THE IMPACT OF BEHAVIORAL FINANCE ON STOCK MARKETS

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Abstract:
This article presents a new approach in the analysis of capital markets, namely behavioral finance. Behavioral finance is the study of the influence of the psychological factors on financial markets evolution. Financial investors are people with a very varied number of deviations from rational behaviour, which is the reason why there is a variety of effects, which explain market anomalies. Classical finance assumes that investors are rational and they are focused to select an efficient portfolio, which means including a combination of asset classes chosen in such a manner as to achieve the greatest possible returns over the long term, under the terms of a tolerable level of risk. Behavioral finance paradigm suggests that investment decision is influenced in a large proportion by psychological and emotional factors.

Key words: *behavioral finance, classical finance, market efficiency, investment decision, psychological factors, capital market, rational behavior*

Clasificare JEL : *G02, G14*

1. Introduction

Behavioral finance is the study of the influence of the psychological factors on financial markets evolution. In other words, financial markets inefficiency is analysed in the light of the psychological theories and perspectives. Behavioral finance is a relatively recent and high impact paradigm which provides an interesting alternative to classical finance. The classical finance assumes that capital markets are efficient, investors are rational and it's not possible to outperform the market over the long-term.

Psychological principles of behavioral finance include among others heuristics and biases, overconfidence, emotion and social forces. A very important step for an investor is to understand his financial personality. In other words, in the posture of investor is vitally important to understand why you make certain financial decisions or how you are likely to react in common conditions of uncertainty. This form of analysis is useful in an attempt to understand how you can temper the irrational components of investment decisions while still satisfying your individual preferences and requirements.

Behavioral finance provides a different perspective, very complex and unconventional. Behavioral finance paradigm suggests that investment decision is influenced in a large proportion by psychological and emotional factors. Human emotional complexity includes the following primary feelings: fear, panic, anxiety, envy, euphoria, greed, satisfaction, ambition or vanity. Very likely that all these emotions interfere in certain proportions in a financial investment decision making (Birau, 2011a).

Beyond the rhetorical nuance of the question, obvious financial market imperfections make us wonder if the classical financial theory is not just an unrealistic and incomplete solution to a complex and constantly changing problem. Most of the financial market anomalies cannot be explained using traditional models. Behavioral finance easy explains why the individual has taken a specific decision, but did not find as easily an explanation about how future decisions will be.

Classical finance has as a cornerstone the Efficient Markets Hypothesis, according to whom, since everyone has access to the same information, it is impossible to regularly beat the market, because that stock prices are, in fact, efficient, reflecting everything we know as investors. A market in which prices always "fully reflect" available information is called efficient. Synthesizing, Efficient Markets Hypothesis assume that capital market are informationally efficient.

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According to Fama (1998), known as the father of efficient market hypothesis : "market effciency survives the challenge from the literature on long-term return anomalies. Consistent with the market effciency hypothesis that the anomalies are chance results, apparent overreaction to information is about as common as underreaction, and post-event continuation of pre-event abnormal returns is about as frequent as post-event reversal. Most important, consistent with the market effciency prediction that apparent anomalies can be due to methodology, most long-term return anomalies tend to disappear with reasonable changes in technique".

In contrast, behavioral finance assumes that, in some circumstances, financial markets are informationally inefficient. (Ritter, J., 2003)

The main purpose of this article is to have an insight into how the influence of psychology on the behavior of the investors can explain capital markets imperfections. Human nature is perfectible, but it is not perfect. Investors are people with many deviations from rational behavior, which often make illogical decisions. In the existing global financial perspective, the major influence of psychological factors in investment decision-making is undeniable.

2. Classical finance paradigm and its imperfections

Classical finance assumes that investors are rational and they are focused to select an efficient portfolio, which means including a combination of asset classes chosen in such a manner as to achieve the greatest possible returns over the long term, under the terms of a tolerable level of risk.

The concept of efficient market was anticipated long time before through the work of researchers such as G. Cardano (1564), R. Brown (1828), J. Regnault (1863), Rayleigh (1880), John Venn (1888), L. Bachelier (1900), Einstein (1905), F.W.Taussing (1921), J.M. Keynes (1923), A. Cowles (1933), M. Friedman (1953), M.G. Kendall (1953) and P.A. Samuelson (1965). Interestingly, in most cases, the subject of the research not targeted financial market or stock exchanges.

Furthermore, the essence of the Efficient Markets Hypothesis is that any information is available to all investors or market participants, so stock prices always incorporate and reflect all relevant information. In consequence, the price of a stock should reflect the knowledge and expectations of all investors or market participants.

In his paper "Random Walks in Stock Market Prices" published in 1965, Eugene Fama suggested that : "an efficient market is defined as a market where there are large numbers of rational, profit-maximizers actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants".

In terms of taking into consideration an alternative theorie, Fama left the impression that such an idea is just one of consistent overreaction or underreaction, and stated that "since the anomalies literature has not settled on a testable alternative to market efficiency, to get the ball rolling, I assume that reasonable alternatives must predict either over-reaction or under-reaction."

He also concludes that in an efficient market at any point in time the actual price of a security will be a good estimate of its intrinsic value. Technically, in an efficient market, no investment strategy can earn excess risk-adjusted average returns, or average returns greater than are warranted for its risk (Barberis, N., Thaler, R., 2003).

Around the 1970s, the idea of market efficiency was accepted and supported enthusiastically in academic circles mainly due to arbitrage assumptions. Empirical studies have shown that this vision is unrealistic, because the lack of an investment strategy does not imply the absence of mispricing.

In what concerning the opposite situation, limits to arbitrage can generate severe mispricing. In general arbitrage is typically defined as "the simultaneous purchase and sale of the same, or essentially similar, security in two different markets for advantageously different prices" (Sharpe, W., Alexander, G., 1990).

Gromb and Vayanos suggested that understanding why anomalies exist and are not eliminated requires a careful study of the process of arbitrage: who are the arbitrageurs, what are the constraints and limitations they face, and why arbitrage can fail to bring prices close to the fundamental values implied by standard models .

The concept of market efficiency involves three dimensions : allocational, operational and informational efficiency. However, it has been noted that capital markets with higher informational efficiency are more likely to retain higher operational and allocational efficiencies (Müslümov et al, 2004).

Allocational efficiency implies the optimum allocation of resources according to the concept of Pareto optimality and it is established so that it is equivalent to the marginal rates of return, adjusted for risk, with respect to all market participants. In other words, a market is organizational efficient if it is not possible to change the allocation of resources in such a way as to make some participants better off without making others worse off.

Operational efficiency is reached when the transfer cost of financial funds is reasonable, being determined by a high number of participants on the market and by the mechanism which contributes to the assurance of equilibrium prices.

Informational efficiency is represented by the situation in which prices fully reflect all available information concerning financial assets and characteristics of the market in question. The degree to which market prices reflect information in a quick and adequate manner and thus the true value of an underlying asset. In a less sophisticated vision, the informational efficiency is defined as the speed and accuracy with which prices reflect new information.

A market is efficient with respect to a set of information if it is impossible to make economic profits by trading on the basis of this information set (Ross, 1987). In other words, no arbitrage opportunities, after costs, after risk premium can be achieved using ex ante information as a result of the fact that all information available at any time is fully reflected in current prices.

According to Statman : "Stock market efficiency has two meanings. To some, market efficiency means that there is no systematic way to beat the market. To others, it means that security prices are rational – that is, reflect only "fundamental" or "utilitarian" characteristics, such as risk, but not "psychological" or "value-expressive" characteristics, such as sentiment."

Malkiel suggested the following definition:

"A capital market is said to be efficient if it fully and correctly reflects all relevant information in determining security prices. Formally, the market is said to be efficient with respect to some information set…if security price would be unaffected by revealing that information to all participants. Moreover, efficiency with respect to an informational set …implies that it is impossible to make economic profits by trading on the basis of that informational set."

In this article we will focus attention especially of the idea of informational efficiency. Strictly speaking, a market in which prices always "fully reflect" available information is called efficient.

In an informationally efficient market, price changes must be unforecastable if they fully incorporate the expectations and information of all market participants. In other words, if stocks were predictable and not uncertain, it would therefore be possible to take action in order to generate systematic gains. But exactly these issues made the stocks uncertain and unpredictable. The prices depend on a summation of so many small and relatively independent sources of variation that the result is like a random walk (Samuelson, P., 1965).

In the case of capital markets, the degree of informational efficiency involves the following categories : weak form efficiency, semi-strong form efficiency and strong form efficiency.

According to the Efficient Markets Hypothesis, the weak form efficiency is distinguished by the fact that current price of a financial asset reflects all the historical financial information available on the market. Houthakker and Williamson consider that if the weak form of the efficient market holds, prices will exhibit a "random walk", which is a representative concept of probability theory.

The semi-strong form efficiency is characterized by the fact that share prices adjust to publicly available new information very rapidly and in an unbiased manner, such that no excess returns can be earned by trading on that information. In this case, neither fundamental analysis or technical analysis techniques will be able to reliably produce excess returns (Birau, 2011b).

In addition, strong form efficiency includes both semi-strong form efficiency and weak form efficiency. Specifically, share prices reflect all information, public and private, but none of these can earn excess returns. In fact, strong form efficiency is the most eloquent example of utopian theoretical construction. In a civilized world, the legal system prevents private information to become public, using various legislative and institutional barriers. Only in a disorganized system which completely ignore legal restrictions could be this possible.

Efficient Markets Hypothesis highlight the fact that absolute rationality of the capital market characterized by the fact that all investors are rational it is a statement of fact and must be generally accepted.

The question is whether investors can behave in a rational way in the context of an irrational world?

Many years ago, John Maynard Keynes provided a simply and shattering realistic answer to this dilemma. He suggested in an aphoristic manner that the market can remain irrational longer than an investor can remain solvent.

3. Behavioral finance - an original approach to capital markets

The field of modern finance has registered remarkable progress in the last decades. Behavioral finance is a new approach to capital markets, having an important role in financial decision making process. Decision making related with behavioral finance, can be defined as the process of choosing a particular investment alternative from a number of alternatives. It is an activity that follows after proper evaluation of all the alternatives (Mathews, J., 2005).

In the 1960s cognitive psychology began to shed more light on the brain as an information processing device (in contrast to behaviorist models). Psychologists in this field, such as Ward Edwards, Amos Tversky and Daniel Kahneman began to compare their cognitive models of decision-making under risk and uncertainty to economic models of rational behavior. In mathematical psychology, there is a longstanding interest in the transitivity of preference and what kind of measurement scale utility constitutes (Luce, 2000).

In 1979, Kahneman and Tversky wrote Prospect theory: An Analysis of Decision Under Risk, an important paper that used cognitive psychology to explain various divergences of economic decision making from neo-classical theory. According to Sewell (2005), behavioural finance is the study of the influence of psychology on the behaviour of financial practitioners and the subsequent effect on markets.

Barberis and Thaler (2001) consider that behavioral finance has two building blocks: limits to arbitrage, which argues that it can be diffcult for rational traders to undo the dislocations caused by less rational traders and psychology, which catalogues the kinds of deviations from full rationality we might expect to see.

Fromlet (2001) proposed the following definition : "behavioral finance closely combines individual behavior and market phenomena and uses knowledge taken from both the psychological field and financial theory".

However, first of all, behavioral finance must be understood as an area in full development with major implications for the manner in which the investment process is directed. In other words, behavioral finance is a broad visions paradigm which is trying to understand and to forecast financial markets based on psychological and emotional implications.

According to some researchers, behavioural finance states the features of interpretation and action based on the data for organized investing decisions by individuals. In Thaler opinion, behavioural finance defines that some of the economical factors sometimes may not treat rationality based on the assumption and Olsen also says, behavioural finance is the psychological decision process in recognition and prediction of financial markets (A. Talangi, 2004).

Strictly speaking, behavioral finance represents an area of research that attempts to understand and explain how reasoning or cognitive errors influence investor decisions and stock market prices. Thus, behavioral finance combines principles from the fields of individual and social psychology with classical financial theory to understand and highlight the performance of stock markets.

In consequence, the behavioral finance area is summarized in essence to explain financial market anomalies on the basis of the study of investors' behavior and decision making process.

Metaphorically speaking, behavioral finance it is an alternative solution to the difficulties faced by the classical theory in explaining certain financial phenomena. In deep contradiction to the classical paradigm, behavioral finance assumes that investors may be irrational in their reactions to new information and investment decisions.

In these conditions, it can be difficult, if not even impossible for rational traders to undo the mispricing caused by irrational investors due to existing limits of arbitrage. Actually, the limits to arbitrage theory demonstrates that if irrational traders cause deviations from fundamental value, rational traders will often be powerless to do anything about it.

According to some specialists, such as Shefrin, there are three themes predominate in behavioral finance and economics :

a) Heuristics: Investors often make decisions based on approximate rules of thumb, without relying on a logical reasoning.

b) Framing: The collection of anecdotes and stereotypes that make up the mental emotional filters individuals rely on to understand and respond to events.

c) Market inefficiencies: These particular characteristic includes mis-pricings, non-rational decision making, and return anomalies.

Human emotional complexity includes the following primary feelings: fear, panic, anxiety, envy, euphoria, greed, satisfaction, ambition or vanity. Very likely that all these emotions interfere in certain proportions in a financial investment decision making.

According to Tilson there are some extremely varied Common Mental Mistakes, such as :

a) Overconfidence

b) Projecting the immediate past into the distant future

c) Herd-like behavior (social proof), driven by a desire to be part of the crowd or an assumption that the crowd is omniscient

d) Misunderstanding randomness which refers to seeing patterns that don't exist

e) Commitment and consistency bias

f) Fear of change, resulting in a strong bias for the status quo

g) "Anchoring"on irrelevant data

h) Excessive aversion to loss

i)Using mental accounting to treat some money (such as gambling winnings or an unexpected bonus) differently than other money

j) Allowing emotional connections to over-ride reason

k) Fear of uncertainty

l) Embracing certainty

m) Overestimating the likelihood of certain events based on very memorable data or experiences n) Becoming paralyzed by information overload

o) Failing to act due to an abundance of attractive options

p) Fear of making an incorrect decision and feeling stupid (regret aversion)

q) Ignoring important data points and focusing excessively on less important ones; drawing conclusions from a limited sample size

r) Reluctance to admit mistakes

s) After finding out whether or not an event occurred, overestimating the degree to which one would have predicted the correct outcome (hindsight bias)

ş) Believing that one's investment success is due to wisdom rather than a rising market, but failures are not one's fault

t) Failing to accurately assess one's investment time horizon

ț) A tendency to seek only information that confirms one's opinions or decisions

u) Failing to recognize the large cumulative impact of small amounts over time

v) Forgetting the powerful tendency of regression to the mean

w) Confusing familiarity with knowledge [Shefrin, H., 2002]

Behavioral finance realize a connection relating financial theory to practical investment analysis in order to provide a means of understanding the financial market complex situations. In fact, the main idea is finding an explanation for market inefficiencies such as : mispricings, irrational investment decision making and return anomalies.

The influence of informational asymmetry, psychological, sociological and demographic structures can represent up to a certain level, a relevant answer to financial market anomalies. Investors are different some of the other in relation to numerous factors, such as : socio-economic background, financial context, level of education, religion, age, sex, traditions, ethnicity, marital status, and so on. They form expectations and beliefs that influence their investment decisions in a dramatic proportion. An optimum investment decision it cannot be achieved if the investor ignore all of these factors influence.

Behavioral finance paradigm focusing on the cognitive psychology suggest that the investment decision making process may be analysed successfully through the following variables : overconfidence, herding complex, overreaction, conservatism, preconceived ideas, excessive optimism, representativeness, irrationality or rational way of thinking and the impact of media channels.

Empirical studies show that investors are overconfident in their judgments and due to this seemingly insignificant appearance they make mistakes when perceive information and form their beliefs. Also, investors overreact in certain circumstances or they act under the impulse of some beliefs such as those mentioned above.

If the stock market behaved like a mechanically imperfect roulette wheel, people would notice the imperfections and, by acting on them, remove them. This rationale is appealing, if for no other reason than its value as counterweight to the popular view of stock market "irrationality," but it is obviously incomplete [Roberts, H., 1959].

Richard Thaler provides in his 1999 article, "The End of Behavioral Finance," published in the Financial Analysts Journal, a simple and very relevant model for understanding the significance attained by behavioral finance paradigm :

"Suppose a market has two kinds of investors: rational investors (rationals), who behave like agents in economics textbooks, and quasi-rational investors (quasi's), people who are trying to make good investment decisions but make predictable mistakes. Suppose also that two assets in this market, X and Y, are objectively worth the same amount but cannot be transformed from one into the other. Finally, assume that the quasi's think X is worth more than Y, an opinion that could change (quasi's often change their minds) while rationals know that X and Y are worth the same. What conditions are necessary to assure that the prices of X and Y will be the same, as they would be in a world with only rational investors?"

This question is complex, but some of the essential conditions are the following. First, in dollar-weighted terms, such a market cannot have too many quasi's (in order for the rational investor to be marginal). Second, the market must allow costless short selling (so that if prices get too high, the rationals can drive them down). Third, only rational investors can sell short; otherwise, the quasi's will short Y when the two prices are the same because they believe X is worth more than Y. Fourth, at some date T, the true relationship between X and Y must become clear to all investors. Fifth, the rationals must have long horizons, long enough to include date T. These conditions are tough to meet.

4. Conclusions

Behavioral finance represents a revolution in financial theory. The combination of financial theory with other social sciences resulted in the appearance of behavioral finance. This is a relatively young and promising field of modern finance which has registered remarkable progress in the last decades. Behavioral finance highlight the psychological edge of investment decision making process, in strong contradiction to the Efficient Markets Hypothesis.

The most important issue regarding efficient market theory is that it is not possible to outperform the market over the long-term. An efficient capital market is characterized by the fact that any information is available to all investors or market participants, so stock prices always incorporate and reflect all relevant information. Due to this issue, the price of a stock should reflect the knowledge and expectations of all investors or market participants.

It is a certainty that it is not possible to separate an investor's personality and the investment decisions that he may make. Thus, it cannot be ignored the importance of understanding the individual financial behaviour of capital market investors.

There is no need to make extensive psychological assumptions to understand that investment decision do not focus strictly on financial theory. Investors, both amateurs and professionals, make their choices in a way that it cannot be considered absolutely rational.

There are indisputable arguments in favor of both theories, as both presents certain limits. Behavioral finance is not a perfect replacement to classical finance paradigm, but it is an alternative solution to the difficulties faced by the traditional theory in explaining certain financial phenomena. Probably the only undeniable truth is that financial

markets are extremely complex and unpredictable to believe that we can understand perfectly their mechanism. (Birau, 2011a).

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