Irrationality of Investment Funds Managers in the Light of Available Information – Case of Poland

Monika Bolek[1], Rafał Wolski[2]

[1]*University of Lodz, Faculty of Economics, Institute of Finance, Lodz, Poland, monika.bolek@uni.lodz.pl*
[2]*University of Lodz, Faculty of Economics, Institute of Finance, Lodz, Poland, rafal.wolski@uni.lodz.pl*

ABSTRACT: The purpose of the paper is related to understanding the preferences and motivations determining the decision making process of investment funds managers on the Polish market. Surveys concerning the investment environment, factors influencing decisions, as well as heuristics and decision traps related to investment funds managers behavior confirm the thesis that they reaction to information appearing on the market, with particular emphasis on messages from the Central Bank of Poland NBP is related to behavioral errors. The research is done on the Polish market, fast developing economy after system transformation, where the investment processes are becoming very important factor of the capital transfers mechanism. The value added of the paper is related to the direct surveys of investment funds managers in the context of the decision they make and heuristics they are affected by.

KEYWORDS: investment funds, managers' irrationality , behavioural finance, central bank

Introduction

There is a wide scope of evidence related to the overreaction and under reaction of the market (Barberies, Shleifer, Vishny 1998) on the available information indicating, that the model of making decisions is not a simple project but more complicated process. The dominant paradigm regarding the response of asset prices to new information (first articulated by Fama, 1971) is that, since markets are efficient, asset prices should react immediately and in an unbiased manner to new information.

There are many pieces of information coming from the local and international institutions, but they are not coordinated and there are periods with more and less intensive news appearing on the market. That news affect rates of return of financial assets and volatility in a positive and negative way. Decisions that investors make on the market are not only the result of the external information but also the internal motivations and preferences that affect the utility.

Most of the papers focus on the process of communication of central banks and the market reaction in the economic outcome, mostly inflation targeting indicating, that the reaction is not rational. Deeper analyse of the investment process that market participants are involved in, can help to answer the question whether behavioural traps can affect it. Investment funds managers manage, as it was realized in the survey that will be presented in this paper, the amounts of hundreds of millions of Polish zlotys or US dollars and they reactions on the information appearing on the market can influence the assets price movements. A lot of information comes from the NBP and other international financial institutions and databases providers. It is not possible to use all of the information available on the market and that is why funds managers are asked in the surveys about the sources and their importance.

The goal of this paper is related to the relationship assessment that can exist between personal behaviour of funds managers and professional activity related to the capital they invest. To analyse this problem and present the conclusions the following sections of the paper will be presented: first the problem and literature will be analysed, in a second section methods and data will be presented, next the results and in the end the summary will be discussed.

The results of this paper will help to explain the reaction of the market on the NBP messages concerning the reaction of funds managers in Poland, the economy after transformation that is the leader in European Union due to the GDP growth rate.

Problem and Literature Overview

With earlier indications related to the rationality in economy, the behavioral finance has it's beginning in prospect theory developed by Kahneman and Tversky (1979). Going further investor psychology

factors on the asset pricing and portfolio investment decision were developed by Shefrin and Statman, who put forward the Behavioural Asset Pricing Model (BAPM) and Behavioural Portfolio Theory (BPT) in 1994 and in 2000 successively. Apart from theories arising to explain the lack of efficiency of the market, the individual heuristics affect decisions that are made by market participants in relation to the information available on the market.

The central bank communication has its target that is inflation in most of cases, that affects financial instruments prices, mostly the exchange rates due to the purchasing power parity. Investors reaction is based on the heuristics, but from the other hand central bank can adjust these heuristics though manipulation that takes into account behavioral errors. Inflation targeting may be the subject of this manipulation. The information provided by central bank may be more or less direct and behavioral economy can explain it and can affect the way investors will interpret it under specific heuristics. Bank of England Governor Mervyn King has realized in 2005 that "rational optimising behaviour is too demanding and it could reflect the use of heuristics". Central bank plays a role in shaping believes about the heuristics, it also pays a potentially important role in anchoring expectations (expected inflation to be equal to target). From the other hand Bernanke (2005) pointed out that when the public does not know but instead must estimate the central bank reaction function, there's no guarantee that the economy will converge to the rational expectations equilibrium because the public learning process affects the economy behaviour. The feedback effect on learning of the economy can lead to unstable of indeterminate outcomes – which effective communication by the central bank can help to avoid (Eusepi, Preston 2007). The process of providing information by central bank is commonly described (Blinder at al 2008) while the process of transforming and using this information is not.

According to the World Bank News in the year 2013 institutional investors based in the OECD countries managed nearly $100 trillion worth of assets. There are requirements that investment funds managers should follow like to invest for the long term, follow market fundamentals, provide liquidity to countries and companies overlooked by other financial markets participants and reduce many of the shortcomings of the financial system. The significance of this group of investors is still relatively small in some emerging markets but they are nevertheless important players and therefore, they are subject of numerous research studies which document their positive role but sometimes also negative effects of their actions (Brzeszczynski et al. 2015). Regarding the behavioural errors affecting the institutional investors there are some studies examining investor sentiment in Taiwan. Liao et al. (2013) investigate the trading behaviour of foreign institutional investors in the Taiwanese stock market.

Methods and data

The survey is based on a questionnaire divided for two parts. Part one is related to the information set and strategy indicators that influence the decisions of funds managers operating on the Polish capital market in the field of investments. This part focus on the NBP information that is taken into consideration in the investment process. Second part of the survey is related to the behavioural research with task based on experiments provided in behavioural economics literature.

Task 1 measures the effect of certainty, or tendency to reevaluate certain events in relation to highly probable events. This task measures whether a person will choose a certain profit, but with a lower expected value (Option B - vulnerability) or choose an option more rational, potentially higher expected value (A) (Kahneman 2003).

Task 2 measures the reverse effect, which means that most people are characterized by risk aversion in the area of profits and risk in the area of losses. Selecting option A the tested person is susceptible to the reversal effect, especially when he chose answer B in Task 1 (Kahneman 2003).

Task 3 is a task for the effect of isolation (framing), that is related to different forms of presenting the same decision problem that may affect other decisions of the respondents (Kahneman 2003).

Task 4 is a task for the disposition effect measuring the tendency of investors to sell assets that have increased in value, while keeping assets that have dropped in value with the only rational option A, while others mean the effect of disposition. It may also examine the degree of "severity" of this disposition effect (Szyszka 2009).

Task 5 is a task for overconfidence, the so-called the effect of being better than average. Here, it is analyzed whether the respondents in various spheres will consistently indicate that they are above-average better in a given field.

Task 6 is a task measuring the manifestation of overconfidence called "the illusion of control" which is based on the illusory conviction of many people that they can affect the course of future events of a random nature (Heath, Tversky 1991).

Task 7 is measuring the paradox of Ellsberg, analyzing the phenomenon of aversion to ambiguity (Segal 1987).

Task 8 is a modified version of the Linda problem assessing the representativeness heuristics (Tversky, Kahneman 1983).

Task 9 is a task for the sunk costs, managers often face (Szyszka 2009).

Task 10 is a task for fast and short thinking affecting the decisions (Kahneman, Egal 2011).

Joining the part related to the information and strategies influencing the decision of managers and the behavioural part enabled to test the hypothesis referring to the relationship of these parts of the survey.

H0: variables (heuristics and aspects related to the decision process) are independent,

H1: variables are not independent.

The verification of hypothesis that are formulated above will be done with the Chi Sq. test that is statistical test where the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true. The chi-squared test is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories.

Results

The results of the survey are presented in this part of a paper. Number of surveyed fund managers is 17 and all of them were men. In Table 1 there are frequencies of answers given by investment managers regarding the information they use in their investment process together with strategies indicators.

Table 1. Strategies and information related to the investment process on the Polish market

	No. of observations
No. of surveyed	17
Investment horizon	
< 1 year	3
1-5 years	12
5-10 years	0
10-20 years	0
20 and more years	0
Strategy	
Aggressive	7
Sustainable	9
Conservative	9

NBP information usage frequency	
interest rates	17
money supply	11
reserve money	7
balance of payments	12
official reserves	9
liquid assets and liabilities in foreign currencies	7
foreign debt	12
international investment position	10
Other	3
Opening of investment position	
before the announcement of new information by CB	7
after the announcement of new information by CB	10
Market of investment	
equity market	9
bond market	10
foreign exchange market	8
money market	6
other markets	1
NBP information influence	
very important	1
moderate	9
none	7
Ultra short time horizon	
very important	0
moderate	4
small	7
none	6

Regarding the time horizon 3 investors invest in the period shorter than one year while majority of 12 investment funds managers invest in the horizon of 1-5 years. Nobody answer to the option longer than 10 years. Strategy distribution is almost the same with aggressive pointed out by 7 investors, sustainable by 9, the same as conservative. NBP information is dominated by interest rates announcements that is pointed out by everybody. 7 funds managers open their investment position before the announcement of new information made by NBP and 10 do it after the announcement. Most of funds operate on the bond market with the equity market on the second place. The NBP information importance is rather moderate for surveyed funds managers and the ultrashort time horizon investment, too.

In the second part of the survey the behavioural questionnaire was applied and answers to the questions help the identification of errors that are presented in the Table 2.

Table 2. Behavioural errors survey results

	A	B	AB	BA	AA	Total
Task 1	12	5				17
Task 2	9	8	9	5	3	34
	AB	AA	BB	CC	AC	
Task 3	3	4	2	4	1	14
	A	B	C	D		
Task 5	5	1	2	7		15
	Yes	No				
Task 5	55	45				100
	A	B				
Task 6	6	9				15
	AA	AB	BB			
Task 7	11	2	1			14
	A	B				
Task 8	10	7				17
	A	B				
Task 9	10	7				17
	0,05	0,1				
Task 10	15	2				17

Analysing the relationship between the answers related to the information and strategies performed by fund managers with their heuristics with Chi Sq. test the following results were achieved (Table 3).

Table 3. Problems tests results

	Problem 1	Problem 2	Problem 3	Problem 4	Problem 5
Chi Sq.	0,59	0,01	0,51	1,00	0,59
Significance level	0,05	0,05	0,05	0,05	0,05
Degrees of freedom	2	8	2	24	1
Statistic level	5,99	15,51	5,99	36,42	3,84
H0 or H1	H1	H1	H1	H1	H1

	Problem 6	Problem 7	Problem 8	Problem 9
Chi Sq.	0,38	0,00	0,87	0,00
Significance level	0,05	0,05	0,05	0,05
Degrees of freedom	1	8	4	3
Statistic level	3,84	15,51	9,49	7,81
H0 or H1	H1	H1	H1	H1

Problem 1: The effect of certainty and the reversal effect in the area of prospect theory (BA response) with rational approach (AB) is related to the investment strategies (Tasks 1 and 2).

H0 should be rejected and H1 accepted, variables are not independent. The prospect theory and the effects of certainty affect the strategies performed by investment funds managers.

Problem 2. Framing effect (answers AB or BA in Task 3) is related to the NBP information that are taken into consideration.

H0 should be rejected and H1 accepted, variables are not independent. Framing effect is affecting the set of information and its value taken into consideration by the investment funds managers.

Problem 3. Disposition effect (answers BCD in Task 4) is related to the investment horizon.

H0 should be rejected and H1 accepted, variables are not independent. Disposition effect is affecting the investment time horizon.

Problem 4. Overconfidence effect (no of YES answers in Task 5) is related to the macroeconomic information announced by the NBP.

H0 should be rejected and H1 accepted, variables are not independent. Overconfidence effect is related to the macroeconomic information taken into consideration by investment funds managers.

Problem 5. Control illusion effect (answer A in Task 6) is related to the investment decision that can take place before or after the CB announcement.

H0 should be rejected and H1 accepted, variables are not independent. Control illusion influences the investment decision that can take place before or after the CB announcement.

Problem 6. Aversion to ambiguity (answers AA in Task 7) is related to the investment decision that can take place before or after the CB announcement.

H0 should be rejected and H1 accepted, variables are not independent. Aversion to ambiguity affects the investment decisions the investment decision that can take place before or after the CB announcement.

Problem 7. Representative heuristics and conjunction error (answer A in Task 8) is related to the macroeconomic information taken into consideration.

H0 should be rejected and H1 accepted, variables are not independent. Representative heuristic and conjunction errors affect the macroeconomic information taken into consideration.

Problem 8. Sunk cost error (answer B in Task 9) is related to the market investors make their decisions on.

H0 should be rejected and H1 accepted, variables are not independent. Sunk costs error affect the decisions on the chosen markets.

Problem 9. Fast and slow thinking error (answer "10 cents" in Task 10) is related to the ultrashort periods that investors make decisions in.

H0 should be rejected and H1 accepted, variables are not independent. Fast and slow thinking affest the the ultrashort periods that investors make decision in.

In all surveyed problems the variables are not independent and we can come to the conclusion that behavioural heuristics influence the decisions of investment funds managers.

Summary

The problem of Polish investment funds managers and the behavioural errors affecting them together with information they take into consideration and strategies indicators was analyzed. Investment funds managers in Poland are certified individuals with ability to make decisions on capitals invested in trusts dedicated for the common investment. Making decisions on amounts between hundreds of million to some billions of Polish zloty they they are affected by, as it was shown in the survey, heuristics, perhaps losing or earning returns as a result of the market imperfection on its own, but their personal approach to reality. In Poland authorities focus on the professional skills not taking into account the behavioural aspects that can influence the decisions of investment funds managers.

Next research questions are related to other markets weather the influence of behavioural errors on the investment process exist and how to solve this problem in the light of a capital market where institutional investment drives the economy and is related to the future rates of return of the funds participants. Applying the automatic investment strategies may be partially a solution to this problem.

References

Barberis, N., Shleifer, A., & Vishny, R. 1998. "A Model of Investor Sentiment." *Journal of Financial Economics* 49(3): 307-343.

Bernanke, B. S. 2005. "The Logic of Monetary Policy." *Vital Speeches of the Day* 71(6): 165.

Brzeszczyński, J., Gajdka, J., & Kutan, A. M. 2015. „Investor Response to Public News, Sentiment and Institutional Trading in Emerging Markets: A review." *International Review of Economics & Finance* 40: 338-352.

Eusepi, S., & Preston, B. 2010. "Central Bank Communication and Expectations Stabilization." *American Economic Journal: Macroeconomics* 2(3): 235-71.

Fama, E. F. 1971. "Risk, Return, and Equilibrium." *Journal of Political Economy* 79(1): 30-55.

Heath, C., & Tversky, A. 1991. "Preference and Belief: Ambiguity and Competence in Choice Under Uncertainty". *Journal of Risk and Uncertainty* 4(1): 5-28.

Kahneman, D., & Egan, P. 2011. *Thinking, Fast and Slow* (Vol. 1). New York: Farrar, Straus and Giroux.

Kahneman, D. Tversky A. 1979. "Prospect Theory: An Analysis of Decisions Under Risk." *Econometrica* 47: 278.

Segal, U. 1987. "The Ellsberg Paradox and Risk Aversion: An Anticipated Utility Approach." *International Economic Review*, 175-202.

Kahneman, Daniel. 2003. "Maps of Bounded Rationality: Psychology for Behavioral Economics." *American Economic Review* 93(5): 1449-75.

King, M. 2005a. "Monetary Policy: Practice Ahead of Theory" (Mais Lecture 2005). Forelesning Ved the Cass Business School, City University, London, 17.

Shefrin, H., & Statman, M. 1994. "Behavioral Capital Asset Pricing Theory." *Journal of Financial and Quantitative Analysis* 29(03): 323-349.

Shefrin, H., & Statman, M. 2000. "Behavioral Portfolio Theory." *Journal of Financial and Quantitative Analysis* 35(02): 127-151.

Shefrin, H., & Statman, M. 1985. "The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence." *The Journal of Finance* 40(3): 777-790.

Shefrin, H. 2007. "How The Disposition Effect and Momentum Impact Investment Professionals." *Journal of Investment Consulting* 8(2): 68-79.

Szyszka, A. 2009. „Finanse behawioralne: nowe podejście do inwestowania na rynku kapitałowym" (Behavioral Finance: A New Approach to Investing in The Capital Market). Wydawnictwo Uniwersytetu Ekonomicznego.

Tversky, A., & Kahneman, D. 1983. "Extensional Versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgment." *Psychological Review* 90(4): 293.