probabilities associated with it.

In particular, it is an intuitive estimate mechanism that allows decisions to be made by reducing the complexity of the problem, and thus reaching decisions that are not necessarily rational and optimistic are based on simplifications and intuitions.

The main axioms of behavioural theory are Heuristics and Bias. The first are subdivided into the Heuristic of Representativeness; Availability; Anchorage and heuristic of Affect. The seconds, on the other hand, are Excessive Optimism, Overconfidence, Confirmation Bias and Illusion of control.

Representative heuristics establishes that, individuals to process information and formulate probability judgments are based on stereotypes and family situations (Tversky A., Kahneman D., 1974). Consequently, they evaluate the probability of an event considering two aspects: the degree of resemblance to the population from which it is drawn and the extent to which it reflects the essential characteristics of the process that generated it.

It refers to the fact that people often argue on an intuitive basis. By watching an event, individuals tend to associate it with a stereotype, that is, they see that event as representative of a more general class of events (Lewis, 2000). Representativeness is dangerous because stereotyping often leads to mistakes. It also drives the decision makers toward drawing conclusions based on a too limited number of information, but also giving too much importance to the latest news, regardless of their importance. It is known that unfortunately individuals have difficulty in probabilistic calculation and do not give enough weight to statistical information.

A widespread phenomenon in human processes is known as "middle to back" and is indicative of the evidence that although it is possible to observe extreme values, it tends to return to the mean value. The Availability heuristics intervenes in the information gathering process and makes people more reliant on news that is more and more easily accessible, though not necessarily the most relevant ones to make the decision.

Kahneman and Tversky, psychologists among the most well known behavioural finance scholars, have conducted various researches that show that individuals are influenced by the ease with which they can be recalled (heuristics of availability) in the acquisition of information.

Experience teaches that it is easier to remember numerous, rather than rare, events. These probabilistic and frequent events are easier to reconstruct and imagine rather than unsuitable ones.

Availability is the first filter that is used to reach a probability judgment, in the implicit assumption that the most frequent events are easier to recall in the mind. However Availability is also influenced by factors other than frequency, with the result that the link between Availability and frequency is far from perfect: this can lead to erroneous considerations when the most available information is not even the most frequent.

The study of frequency independent factors that have an impact on availability helps to understand the main constraints of heuristics (Simon, 1957).

Availability operates according to two different mechanisms (Rumiati R., 1990):

- Availability for construction, which concerns the way people use information to build examples or simulations;
- Availability for recovery, which relates to how the examples are drawn to the mind by natural categories.

When drafting a judgment, subjects often adhere to certain benchmarks they have in mind and do not deviate from them, but instead become a leverage, even when economic scenarios change (think of the different forecasts of growth in expansion periods and recession).

The anchorage heuristics states that in many situations, individuals formulate forecasts or estimates starting from an initial point and proceeding for subsequent adjustments. The starting point may be an estimate made previously or formulated by other subjects.

Anchorage is a wide spread phenomenon that can, at least in part, contribute to explaining estimation errors and the delay in reacting to new information.

As for heuristics of affect, psychologists use this technical term to indicate the intuition or instinct with which the manager tends to base their decisions. This heuristics is made up of the feedback provided by our emotions, and demonstrates how emotions are central to human behaviour.

With the term "emotion" are also defined the relatively intense feelings that people often feel about a company they want to invest or about the prospect of putting a decent amount of money through a good deal. Feelings different from the uncontrollable joy we can experience. Feelings we do not even notice and influence our evaluations even when we think we have put in place a detailed and analytical evaluation.

An additional factor by which the behaviour of irrational people appears to be affected is noise, i.e. wrong information circulated in markets (Beal, Goyen & Phillips 2005). The term "noise" is not only used in connection with financial matters, but in a variety of different contexts. In financial markets it denotes the exact opposite of reliable data (Campbell et al. 1987).

Investors who do not have access to privileged information and tend to rely on 'noise' in open contrast to rationality are termed 'noise traders' (Kyle 1985 and Black & Fischer 1986).

3. EMPIRICAL RESEARCH DESIGN

The Blueprint of the Research Project

After carrying out a comprehensive and thorough literature review on Behavioural Finance as outlined above, we will outline the results of an empirical survey conducted on a sample of banking institutions operating in Belgrade.

The research project is aimed at studying the decision-making process that activates the client's grant application for funding.

Given that the studies on the phenomenon being investigated are scarce, scientific literature has not yet produced a consolidated corpus of theories and empirical approaches, so research has adopted an exploratory approach; in particular, the empirical study was conducted through a quantitative approach, since it was considered more appropriate to the nature of the investigation.

In addition, considering the complex and multidimensional nature of the phenomenon, the research has focused on several areas, including: General Aspects of the subject who issues the loan; Financial Aspects of the borrower; the Psychological Aspects of the borrower, and finally the Exogenous Aspects, that is, those related to the social-cultural context of the relationship with the applicant.

The research analyzer is made up of managers and employees of banks based in Belgrade who participate in the decision-making process for granting credit.

Data collection

In the concrete practice of research, the information gathering phase is often reserved for little attention; Thus, despite the exponential growth of data analysis techniques in recent years, data capture techniques seem to have been invoked: "By reading research reports, it seems to me that increasingly sophisticated statistical techniques are being applied to data increasingly poorer" (Marradi, 1987, 4).

Conceptual dimensions have been identified through a structured questionnaire.

As regards the construction of the items that make up the questionnaire, depending on the nature and complexity of the property to be captured, it was chosen to adopt different operational definitions.

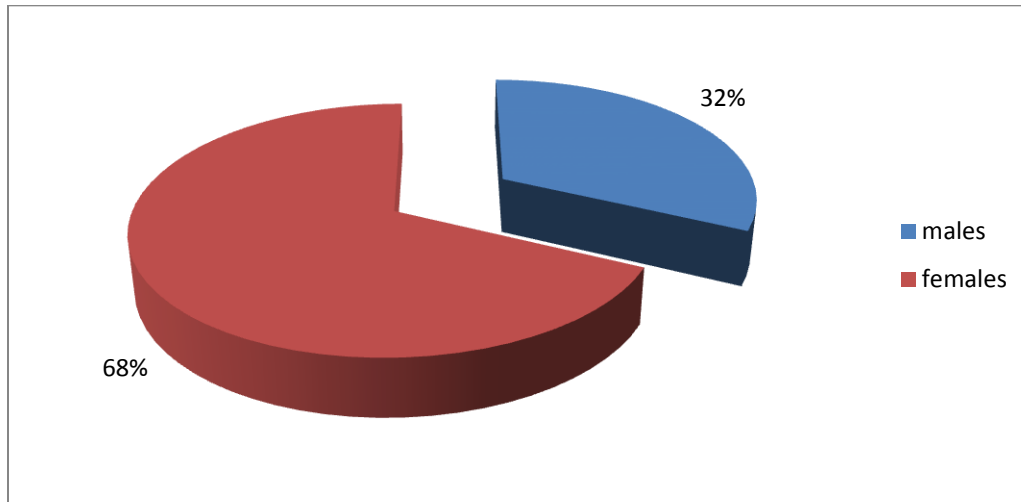
Some variables were detected with closed-ended questions, subsequently transformed into categorical or ordinal variables in the data matrix. The most complex conceptual dimensions, such as risk appetite or credit-related factors, have been defined operationally through sets of indicators that then become battery items detected with Cantril scales from 1 to 10.

The above-mentioned question concerns the preparation of the questionnaire given to the operators of the institutes operating in Belgrade.

Characteristics of the banking sector in Serbia

The economy of Serbia has shared much of the transitional processes characteristic for other post-socialist countries. Serbian financial sector experienced a number of bankruptcies and breakdowns, plus a long period of dramatic inflation. After 2000, a number of banks became subjects of privatization. The process was followed with a huge inflow of foreign banks to the Serbian market, some entering the portfolios of the existing banks, some being foreign direct investments. Other financial institutions, such as pension and mutual funds, have just 10% of the balance sheet assets, so, the financial market could be named as "bank – centered" market. (Loncar, Rajic....), having midly oligopolistic structure. The sector is regulated by the National Bank of Serbia, and, besides the turbulent situation in the real sector, banks are showing stability. There are also some threats when speaking about the credit risk and uncertainty in the process of credit allocation. The risks (Jovic,2017) come from the long term depreciation of the domestic currency (2017 represents an exception, for the time being), nonperforming loans, the fall of the prices in the real estate sector and a high unemployment (although decreasing in the recent period) rate.

Fig. 1 – Percent distribution of interviewees by gender



More than half the interviewees are females (70%), while males account for the remaining 30% of the total (Fig. 1).

Tab. 1 – Distribution of interviewees by marital status

	a.v.	%
Single	24	30.0
Married	22	27.5
Domestic partners	18	22.5
Separated	8	10.0
Divorced	8	10.0

Breaking down the interviewed by marital status are: 30% of them are single, 28% are married, 10% were separated and lastly, 10% were divorcees (Table 2).

Tab. 2– Distribution of interviewees by number of children

	a.v.	%
No Children	18	20,7
One child	23	26,4
Two children	26	29,9
More than two children	20	23

Most respondents have children. Indeed the 80% has got children, whereas the 20% of the bank staff members in the sample do not have children (Table 3).

Tab. 3 – Seniority of service in the banking sector

	a.v.	%
Four-five years	6	7,0
Six-ten years	38	43,7
Eleven- sixteen years	43	49,3

Most of them are seasoned veterans of the banking sector overall and, specifically, of the credit initiation and authorisation process. Indeed:

- 93% of them boast seniority of service in the banking sector, whereas 7% of them have been employed in this sector for four to five years (Table 4).

Tab. 4 – Seniority of service in the credit initiation and authorisation process (years)

	a.v.	%
One-two years	2	2,5
Three-ten years	64	73,5
Eleven-fifteen years	21	24,0

As regards seniority of service in the credit initiation and authorisation process, 74% of respondents work from three to ten years, 24% from eleven to fifteen and the remaining for one to two years (Table 5).

The credit authorisation process

During the credit initiation stage, the decision-maker simultaneously considers and weighs a number of aspects which shed light on the applicant's position.

In other words, the decision-maker screens the applicant's financial situation and psychological as well before deciding whether he/she should be categorised as creditworthy.

The indicators selected for each sub-dimension were incorporated into sets of items measured by means of 1 to 10 Cantril scales.

It is worth mentioning that the Financial Aspects to which the respondents were found to attach crucial importance in view of a loan authorisation include (Fig. 3): the credit applicant's Indebtedness (mean score 7,2), Balance (6,9), Rating and Market researches (6,6), Macroeconomic cycle (6,2) and Customer's debt situation (6,0).

Fig. 3– Relevance of Financial Factors in the credit authorisation process (mean scores)

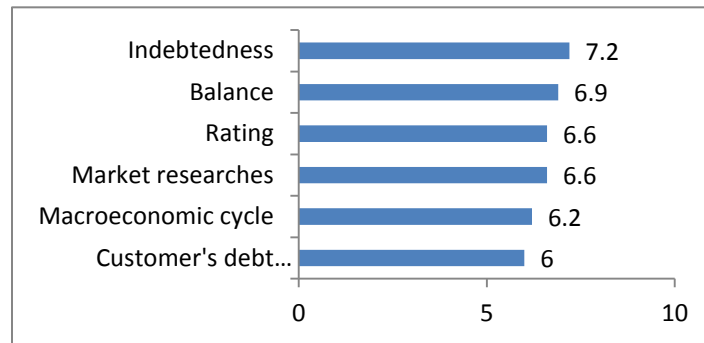
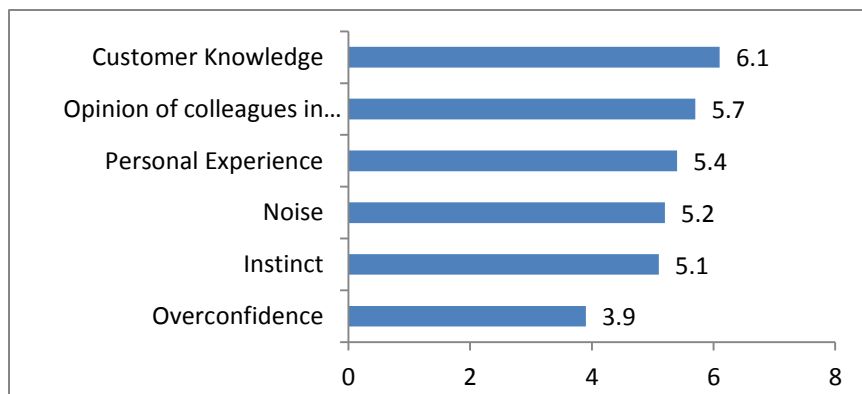


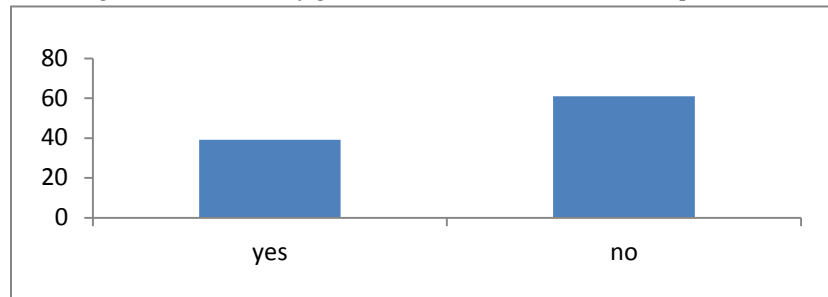
Fig. 4 – Relevance of Mental Processes in the credit authorisation process (mean scores)



As far as the psychological / behavioural dimension is concerned, in the perception of respondents, the most important experiential factors for the authorization of a loan seem to be the knowledge of the client (6.1) and the opinion of colleagues (5.7).

Personal experience (5.4), noise (5.2) and instinct (5.1) seem to count a little less. Overconfidence (3.9) seems to be irrelevant (Figure 4).

Fig. 5 – Relevance of gender in the credit authorisation process



The purpose of this question was to find out whether the gender (male, females, other) was, in some way, influenced by those dealing with the lending process.

Respondents do not give any importance to the gender when they have to grant a loan (Fig. 5). This is an expected results since the banking business is highly regulated and the banking staff has been regularly trained.

4. CONCLUSIONS

This research has therefore focused, as mentioned above, on the implementation of the principles of Behavioral Finance in the banking sector of Belgrade. If in Campania (Italy), research confirm the existence of psychological factors affecting the choices of those who have to do with the granting of credit, Belgrade seems to be different. The analysis of the aforementioned sample tends not to reinforce the main thesis of behavioural psychology, thus rejecting the axiom of the decision-making rationality of traditional finance by bankers called upon to grant a loan to their client if the demand for credit must be. In particular, research has shown that what matters most are the financial aspects. Particularly they seem to pay much attention to how much a customer is indebted when requesting a loan. There are many reasons why the first, although produced via very small sample, are very different from the results obtained in the surveys in Southern Italy (and Scotland). The turbulent history of the banking sector in the last three decades, pushed the attitude toward following the precise procedures that are regulating the credit allocation process strongly. Secondly, due to the dynamic changes among the key actors (banks entering the market in Belgrade), the traditional links between the clients and bank officers, like in Italy, have still not been created. Also, knowing that Serbia is characterised (together with Moldova and Cyprus) with the lowest level of generalized trust (Zaric, Babic, 2010) it is more understandable that banking officers relay much more on the financial data and recommended formulas for credit allocation.

Another important aspect is the budget they attach to a key role. So they do not rely on their instincts, their knowledge, and their confidence in their skills. An important aspect is also the seniority of service in the deliberative chain. Behavioural Finance must support the expansion of traditional financial theories, with the introduction of new factors such as psychological, emotional, etc.

Having conducted the present, essentially through a questionnaire, respondents may not have responded in a "sincere" manner to the questions. There might be bias in the answers; this certainly constitutes a limit to the same. Creating batteries with different questions could improve further surveys.

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