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FACTORS FORMING IRRATIONAL LITHUANIAN INDIVIDUAL INVESTORS' BEHAVIOUR

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Abstract. The paper aims to identify factors forming irrational individual investors' behaviour on the Lithuanian stock market. For this purpose and on the basis of the results of scientific literature research, factors forming irrational behaviour of individual investors were identified and used for preparing a questionnaire for individual investors actively trading on the Lithuanian stock market. In addition, a complex research methodology for identifying factors forming/determining irrational investor behaviour was developed. The results of the study identify basic factors forming Lithuanian individual investors' behaviour on the stock market and illustrate the logical relationship between these factors and individual investors' personal characteristics such as gender, age, investment experience and profession.

Key words: individual investors' behaviour, irrational behaviour, factors forming irrational behaviour, behavioural finance, cognitive and emotional biases.
JEL classification: G11

Introduction

Understanding investors' behaviour starts from the investigation of its forming factors. Recognising that economic behaviour is not limited only to qualitative analysis of market events and quantitative analysis of data, but that it also reflects the understanding and evaluation of these events as well as data awareness of economic participants, at the same time the importance of subjectivity in making investment decisions is noted. Global financial markets pose new challenges for investors, and activities of all investors are based on continuous decision-making, which is not always rational, and, as a result, unexplained by the traditional economic theory, assuming that all investors operating in the market are rational, and the capital market is efficient. That is why behavioural finance theory, contrary to traditional financial theories in their core provisions, was started to be actively developed. It holds that prediction of investment decisions cannot be based only on rationality, as far as significant influence on the investor's decision is made by his/her provisions and subjective assessment of the situation.

By studying investors' characteristics, individual investment behaviour and its consequences for financial markets, scientists from various countries come to the conclusion that irrational factors affect the behaviour of investors. The global financial crisis of recent years has underlined the necessity to research investor behaviour and its determinants as well as the consequences of irrational investor decisions on financial markets more widely.

Currently researchers from various countries are interested in the analysis of problems of behavioural finance, market uncertainty and inefficiency, market anomalies, and influence of investor psychology on their decisions with regard to different aspects. The researchers of financial behaviour (Bodie, Kane and Marcus, 2007) state that real investor behaviour deviates from rational behaviour under the influence of various subjective factors such as information, awareness and assessment, risk tolerance and understanding, personal qualities and investor emotions, mood and expectations. Jordan and Miller (2008) assume that markets are not efficient, and they prove this assumption. Thus one of the basic financial theory concepts – the efficient market hypothesis of Fama (1970), defining a market as being efficient when prices of financial instruments reflect all available information and instantly change depending on new information – faces a challenge. However, the classical theory, invoking the assumption about efficient market (where it is impossible to earn more than the market's average because of rational, profit maximising investors), does not reflect the real market situation.

It should be noted that researchers' interest in irrational investor behaviour and its consequences for financial markets is constantly growing. It could be illustrated by numerous studies dealing with one or more factors influencing investors' behaviour, investors' personal characteristics, the impact of cognitive or emotional biases on their behaviour and investment decisions (Campbell and Sharpe (2007), Lim (2006), Laibson and Madrian (2008), Pouget and Villeneuve (2009), Dave and Wolfe (2003), Biais and Weber (2008), Nyman (2006), Cipriani and Guarino (2008), Park and Sabourian (2009), Dasgupta and Prat (2007), Barber and Odean (2001), Glaser and Weber (2007), Drees and Eckwert (2005), Chiu and Wu (2009), Maymin (2009), etc.). By analysing the problematic issues of the studies of the last decade we can note that the influence of investors' personal characteristics on their behaviour and decisions has been investigated more thoroughly.

The analysis of scientific literature of the Lithuanian authors has shown that financial behaviour has been given very little and fragmentary attention in the studied researches. Bikas (2008) analysed saving behaviour of the Lithuanian inhabitants and presented a model of forming individual savings. Jurevičienė and Stonkutė (2010) analysed the peculiarities of the efficient markets hypothesis and financial behaviour, saving and investment measures. More extensive scientific empirical studies were undertaken by Uzdzilo (2010), Baleišytė (2011), and Grigaliūnienė (2011).

The *scientific problem* is to identify factors forming irrational behaviour of individual investors in Lithuania.

The *object* of the paper is the factors forming irrational Lithuanian individual investors' behaviour. The *aim* of the paper is to identify factors forming irrational investor behaviour and investigate their impact on the Lithuanian individual investors' decision-making in the stock market. In order to reach the aim, the following *objectives* of the paper have been formulated:

1. To distinguish the factors forming irrational behaviour of individual investors analysed in scientific researches.
2. To identify the factors forming irrational behaviour of the Lithuanian individual investors.

Research methods: to analyse the factors forming irrational behaviour of individual investors and their impact on investors' decisions, the author used the methods of literature analysis, comparison of theoretical insights, networking, benchmarking, analogy, and generalisation. The research of the Lithuanian investors' behaviour was divided and operated in 2 stages. During the first stage for the investigation of irrationality of individual investors, a pilot research was made. Its results showed that individual investors in Lithuania suffered from the majority of biases, such as anchoring, mental accounting, confirmation and hindsight bias, herd behaviour, overconfidence, overreaction and availability bias. During the second stage, the necessary changes in the questionnaire were made and the survey was broadened to encompass more than 5000 individual investors who were invited to take part in the research. The questionnaire was available online and this allowed ensuring anonymity and safety of data provided by investors. The questionnaire in Lithuanian is available on http://www.apklausa.lt/f/iracionalia-investuotoju-elgsena-formuojanciu-veiksniu-tyrimas-lw8asug/answers/new.fullpage. 404 individual investors fully completed the questionnaire. Taking the requirements ensuring the validity of such researches into consideration, they were all completed, the results were statistically significant and reflected current situation in the Lithuanian financial market. Based on the developed research methodology, the data collected have been processed by Excel and the basic results and findings are presented in this paper.

Research limitations: during the research of factors forming irrational investors' behaviour only individual investors (members of the Lithuanian Financial Analysts' Association and subscribers and readers of the journal *Invest*) were interviewed. In the paper, the causes of the factors forming irrational behaviour of individual investors were not analysed, the intention was merely to identify such causes and determine their effects on the Lithuanian individual investors' behaviour in the stock market.

Research of the Lithuanian individual investors: conceptual approach

It is hard not to think of the stock market as of a person: it has moods that can turn from irritable to euphoric; it can also react hastily one day and make amends on the next. Behavioural finance theorists provide a couple key concepts (biases) that contribute to irrational financial decision-making: anchoring, mental accounting, confirmation and hindsight bias, herd behaviour, overconfidence, overreaction and availability bias. All of them are presented in this section.

The concept of anchoring draws on the tendency to attach or "anchor" our thoughts to a reference point – even though it may have no logical relevance for the decision. Anchoring can also be a source of frustration in the financial world, as investors base their decisions on irrelevant figures and statistics. For example, some investors invest in the stocks of companies that have fallen considerably in a very short period of time. In this case, an investor is anchoring on a recent "high" that the stock has achieved and consequently believes that the drop in price provides an opportunity to buy the stock at a discount. At the same time, it is true that the fickleness of the overall market can cause some stocks drop substantially in value, allowing investors take advantage of this short-term volatility. However, stocks quite often also decline in value due to changes in their underlying fundamentals.

Mental accounting refers to the tendency for people to separate their money into different accounts based on a variety of subjective criteria, like the source of the money and the intent of each account. According to the theory, individuals assign different functions to each asset group, which often has an irrational and detrimental effect on their consumption decisions and other behaviour. The mental accounting bias also concerns investing. For example, some investors divide their investments between a safe investment portfolio and a speculative portfolio in order to prevent the negative returns that speculative investments may have from affecting the entire portfolio. The problem regarding such practice is that despite all the work and money that the investor spends to separate the portfolio, his net wealth will be no different than if he had held one larger portfolio.

It is often said that "seeing is believing". While this is often the case, in certain situations what you perceive is not necessarily a true representation of the reality. In investing, the confirmation bias suggests that an investor would be more likely to look for information that supports his or her original idea about an investment rather than seek for information that contradicts it. As a result, this bias can often result in faulty decision-making because one-sided information tends to skew an investor's frame of reference, leaving them with an incomplete picture of the situation. Consider, for example, an investor that hears about a hot stock from an unverified source and is intrigued by the potential returns. That investor might choose to research the stock in order to "prove" its touted potential is real. What ends up happening is that the investor finds all sorts of green flags with regard to the investment (such as growing cash flow or a low debt/equity ratio), while glossing over financially disastrous red flags, such as loss of critical customers or dwindling markets.

Another common perception bias is hindsight bias, which tends to occur in situations where a person believes (after the fact) that the onset of some past event was predictable and completely obvious, whereas in fact, the event could not have been reasonably predicted. Many events seem obvious in hindsight. Psychologists attribute hindsight bias to our innate need to find order in the world by creating explanations that allow us believe that events are predictable. While this sense of curiosity is useful in many cases (take science, for example), finding erroneous links between the cause and effect of an event may result in incorrect oversimplifications.

There are some reasons why herd (crowd) behaviour happens. The first is the social pressure of conformity, because most people are very sociable and have a natural desire to be accepted by a group, rather than be branded as an outcast, so, following the group is an ideal way to become its member. The second reason is the common rationale according to which it is unlikely that such a large group could be wrong. Investors that employ a herd-mentality investment strategy constantly buy and sell their investment assets in pursuit of the latest and hottest investment trends. For example, if a herd investor hears that internet stocks are the best investments at the moment, he or she will free up their investment capital and then dump it on internet stocks. If biotech stocks are all the rage six months later, he or she will probably move their money again, perhaps before he or she has even experienced significant appreciation in their internet investments. But frequent buying and selling entails a substantial amount of transaction costs, which can eat away at available profits. By the time a herd investor knows about the latest trend, most other investors have already taken advantage of this news, and the strategy's wealth-maximising potential has probably already peaked. This means that many herd-following investors will probably be entering into the game too late and will be likely to lose money as those at the front of the pack move on to other strategies.

In terms of investing, overconfidence (i.e., overestimating or exaggerating one's ability to successfully perform a particular task) can be detrimental to your stock-picking ability in the long run. In the study "Volume, Volatility, Price, and Profit When All Traders Are above Average" Odean (1998) comes to the conclusion that overconfident investors generally conduct more trades than their less-confident counterparts. According to Odean, overconfident investors/traders tend to believe they are better than others at choosing the best stocks and the best times to enter/exit a position. Unfortunately, Odean also found that traders who conducted the most trades tended, on average, to receive significantly lower yields than the market.

One consequence of having emotion in the stock market is the overreaction towards new information. According to market efficiency, new information should more or less be reflected instantly in a security's price. For example, good news should raise a business' share price accordingly, and that gain in share price should not decline if no new information has been released since. In De Bondt and Thaler (1985) study "Does the Market Overreact" the returns on the New York Stock Exchange were examined by separating the best 35 performing stocks into a "winners' portfolio" and the worst 35 performing stocks were then added to a "losers' portfolio" and tracking each portfolio's performance against a representative market index for three years. Surprisingly, it was found that the losers' portfolio consistently beat the market index, while the winners' portfolio consistently underperformed. After some time, investors realised that their pessimism was not entirely justified, and these losers began rebounding as investors came to the conclusion that the stock was underpriced. The exact opposite is true with the winners' portfolio: investors eventually realised that their exuberance was not totally justified.

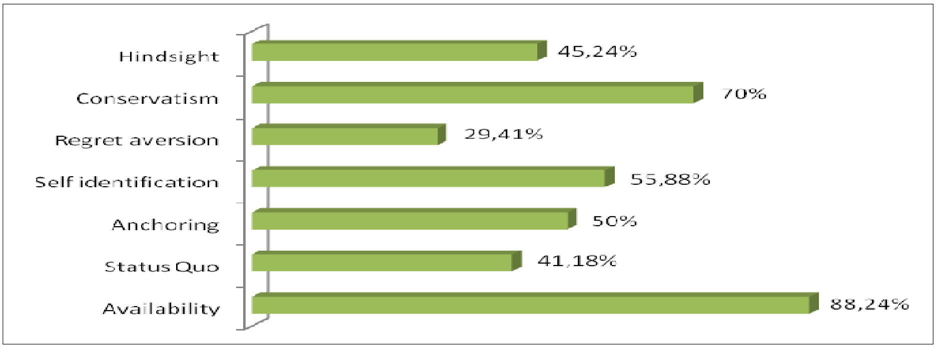
According to the availability bias, people tend to heavily weight their decisions towards more recent information, making any new opinion biased towards that latest news. For example, suppose you see a car accident along a stretch of the road that you regularly drive to work and probably you will begin driving extra cautiously for the next week or so. Although the road might be no more dangerous than it has ever been, seeing the accident causes you to overreact, but you will be back to your old driving habits by the following week.

The above biases were checked in numerous empirical studies by foreign researchers. In Lithuania, the issues of investors' irrational behaviour are less discussed and studies have started to appear in recent years. In the section below, the basic results of research of the Lithuanian individual investors are presented in order to highlight major factors forming their irrational behaviour.

Research of the Lithuanian individual investors: results and basic findings

Empirical research has showed that basic factors forming irrational behaviour of the Lithuanian individual investors are overconfidence, conservatism, representativeness, and crowd behaviour. These identified biases of irrational behaviour of individual investors allow accepting the assumption that behaviour of the Lithuanian individual investors could be treated as irrational in some situations and stating that the Lithuanian individual investors show irrational behaviour when making decisions in the stock market. The basic factors forming irrational behaviour of the Lithuanian individual investors are summarised in Figure 1.

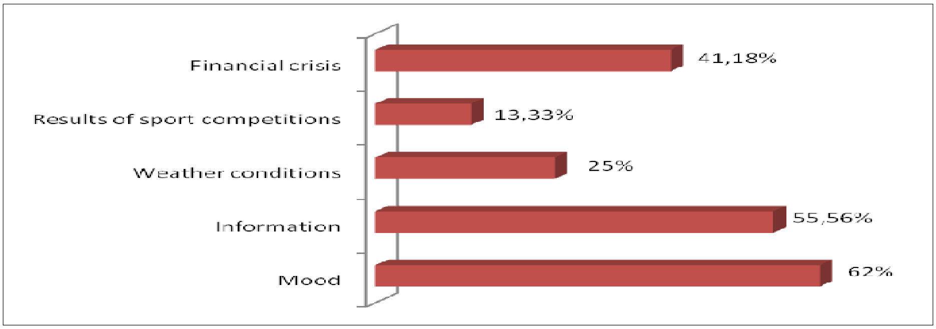
Figure 1. Basic factors forming irrational behaviour of the Lithuanian individual investors



Source: prepared by the author (2012)

During the research, it turned out that emotions and intuition also influenced the Lithuanian individual investors' decisions. Basic factors influencing investors' mood and, as a consequence, their decisions are presented in Figure 2.

Figure 2. Factors influencing irrational decisions of the Lithuanian investors



Source: prepared by the author (2012)

The relationship between personal characteristics of the Lithuanian individual investors, such as investment experience, age, gender, and profession, and stock market decisions was discerned (see Table 1). According to the research results, women are more influenced by their mood when making decisions. Meanwhile male investors are more willing to take risks, and their decisions are influenced by the confirmation bias. Older investors are more exposed to external information and less confident of their own investment decisions made. Younger investors are less influenced by the confirmation and status quo biases. Investors specialising in economy and finances tend to be more confident and assess their investment skills optimistically. These investors are more confident in their decisions and are less likely to change them under the influence of new information. Behaviour and decisions of investors of other specialties are more affected by the recency bias when compared with economists and financiers.

Table 1. Different personal individual investors' qualities and factors influencing decision-making

Investors' personal characteristics / Behaviour / decision-making factors	Investment experience				Gender		Age		Specialty	
	Up to 1 year	1-3 years	4-5 years	More than 5 years	Men	Women	Younger investors	Older investors	Economist-financier	Other
Availability	X				X		X			X
Willing to take risk	X	X			X	X	X	X	X	X
Anchoring		X				X		X	X	
Impulsive decisions		X				X	X			X
Risk aversion			X			X		X	X	
Regret aversion	X		X		X		X			X
Mood			X			X	X			X
Overconfidence				X		X		X	X	
Conservatism				X						

Source: prepared by the author (2012)

The mood impact is minimal for experienced investors. Investors-beginners tend to adopt impulse decisions, which can be affected by external data, weather conditions, and results of sports games. It is possible to conclude that the impact of factors forming irrational behaviour of investors depends on personal characteristics of investors. According to the research results, investors could evaluate the right time for portfolio formation and transactions depending on the chosen investment strategy. The obtained results may be particularly important for investors-speculators. Taking market seasonality, return change trends, and the risk during different periods into account, it is possible to develop a high return-oriented portfolio. Recognition of irrational behaviour symptoms would help investors increase the effectiveness of portfolios managed by them by choosing the appropriate risk and profitability level.

In evaluating the results obtained, some limitations should be taken into account. The study was conducted according to the Lithuanian stock market index changes, and the research was performed involving actively trading Lithuanian individual investors only. The author did not raise the goal to quantify the influence of irrational behaviour of individual investors on the Lithuanian stock market. The purpose of the research was to identify the irrational behaviour of individual investors, its forming factors, and to assess their impact on the decisions of investors made in the stock market. The study showed a logical relationship between the factors forming irrational behaviour of individual investors and the decisions made in the stock market.

Despite these limitations, the obtained results reveal basic factors forming irrational behaviour of individual investors, the impact on their decisions, their reflection on the stock market, and they are significant for further development of irrational investors' behaviour and its impact on the financial market research.

Conclusion

In order to analyse the trends of the Lithuanian stock market, the questionnaire was prepared and distributed among individual investors of Lithuania. The questionnaire was distributed among members of the Lithuanian Association of Financial Analysts and with the help of the editorial office of investors' magazine "Invest" – among its subscribers and readers. The author combined psychological biases into closed-end questions without stating the bias itself and checked whether the investors felt the influence or not.

According to the results, women are more overconfident investors than men. In addition, the direct connection between investment experience and influence of overconfidence was noted (the more experienced is an investor, the more overconfident he/she is).

It is interesting to note that investors with economic-financial education state that their investment skills are good or very good. Therefore, it is possible to conclude that education and experience give the background for overconfidence bias to appear. The most risky investors are the beginners and investors at the age of 30 to 45.

Single people are also more risky than married. Almost a half of researched investors notice the influence of their mood on their investment decision. The strongest factors that could influence investors' mood turned to be mass media information, weather conditions and results of sport competitions.

The results of the research showed that individual investors in Lithuania suffered from all basic biases, but overconfidence, anchoring, mental accounting and herd behaviour made the strongest influence on their financial decision-making process. Moreover, it should be noted that the influence of factors forming irrational individual investors' behaviour depends on their personal characteristics such as age, experience, gender and profession.

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LIETUVOS INDIVIDUALIŲ INVESTUOTOJŲ IRACIONALIĄ ELGSENĄ FORMUOJANTYS VEIKSNIAI

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Santrauka. Staripsnyje siekiama nustatyti pagrindinius iracionalią individualių investuotojų elgseną formuojančius veiksnius Lietuvos vertybinių popierių rinkoje. Šiuo tikslu ir remiantis mokslinės literatūros tyrimų rezultatais buvo išskirti iracionalią individualių investuotojų elgseną formuojantys veiksniai ir panaudoti rengiant aktyviai Lietuvos vertybinių popierių rinkoje prekiaujantčių individualių investuotojų apklausą. Taip pat buvo sukurta kompleksinė tyrimų metodika, leidžianti nustatyti iracionalią investuotojų elgseną formuojančius veiksnius. Gauti tyrimo rezultatai atskleidžia pagrindinius Lietuvos individualių investuotojų elgseną vertybinių popierių rinkoje formuojančius veiksnius ir loginį ryšį tarp jų ir individualių investuotojų asmeninių savybių, tokių kaip lytis, amžius, investavimo patirtis ir profesija.

Reikšminiai žodžiai: individualaus investuotojo elgsena, iracionali elgsena, iracionalią elgseną formuojantys veiksniai, elgsenos finansai, kognityvinės ir emocinės klaidos.