

# A DESCRIPTION OF PSYCHOLOGICAL BIASES ON THE CURRENCY MARKET

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**Abstract.** *This article concentrates on the theoretical review of the behavior of market participants from the behavioral point of view. The focus is on currency market and its participants; thus, the most relevant behavioral inclinations are described in the article. In finance literature, behaviorism is heavily connected with the understanding rationale of the financial agents, acting on the financial markets, but for us to consider the broader picture, the behavioral aspect might be a very helpful tool for analyzing actions of economic agents on a more global scale. In this article, the main focus is on the currency market and its participants, namely the government and/or central bank as a policy maker and implementer on the one side of the market, and private rationale agents, concentrated purely on commercial return maximization and risk minimization, on the other side. Obviously, the private agents interact with each other and it forms a standard game theory framework, but more interesting is the relationship between the policy maker and the rest of the market, their incentives, perceptions etc., which are described in this article. The article strongly suggests that behavioral analyses should be one of the main pillars for analyses of the general economic environment and for currency crises analyses as well.*

**Keywords:** *behaviorism, cognitive biases, currency market, government/central bank.*

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## 1. Introduction

During the analysis of the currency crisis, one of the most important factors that might affect the economic outcome of the crisis is the behavior of economic agents. For the more profound analyses, it is not enough to just describe the decision-making process or framework of the market participants. It is much more vital to understand the motivators that might affect and motivate the implementation of different strategies from market actors. As we mentioned the decision-making process and the potential motivators, it would be very essential to introduce the general concept of game theory and the currency crisis model that can be viewed within the framework of potential games, where several players participate. As in a general multistage game framework, the players make decisions separately and independently or in cooperation. In any case, they have to analyze all the available information and, in addition, the activities of other market participants are the

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factors that must be taken into consideration. As we can guess, information asymmetry or other market inefficiencies might be the problematic issues for the existence of effective markets and thus economic downturns become more probabilistic. However, the second important problem of the currency crisis is the particular behavior of market players, their respective expectations, and what might be the critically essential apprehension and the perception of the risk they face (Kahneman 1982). On the one hand, we may presume how an economic agent will behave in the given circumstances; we may analyze the so-called risk-return profile they try to achieve etc. Although, on the other hand, it is important to figure out how he/she chooses and forms this or that strategy and why a particular economic agent makes respective assumptions with regard to the actions of other market participants. We have to underline one important aspect for all of our analyses: all decisions on the market are taken by particular individuals, and, logically, we may presume that there are many subconscious motivating factors affecting their particular behavior. The latest finally has direct influence on the structure of the market and the general condition of the whole economy. Thus, we can state that studies of the behavior of the market participants, or behaviorism, can be actively involved in the analysis of not only particular economic or financial situations, but also the general economic environment. This might give us the opportunity to comprehend the reasons of any economic problems in much more depth (Harner 2010).

The recent financial crisis made it very clear that, in line with fundamental financial and economic problems that might have been identified as main reasons for crises, equivalent importance should be given to the fact that an incorrect assessment of financial and non-financial risks occurs from the market participants' perspective, and subsequently incorrect response to such risks and ineffective methods of re-insurance are main contributors of crisis. Yet we can argue that such risks were not caused mainly by arithmetical inconsistencies, namely, the mathematical and statistical errors, and it would not be correct to state that the currency crisis has taken place due to the fact that, for instance, one of the economic agents had incorrectly calculated the probability of its loss. The more important point is to discuss why economic agents made decisions they made, why did they use the risk assessment model they did etc. If we follow this logic, then we realize that we are trying to analyze the decision-making process, under which we do not mean structural characteristics or corporate governance difficulties. First of all, we mean the motivators for decisions made at any stage of the process, and more specifically we try to concentrate on various psychological factors, that influence the decisions makers as well as on individual level, also within their interaction with the external world and other participants of the market. This is the factor that is most difficult to manage, while it does not obey the mathematical calculations and formulas.

Accordingly, it has become necessary to elaborate certain approaches, frameworks and models, which would make the behavior of the market participants and their decision-

making logic more or less predictable. But as we deal with the human factor, to increase the predictability of their actions still remains very problematic – the model would be successful if numbers of wrong predictions will be decreased.

An important factor for the analyses is that while describing the model, we should emphasize the fact we are not concentrating only on the relations between two private market participants, but we are also including the government and/or the central bank, as it is one of the most important market participants. Their goals might be different from the goals of typical profit oriented commercial actors, but as an economic, fiscal and monetary policy maker, their short and long-term targets give particular direction to the market movement. In our framework of analyses, we can state that the policy maker (government/central bank) defines the rules of the game on a currency market, thus motivating economic actors for choosing certain strategies. Although in order to predict the behavior of economic agent, it is necessary to identify the grounds and motivation causing such behavior correctly. There may be various influential factors, but all of them finally come to one general and common subject: perception of a risk and the risk management alternatives. It can be argued that risk perception is the cornerstone for the decision-making process, and it is the main effecting factor on behavior of economic agents.

During the relevant time period, the economic agents gather relevant experience and information that give them a sense of familiarity and competence and form a likewise approach to different economic or financial variables. Though such an approach is subjective: as different researches and relevant literature suggests, the cognitive perceptions and aspirations of investors may have a decisive role toward a similar behavioral pattern, thus making standard mistakes.

## **2. Literature Review**

In many different literatures pieces regarding risk management, (Crouhy 2006; Bodie 2000) it is stated clearly that risk perception is the most crucial factor in investors behavior analyses. Before taking any economic decisions, any rational market participant has to answer very simple question: what is the acceptable volume of risk for each unit of rate of return? The same question may also be formulated otherwise: what is the volume of the rate of return for each additional unit of risk in order to compensate for the volume of risk taken? The answer to this question, and, accordingly, the investor related risk-return profile, are the primary factors that shape their strategy. All the economic decisions, regarding investments, risk management, or on more global scale economic policy, come down to these basic questions.

Moreover, according to Vedpuriswar (2005), the risk itself is an abstract term; it is not tangible, and for that reason the term “concept” can be used to describe the idea behind the risk. But in any case, for investors concept takes more concrete form in numbers

and returns. As a cornerstone of the financial theory, the most important assumption is that rational investors are willing to maximize the profit for any given level of risk. Accordingly, in order to achieve this, they need to take economic decisions. As we have seen above, such decisions cannot be made separately and they are closely integrated to the perception and strategy of other market participants, and to their responsive measures and decisions. This type of interception, or the economic game, if we might call it, is the general framework for the investors; thus, their answers to the abovementioned basic questions directly affect the economic outcome of the game and, in more general terms, the economic situation and market condition. It is more obvious to see that such clear relationship exists within any financial markets, but for global or macroeconomic analyses more fundamental economic variables might be considered, but there as well, as all the economic decisions are made by individual decision makers, the problem is narrowed to the particular economic decisions and factors influencing them. In Behavioral Finance literature there are many different cognitive biases discussed and their role assessed, but, in this article, we only outline the ones that are more relevant in the macroeconomic scale and for the currency market in general.

### **3. Behavioral Biases**

#### ***Overconfidence***

In most of the behavioral finance literature, overconfidence is considered to be one of the main factors that influence risk perception and follow investment activities of the financial agents (Daniel, Titman 2000). The majority of the economic agents, especially in the situation where the risk plays very important role, tend to overestimate their own skills, predications, abilities and knowledge. According to Shefrin (2006) people always tend to be more overconfident when they face tasks difficult by nature. If we look at this bias in a more macroeconomic scale, we can suggest that when the economic agent tends to suffer from this bias, it would be extremely difficult for him/her to evaluate the result of such error, while establishing such a link between bias and results is more difficult if we compare it to a more local, particular financial situation. Such a behavioral bias might be especially common for the government, which, as we have already mentioned, is affected by many non-economic factors, and needs to be confident in the correctness of its own decisions, not only because of economic rationale, but from the political point of view as well. In addition, if we add the effects of the Availability Heuristic, which states that investors in most of the situations are biased toward the information that is easier to access, is better publicized, is more recent and more vivid (Ricciardi 2004), we can assume that the cumulative effect of those two behavioral anomalies might push governments into the wrong direction.

Moreover, it is interesting to note that the likelihood of similar behavioral (thus the same cognitive error) bias increase with the accumulated expertise, directly affecting predictive accuracy of the market participants, and, as a result, forces them to create and implement inaccurate risk management techniques.

It should be also pointed out that economic agents ignore or pay not much attention to the odds of a possible risky outcome, while they are sure that their hedging methods against those risks will be effective. In addition, when from time to time they have to face the same problem, investors tend to make the same mistakes because of their over confidence about their own abilities (Ricciardi 2004).<sup>1</sup>

The currency crisis, as a problem, may be perceived homogeneously and, as we can see, it can be influenced by a homogeneous reaction. Although, based on different researches, homogeneous crisis, at one glance, are different from the point-of-view of their content and their precises economic fundamentals have been different as well. Accordingly, the use of the past example or the experience by the government cannot be the guarantee of success.

In most cases, the phenomenon of over confidence, as a rule, develops in parallel with several other related behavioral tendencies, from which we may underline the so-called illusion of control and over optimism. It can be asserted that investors, especially in the situations that have higher risks, are more inclined to taking such decisions, which, as they think, can be controlled by them at any stage of implementation (Heaton 2005). Accordingly, a decision by investors, which is taken on the basis of considering such a wrong opinion, is deemed to be unsuccessful from the very start. Although we shall not forget that in neither case, investors do not act separately and independently from each other and from the market and the decisions made by them do have influence on whole market returns. Accordingly, the incorrect signals and incorrect strategies on the market bear the elements of inefficiency and irrationality, which might be the main grounds for originating the crisis in the long-term perspective.

Another subform of the overconfidence bias is the situation called “Projection Bias”: The economic agents strongly believe that they are able to forecast behaviors of other market participants. Moreover, they consider that they not only know how others will behave, but they are able to assume that such behavior represents a rational choice of other market participants. If such rationale investors and/or markets exist, then there would never be the motivation for economic agents to move away from the unique Nash Equilibrium point.

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<sup>1</sup> A specific form of overconfidence behavior is the concept of “It won’t happen to me” bias. This is the case when individuals think that it is almost impossible for them to face some particular types of risk on an individual basis (Ricciardi 2004).

## ***Loss Aversion***

Proceeding from the fact that during the analysis of many economic situations, including the currency crisis, the question to be answered is how adequately we assess the risk and how rationally we could forecast the behavior of economic agents. In classical finance literature, it is argued that risk can be measured with the help of concepts such as variance and skewness (Olsen 2000). But alternatively, in behavioral finance, when discussing the risk notion, scholars are paying more attention to the concept of loss aversion, which can be interpreted as the pattern when the rational investor is always inclined to loss aversion, rather than to the additional risks (Ricciardi, Simon 2000). As the Prospect Theory might suggest (Kahneman, Tversky 1979), for the economic agents, the amount of loss is more critical than the volume of potential rate of return. While within the classical financial methods we can define a risk-return profile of the economic agent, and accordingly predict or assess the economic or financial strategy, on the other hand, with the help of the behavioral finance concept, we could analyze the behavior of the market participants beyond particular values and establish examples and patterns of their behavior.

The loss aversion bias also highlights one interesting tendency: the most of investors are ready to take even more risks to be able to avoid additional losses (Ricciardi and Simon 2001). In most cases, this happens subconsciously, otherwise a decision to take risk would be irrational. Although as we have already mentioned, economic agents often behave irrationally, which means that during the planning of the own strategy, the market participant has to foresee any rational or irrational responsive actions by another market participants.

There are many researchers who assert that loss (lack of loss) is twice more important for the investors than profit, meaning that, for instance, losing 100 dollars hurts twice more than gaining the same amount of money. In other words, the investor is more satisfied with not losing USD 100 than he/she would be by gaining the same amount. If we would discuss this bias in the context of currency crisis, we would state that the aversion of loss is one of the key factors that motivate the market participants (in this case of speculators, banks etc.) to attack the currency exchange rate or to refrain from such an attack. The government, as a policy maker, may use such incentive and provide certain signals to the market during the elaboration of the strategy so that potential risks are clearly seen by the market participants (for example, in the case of an attack to the currency exchange rate) and encourage them to refrain themselves from attacking the currency regime.

## ***Framing***

Literature pieces about behavior finance suggest that the development of a strategy, when the investors perceive the risk, and the approach of the investors toward such risks and their assessment significantly depends on the context the problem is presented. Namely, the decision maker is rather inclined to avert risk when the matter is presented in the positive context, while, in the case of the negative context, the outcome is reversed – the decision maker is inclined to take the risk (Duchon, Ashmos, Dunegan 1991). For instance, we can review the example of the context presentation: let us assume that the economic agent faces the following alternatives: in the case of the investment of USD 1000, the investor may:

- Obtain profit in the amount of USD 200 today – this is a positive context;
- Lose USD 800 – this is a negative context.

Despite the fact that the final result in both cases is the same, the majority of economic agents prefer to choose the first alternative, while the context is positive. A research by Kahneman-Tverski also provides for one more example to underline the importance of the context: 93% of students were registered on the course earlier, when the penalty with regard to late registration was emphasized, and where there was a discount for the early registration, the number of registered students was decreased to 67% (Gächter, Orzen, Renner, Stamer 2009).

Based on such dispositions, absolutely identical events or one and the same type of risks may be perceived by the market participant differently, depending on the context. Accordingly, the effective way of risk management or the effective strategy may have opposite consequences in different cases. Besides, if we consider the fact that the economic agents representative partiality, then we may conclude that there is a great probability that they will choose the strategy that is familiar to them and that the selected strategy would likely be irrelevant.

Based on the abovementioned, it could be explained why one and the same behavior of different currency market participants in different countries and different time periods might cause different consequences. Besides, the similar behavioral tendency may be the reason of why the government implies the same approaches for overcoming different currency crisis of different nature.

## ***Consensus Effect***

While experiencing the over-confidence bias, economic agents also seek to obtain confirmation from other parties as well, while they like when others agree with them. This is why, on the one hand, they choose a strategy (considering the abovementioned behavioral paradox) that is acceptable and familiar in every detail, but if there is no such familiarity, they try to create or modify the situation in order to make it more comfortable.

In such cases, economic agents try to gain additional justification and substantiation for their choice, by which they totally ignore the opportunities of the new strategy and approaches.<sup>2</sup>

One of the sub-category of such behavioral tendency is the case where the economic agent takes a decision similar to the group of investors he affiliates himself with. The economic agent considers that if others – investors with similar approaches and risk-return profiles – select a particular strategy, then an agent should choose the same strategy, as he believes that others are rational and they would have chosen the most effective strategy available for their goals. Although in this case, the final consequence of the strategy rather depends on the number of external and independent variables and there are no rational cause and effect relations between the selected strategy and the final economic outcome.

### ***Other inclinations***

Apart from behavioral biases discussed above, we can also list some other important cognitive inclinations that influence the perception of risks by the investors and, accordingly, their further decisions, and those that might be more relevant to the currency market and its participants:

- **Magic thinking** – as we have already mentioned, the inclination towards self-confidence may play an important role in the risk management process. When the investors have such a bias, they think that they can control the events that originate as a result of decisions taken by them. Yet, actually, they ignore the probabilities of extreme consequences and their belief that they control everything is not true. Moreover, most investors think that they can influence the events that originate independently from them. The reason of such an inclination may be an over-stressed environment, the series of positive consequences or over emphasis on results.
- **Home effect** – one more interesting behavioral anomaly, which might also influence the risk perception and decisions by the investors, is called the “Home Money Effect” – the case when the investors can tolerate higher risks with easily obtained money or with the profit gained from the investment rather than in the case of investing their own money.
- **Prediction and Confirmation Bias** –The first one is the bias when the economic agents have an idea that the crisis may have been foreseen and predicted, although with no factual evidence of it and actually no such knowledge before the actual crises. In such a case, the past facts are incorrectly interpreted by the market participants: they think that they knew about some particular event “from the very beginning”

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<sup>2</sup> “The 12 Cognitive Biases That Prevent You from Being Rational,” retrieved from: <<http://io9.gizmodo.com/5974468/the-most-common-cognitive-biases-that-prevent-you-from-being-rational>>.



and, accordingly, they fail to realize the incorrect and partial assessment of the strategy taken by them, which directly influences their future actions. The best example of such behavior is the financial crisis that occurred in 2007-08 – when the main market participants believed that they had more or less predicted the strong decline of the financial market. Researches conducted by different organizations (Business Week, National Association for Business Economics) showed that by the end of 2007, the upper and lower limit of the increase of the S&P 500 would be 1.350 and 1.780. Although, in reality, the lower limit of the mentioned index at the end of 2008 reached 891.<sup>3</sup> The second phenomenon, which we might call the confirmation prejudice, is the behavior when the economic agent, after the strategy taken by him proves to be unsuccessful, tries to think of arguments and facts from any past experiences, only to “verify” their decision and prove to others that their strategy had been rational. In other words, they conduct their analysis in a selective manner – they use only the part they think to be favorable for them. Very close to this phenomenon are the inclination toward late assessments and the inclination towards wrong memories: the first one is the case when the investor believes that he/she might very well have predicted what would have happened, while the second case is related to the situation when the investors believe that they have predicted and have known what would have happened, although they have not done it.

#### **4. Conclusion**

Finally, it is evident that the perception of risk and other perception factors play a more significant role in risk management than in the case of classical financial methods. The risk, within its context, is the main factor that encourages investors to take decisions. The risk assessment and proposed risk management techniques are the main preconditions for financing decisions, including currency market activities, from market participants, speculation attacks on the currency exchange rates, possible government measures and policy etc. Despite of the types of players on the market, private investors, institutional investors or the government, particular individuals carry out the perception and assessment of risks and decision-making based on such an analysis. Hence, in the process of taking decisions by the investors, the ignoring of different psychological and behavioral factors shall not lead us to the right consequences. During the process of decision making by actors of the currency market, behavioristic inclinations may play an important role. The allegation that the correct and precise analysis of such inclinations may be the guarantee of taking rational decisions by the investors might be premature, although we may assert that such an analysis will help the investors to take more rational and reasonable decisions.

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<sup>3</sup> <<http://seekingalpha.com/article/58150-business-week-2008-forecasters-expect-further-gains>>.

## REFERENCES

- Bodie Zvi, Merton Robert C., 2000, *Finance*, Prentice-Hall, Inc.
- Crouhy Michel, Galai Dan, Mark Robert, 2001, *Risk Management*, The McGraw-Hill Companies, Inc.
- Crouhy Michel, Galai Dan, Mark Robert, 2006, *The Essentials of Risk Management*, The McGraw-Hill Companies, Inc.
- Daniel, K., Titman, S., 2000, *Market Efficiency in an Irrational World*, Working paper 7489, National Bureau of Economic Research.
- Duchon D., Ashmos D.P., Dunegan K.J., 1991, *Avoid decision making disaster by considering psychological bias*, Review of Business, 13, 13-18.
- Dvorsky, G., 2013. "The 12 Cognitive Biases That Prevent You from Being Rational." Retrieved from: <<http://io9.gizmodo.com/5974468/the-most-common-cognitive-biases-that-prevent-you-from-being-rational>> [Last Accessed: April 07, 2017].
- Gächter, S., Orzen, H., Renner, E.; Stamer, C. ,"Are experimental economists prone to framing effects? A natural field experiment". Journal of Economic Behavior & Organization. 2009
- Harner Michelle M., *Barriers to Effective Risk Management*, 2010, The Social Science Research Network Electronic Paper Collection
- Heaton J. B., 2005, *Managerial Optimism and Corporate Finance*, Advances in Behavioral Finance: Volume II, Thaler, R. H. (ed.), New York et al., page 667-684.
- Kahneman, D., Slovic, P., Tversky, A., 1982, *Judgment under Uncertainty: Heuristics and Biases*, New York: Cambridge University Press.
- Olsen R.A., 2000, *The instinctive mind on Wall Street: Evolution and investment decision-making*, The Journal of Investing, 9(4), 47-54.
- Bespoke Investment Group, 2007, "Business Week 2008 Forecasters Expect Further Gains." Retrieved from <<http://seekingalpha.com/article/58150-business-week-2008-forecasters-expect-further-gains>> [Last Accessed: April 07, 2017].
- Ricciardi Victor, Simon Helen K., 2000, *What is Behavioral Finance?*, Business, Education and Technology Journal, Fall.
- Shefrin H., Statman M., 2001, Behavioral Finance in the Financial Crisis: Market Efficiency, Minsky, and Keynes, Santa Clara University, November
- Vedpuriswar A.V., 2004, *Risk Management – Nothing Risked, Nothing Gained*, Business Line, Internet Edition, Financial Daily from THE HINDU group of publications.