STUDIA PRAWNO-EKONOMICZNE, T. CXXX, 2024
PL ISSN 0081-6841; e-ISSN 2450-8179 s. 145–166
https://doi.org/10.26485/SPE/2024/130/7

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THE LEVEL OF OPTIMISM OF INDIVIDUAL INVESTORS AND STOCK MARKET ANALYSTS[1]

Abstract

Background: Research in the field of behavioral finance has proven that market participants are subject to psychological errors and inclinations (concerning the cognitive sphere, i.e. opinions and attitudes, and concerning the motivational sphere, i.e. preferences). The heuristics of accessibility, anchoring, affect, representativeness, and the emotional errors of self-confidence, illusion of control, and optimism are the most prominent of the behavioral tendencies in the opinion sphere that are most frequently described in the literature. In their paper, the authors will focus on the occurrence of optimism among capital market participants.
Research purpose: The main goal of this study is to assess the level and distribution of optimism among individual investors and stock market analysts and to examine whether there are discrepancies between the optimism of individual investors and stock market analysts.
Methods: The study was conducted in two stages. The first part was carried out from September 2019 to March 2020 on a sample of 37 active stock market analysts who prepare brokerage recommendations. The second stage was conducted from August to November 2020, and surveyed 1.057 active individual investors. Two psychological tests, the Revised Life Orientation Test (LOT-R) and the Positive Orientation Scale (POS), were used to determine optimism.
Conclusions: The average results of the LOT-R test for stock market analysts (14.38) and individual investors (15.72) ranged from 14 to 18 points, i.e., an average level of optimism. The individual investors and stock market analysts indicated similar levels of disposable optimism measured with the LOT-R test. However, a different result was obtained in the POS test, where the individual investors (31.97) showed a higher level of positive orientation than the stock

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[1] This work was supported by the University of Lodz under Grant B2111200002203.02, B1911200002084.02.

market analysts (29.49). The added value of the article is the use of psychological tests to study the level of optimism among capital market participants, as well as the comparison of the level of optimism between individual investors and stock market analysts.

Keywords: optimism, individual investors, stock market analysts, LOT-R, P-Scale.

JEL classification: G11, G40, G41

1. Introduction

The basis of interest in behavioral finance is human emotion, including excessive optimism,[2] which is particularly exhibited by people who have significant influence over the decisions of others. They are statistically optimistic, overconfident, and take risks more often than they realize. Risk-takers generally underestimate the risk of failure and put too little effort into figuring out how things actually are.[3] Behavioral finance, therefore, focuses on behavioral errors and various deviations from predictions based on theoretical assumptions. However, in many cases, representatives of the classical school of finance have not been able to explain precisely how investors can deal with these anomalies and how the consequences of behavioral errors can be mitigated.[4] Behavioral errors occur on many different levels, and there is still debate about how they should be classified.

Dispositional optimism is most often defined as a general tendency to expect positive future outcomes, and it plays an important role in behavioral self-regulation. As the extensive literature shows, dispositional optimism is a strong personal trait that affects several aspects of an individual's psychosocial functioning.[5] Optimism can be simply defined as the difference between expectations and reality. If expectations are greater than reality, we speak of cognitive optimism; if reality is better than expectations, we speak of pessimism.[6] There are many different phenomena that are usually grouped under the heading of "optimistic attitude". One of the phenomena most fully

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2 **R. Pastusiak**, *Błędy poznawcze i nadmierny optymizm na rynku kapitałowym*, Przedsiębiorczość i Zarządzanie 2016/17, pp. 239–240.

3 **D. Kahneman**, *Pułapki myślenia: o myśleniu szybkim i wolnym*, Media Rodzina, Warszawa 2012.

4 **H.K. Baker**, **G. Filbeck**, **J.R. Nofsinger**, *Behavioral Finance. What everyone need to know*, Oxford University Press, Oxford 2019.

5 **P. Steca et al.**, *Item Response Theory Analysis of the Life Orientation Test-Revised: Age and Gender Differential Item Functioning Analyses*, Assessment 2015/22, pp. 341–350.

6 **T. Sharot**, *The optimism bias*, Current Biology 2011/21, pp. 941–945.

described in the decision-making literature is individuals' excessive optimism about future outcomes.[7]

Optimism can also be understood as the source of many economic phenomena. It is important for financial intermediation,[8] and it can influence enterprises' finance and accounting decisions.[9] Furthermore, it can increase security prices in the face of short selling restrictions[10] and serve as an important element of usefulness,[11] leading to an excessive or insufficient return on investment.[12] However, there is relatively little direct evidence in financial economics about the role that optimism plays in individual economic decision-making.[13] For example, economists study the occurrence of unrealistic optimism among managers,[14] individual investors, and stock market analysts.

Scientific research on optimism has already received a lot of attention from Polish and foreign researchers. However, so far, no research has compared optimism between capital market participants, i.e., stock market analysts and individual investors, with psychological tests, which is what this article aims to do. The Revised Life Orientation Test (LOT-R) and Positive Orientation Scale (P-Scale) were used to examine optimism.

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7 **N.D. Weinstein**, *Reducing unrealistic optimism about illness susceptibility*, Health Psychology 1983/2, pp. 11–20.

8 **J.D. Coval**, **A.V. Thakor**, *Financial intermediation as a beliefs-bridge between optimists and pessimists*, Journal of Financial Economics 2005/75, pp. 535–569.

9 **J.B. Heaton**, *Managerial Optimism and Corporate Finance*, Financial Management 2002/31, pp. 33–45.

10 **J. Chen**, **H. Hong**, **J.C. Stein**, *Breadth of ownership and stock returns*, Journal of Financial Economics 2002/66, pp. 171–205.

11 **M.K. Brunnermeier**, **J.A. Parker**, *Optimal Expectations*, American Economic Review 2005/95, pp. 1092–1118.

12 **N. Barberis**, **A. Shleifer**, **R. Vishny**, *A Model of Investor Sentiment*, Journal of Financial Economics 1998/49, pp. 307–343.

13 **M. Puri**, **D.T. Robinson**, *Optimism and economic choice*, Journal of Financial Economics 2007/86, pp. 71–99.

14 **U. Malmendier**, **G. Tate**, *Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction*, Journal of Financial Economics 2008/89, pp. 20−43; **Y. Lin**, **S. Hu**, **M. Chen**, *Managerial optimism and corporate investment: Some empirical evidence from Taiwan*, Pacific-Basin Finance Journal 2005/13, pp. 523–546; **G. Hilary et al.**, *The bright side of managerial over-optimism*, Journal of Accounting and Economics 2016/62, pp. 46–64.

2. Literature review

Research on optimism is the focus of many domestic and foreign researchers. Selected research results are arranged chronologically and presented in Table 1.

TABLE 1: *Previous studies on optimism among stock broker analysts and individual investors*

Authors	Date of study	Key conclusions
1	2	3
Research on stock broker analysts		
Macko and Tyszka	2005	Of the three professional groups surveyed, i.e., lawyers, entrepreneurs and financial analysts, it was the financial analysts who had the highest level of optimism.
Cowen, Groysberg, and Healy	2006	Analysts from entities that funded research through underwriting and stock trading actually made less optimistic forecasts and recommendations than those from brokerages that did not use underwriting. Optimism was particularly low among analysts from large investment firms, suggesting that corporate reputation reduces analyst optimism. Analysts who serve individual investors are more optimistic than those who serve only institutional investors.
Mola and Guidolin	2009	Analysts who issue recommendations for companies included in mutual fund portfolios show excessive optimism in those recommendations compared to recommendations issued for companies that are not part of any investment portfolios.
Ertimur, Zhang, and Muslu	2010	Recommendations issued for the first time are less optimistic than "corrective" recommendations issued for a given company once again.
Drake and Myers	2011	Overoptimism is lower for analysts with more experience and analysts following fewer companies, but we find only limited evidence of lower levels of overoptimism for analysts from larger brokerages and analysts following fewer industries.
Keller and Pastusiak	2015	The authors conducted a study of 786 recommendations of listed companies belonging to the WIG20* from 2009 to 2012. Their study confirmed the hypothesis of behavioral effects in the form of overoptimism and the anchoring effect when making recommendations.

1	2	3
Kowalski and Prażników	2017	The survey looked at brokerage recommendations on the Polish capital market. Companies with low historical financial results were viewed most optimistically. The greatest optimism was observed for companies with "buy" recommendations and companies in a downward valuation trend.
Keller and Pastusiak	2019	The authors conducted a survey on excessive optimism in valuations among stock analysts. They found that 70% of recommendations contained excessive optimism.
Brycz, Dudycz, and Włodarczyk	2021	There was no clear difference in the level of optimism (pessimism) in analysts' forecasts between different types of stock recommendations; their optimism was shown in the amount of overestimation of their forecasts.
Coleman, Merkley, and Pacelli	2022	Recommendations issued by "Robo-Analysts" are less optimistic than those issued by stock analysts.
Research on individual investors		
De Bond	1993	Stock market investors tend to be overly optimistic when predicting returns on their own portfolios, while forecasters are more realistic when predicting the future level of a stock market index.
Lasfer, Xiaowen Lin, and Muradoglu	2012	Foreign investors have a more optimistic approach to investing in stocks compared to domestic investors.
Iqbal	2015	Optimism influences investors' decision-making, suggesting that they rely on their beliefs and personal judgment.
Riaz and Iqbal	2015	The authors confirmed the influence of three out of four distortions, i.e., confidence, optimism, and self-control, on investment decisions; their study did not confirm the influence of the illusion of control.
Gakhar	2019	The author surveyed 117 investors in India and showed that 68.40% of the investors were optimistic.
Grevenbrock	2020	Dispositional pessimism is significantly related to asset ownership and stock market participation, while dispositional optimism is not significantly related.

* Stock exchange index of the 20 largest joint-stock companies listed on the Warsaw Stock Exchange.
S o u r c e: own work.

Previous research has shown that both stock market analysts and individual investors exhibit optimism, but no comparison has been made to determine which group displays a higher intensity of this trait. These studies may contain subjective evaluations and should be clearly marked as such. Additionally, optimism has primarily been examined through stock market data, such as recommendations or predictions of portfolio and stock market index performance. The literature review found little research on dispositional optimism among capital market participants, understood as a character trait studied in psychological tests. Similar conclusions were reached by Puri and Robinson.[15] They found that the main obstacle to gathering economic evidence on optimism on a large scale is measurement, as direct psychometric tests of optimism are not conducted in large-scale economic research. We have found a research gap regarding studies of optimism among capital market participants using psychological tests.

3. Hypotheses and methodology

The main goal of this study is to assess the level and distribution of optimism among individual investors and stock market analysts in Poland. We also examine whether there are discrepancies between the level of optimism of individual investors and stock market analysts. The following hypotheses are put forward in the article:

H1: The median points of dispositional optimism, as measured by the LOT-R test, are the same in the populations of individual investors and stock market analysts

H2: The median positive orientation points, as measured by the POS test, are the same in the populations of individual investors and stock market analysts

The study was conducted in two stages using the CAWI (Computer Assisted Web Interview) method, which involved conducting a computer-supervised internet survey. The first stage was carried out from September 2019 to March 2020 on a sample of 37 active stock market analysts who prepare brokerage recommendations. The second part was conducted from August to November 2020 and surveyed 1,057 active individual investors in Poland. The survey consisted of the Revised Life Orientation Test (LOT-R) and Positive Orientation Scale (POS) questionnaires.

[15] **M. Puri**, **D.T. Robinson**, *Optimism and economic...*

We compared the survey results with market sentiment in the two periods analyzed, taking into account the different survey periods for stock market analysts and individual investors. To measure market mood, the investor sentiment index published by the Association of Individual Investors[16] was used.

The LOT-R test is the most widespread and widely used tool to measure optimism[17]and has become the gold standard to measure dispositional optimism.[18] It is a self-report test to measure dispositional optimism described by Scheier, Craver and Bridges.[19] The test consists of ten items: three regard optimism (items 1, 4, and 10), three regard pessimism (items 3, 7, and 9), and four are distracting items (items 2, 5, 6 and 8), whose results are not calculated. Respondents answer the statements by indicating their degree of agreement on a five-point Likert scale, from full disagreement to full agreement.[20]

The overall score ranges from 0 to 24 points, and the higher the score, the greater the optimism.[21] Walsh et al.[22] proposed that the minimum score that can be calculated is 0 (representing extreme pessimism), and the maximum is 24 (representing extreme optimism). However, Kreis et al.,[23] Chakraborty,[24] and

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16 **Association of Individual Investors**, *Investor sentiment index*, https://www.sii.org.pl/3438/analizy/nastroje-inwestorow.html; accessed: 3.01.2024.

17 **P. Steca et al.**, *Item Response Theory...*; **I. Schou-Bredal et al.**, *Population-based norms of the Life Orientation Test-Revised (LOT-R)*, International Journal of Clinical and Health Psychology 2017/17, pp. 216–224; **A. Hinz et al.**, *Optimism and pessimism in the general population: Psychometric properties of the Life Orientation Test (LOT-R)*, International Journal of Clinical and Health Psychology 2017/17, pp. 161–170.

18 **F.J. Cano-García et al.**, *Factor structure of the Spanish version of the Life Orientation Test-Revised (LOT-R): Testing several models*, International Journal of Clinical and Health Psychology 2015/15, pp. 139–148.

19 **F. Ottati**, **A.P.P. Noronha**, *Factor structure of the Life Orientation Test-Revised (LOT-R)*, Acta Colombiana de Psicología 2017/ 20, pp. 32–39.

20 *Ibidem*.

21 **I. Schou-Bredal et al.**, *Population-based norms...*; **Z. Jurczyński**, *Narzędzia Pomiaru w promocji i psychologii zdrowia*, Pracowania Testów Psychologicznych Polskiego Towarzystwa Psychologicznego, Warszawa 2001.

22 **D. Walsh et al.**, *Always looking on the bright side of life? Exploring optimism and health in three UK post-industrial urban settings*, Journal of Public Health 2015/37, pp. 389–397.

23 **S. Kreis et al.**, *Relationship between optimism and quality of life in patients with two chronic rheumatic diseases: axial spondyloarthritis and chronic low back pain: a cross sectional study of 288 patients*, Health Qual Life Outcomes 2015/13.

24 **R. Chakraborty**, *Dimensional Analysis of Life Orientation in Higher Secondary School Students*, International Journal of Research in Humanities and Social Studies 2016/3, pp. 13–16.

Marotta et al.[25] proposed a sub-scale that converts the points obtained from the LOT-R test into a level of optimism. The scale is as follows: from 0 to 13 points – a low level of optimism; from 14 to 18 points – a medium level of optimism; from 19 to 24 points – a high level of optimism.

The Positivity Scale (P-scale) was developed by Caprara as a direct measure of POS. He defines Positive Orientation as a basic personality trait (in the sense of a constant characteristic), reflecting the general tendency to perceive life experiences with a positive attitude.[26] The P scale is a questionnaire that comprises eight items (one item is negative) that assess positive self-image, life and future, as well as self-confidence towards other people. The questionnaire uses a Likert scale from 1(strongly disagree) to 5 (strongly agree).[27] Items 5, 7 and 8 represent the individual's positive opinion of themselves, item 2 represents the individual's satisfaction with life, items 1 and 4 represent the individual's positive attitude towards the future, item 3 represents the individual's trust in other people, and item 6 is a reversed item representing a negative view of the individual for the future. The P-Scale total score is calculated by summing the eight-item item responses. Higher scores indicated a higher POS. The score range is from 8 to 40 points.[28]

4. Empirical results

The average LOT-R score for stock market analysts is 14.38 points (SD: 5.166), while for individual investors, it is higher by 1.34 points, at 15.72 points (SD: 2.589). The median points obtained by stock market analysts was 15 points, and for individual investors, it was 16 points. For stock exchange analysts, the minimum was 3, and for individual investors, it was 7. The maximum number of points obtained by analysts was 24, while for individual investors, it was 23. Table 2 displays the descriptive statistics of the LOT-R test for both groups.

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[25] **A. Marotta et al.**, *Effects of Probiotics on Cognitive Reactivity, Mood, and Sleep Quality*, Frontiers in Psychiatry 2019/10, pp. 1−11.

[26] **M. Sobol-Kwapińska**, *Orientacja pozytywna − koncepcje teoretyczne i przegląd badań*, Studia Psychologiczne 2014/52, pp. 77–82.

[27] **J.C. Borsa et al.**, *Psychometric properties of the positivity scale – Brazilian version*, Psychology/Psicologia Reflexão e Crítica 2015/28, pp. 61–67.

[28] **L. Tian**, **D. Zhang**, **E.S. Huebner**, *Psychometric Properties of the Positivity Scale among Chinese Adults and Early Adolescents*, Frontiers in Psychology 2018/9, pp. 1–13.

TABLE 2: *Descriptive measures of the results of the LOT-R questionnaire for stock market analysts and individual investors*

Statistics	Stock market analysts (N = 37)		Individual investors (N = 1057)	
	Points LOT-R	Standard error	Points LOT-R	Standard error
Mean	14.38	0.849	15.72	0.080
Median	15.00		16.00	
Variance	26.686		6.702	
Standard deviation	5.166		2.589	
Minimum	3		7	
Maximum	24		23	
Distance	21		16	
Skewness	–0.607	0.388	–0.386	0.075
Kurtosis	–0.252	0.759	0.240	0.150

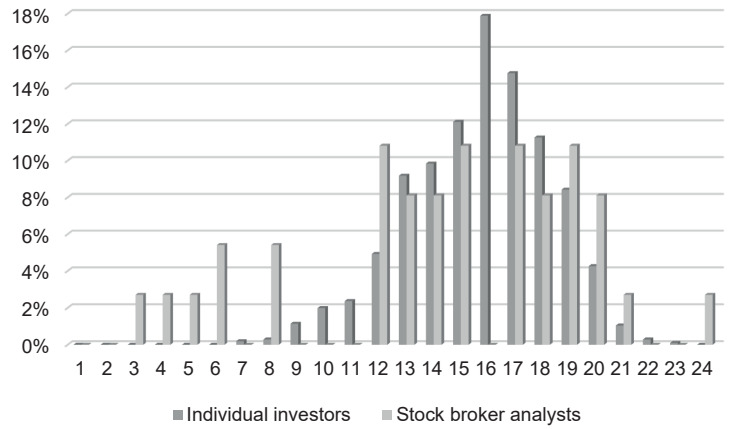
S o u r c e: own work.

The average results of the LOT-R test for stock market analysts (14.38) and individual investors (15.72) ranged from 14 to 18 points, i.e., indicating an average level of optimism. Comparing the average results of the stock market analysts and individual investors with the normalization average for Poland (14.55 points),[29] it can be concluded that they are at a similar level. Graph 1 shows the distribution of points from the LOT-R test for the two study groups.

In order to better illustrate the level of optimism, the points achieved by stock market analysts and individual investors in the LOT-R test have been converted into sub-scales indicating the level of optimism (low, medium, high). The results are shown in Graph 2.

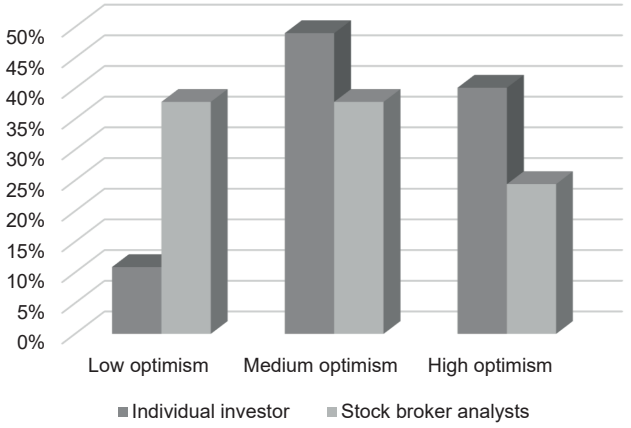
[29] **Z. Jurczyński**, *Narzędzia Pomiaru w promocji...*

GRAPH 1: *Percentage distribution of LOT-R test scores among individual investors and stock market analysts*



S o u r c e: own work.

GRAPH 2: *Profile of the sample of stock exchange analysts and individual investors plotted for the results of the LOT-R test for the following ranges: low, medium, and high levels of optimism*



S o u r c e: own work.

Both in the group of stock market analysts and individual investors, the highest percentage of respondents showed an average level of optimism (37.80% and 49.01%, respectively). The low level of optimism among stock market analysts is at the same level as the average level of the analyzed group

(37.80%). Among individual investors, a high level of optimism (excessive optimism) was expressed by 40.11%, while the same mood was expressed by 24.40% of stock market analysts. At the same time, a low level of optimism occurred about 3.5 times more often among stock market analysts (37.80%) than among individual investors (10.88%).

The Mann-Whitney U test was used to verify the hypothesis about the lack of differences in the level of optimism among stock market analysts and individual investors. The results are presented in Tables 3 and 4 and Graph 3.

TABLE 3: *Ranks for the LOT-R questionnaire*

Ranks				
	Group	N	Mean Rank	Sum of Rank
Points	Individual investors	1057	549.42	580,734.00
	Stock broker analysts	37	492.73	18,231.00
	Total	1094		

S o u r c e: own work.

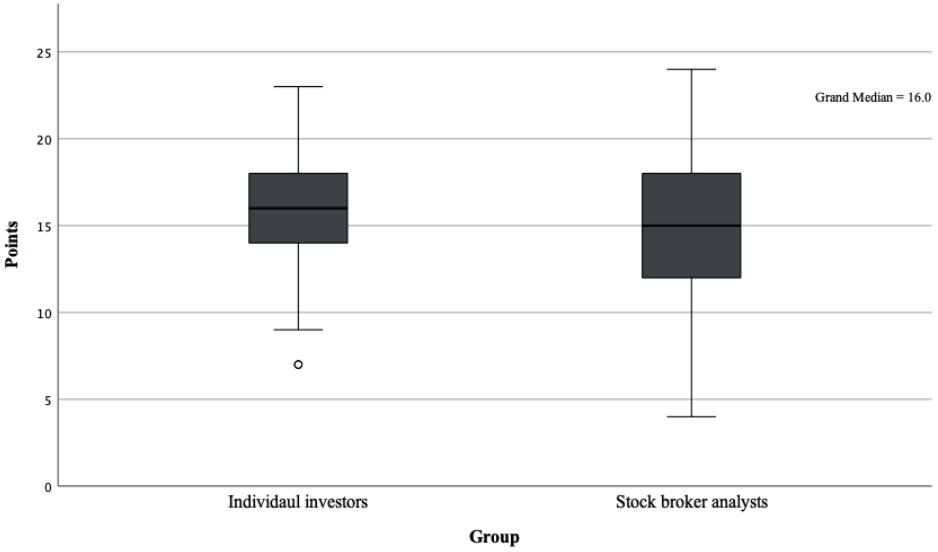
TABLE 4: *Test statistics for the LOT-R questionnaire*

	Points
U Mann-Whitney	17,528.000
W Wilcoxon	18,231.000
Z	–1.080
Asymptotic Sig. (2-sided test)	0.280

S o u r c e: own work.

Based on the adopted level of $\alpha = 0.05$ and the statistics from the Mann-Whitney test ($p = 0.280$), we can assume that there are no statistically significant differences between the level of optimism among individual investors and stock market analysts. Therefore, there is no reason to reject the hypothesis; the median points of dispositional optimism, as measured by the LOT-R test, are the same in the population of individual investors and stock market analysts.

GRAPH 3: *The result of the survey of the level of optimism with the LOT-R questionnaire in the groups of stock market analysts and individual investors*



S o u r c e: own work.

The average POS score for stock market analysts is 29.49 points (SD: 5.694), while for individual investors, it is higher by 2.48 points, at 31.97 points (SD: 2.818). The median points obtained by stock exchange analysts was 31, and for individual investors, it was 32. For stock exchange analysts, the minimum was 16 points, and for individual investors, it was 17. The maximum number of points obtained by analysts was 38, while for individual investors, it was 39. Table 5 displays the descriptive statistics of the POS test for both groups.

TABLE 5: *Descriptive measures of POS questionnaire results for stock market analysts and individual investors*

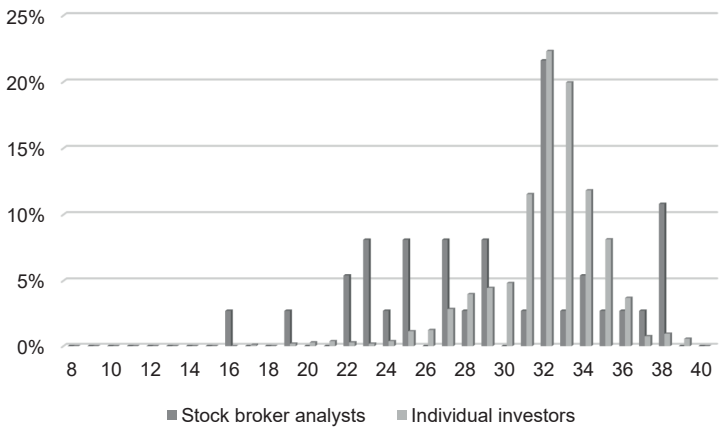
Statistics	Stock market analysts (N = 37)		Individual investors (N = 1057)	
	Points LOT-R	Standard error	Points LOT-R	Standard error
1	2	3	4	5
Mean	29.49	0.936	31.97	0.087
Median	31		32	

1	2	3	4	5
Variance	32.423		7.941	
Standard Deviation	5.694		2.818	
Minimum	16		17	
Maximum	38		39	
Distance	22		22	
Skewness	–0.327	0.388	–1.187	0.075
Kurtosis	–0.544	0.759	3.279	0.150

S o u r c e: own work.

Comparing the average results of the POS test of stock market analysts (29.49) and individual investors (31.97) with the normalization average for Poland (29.30),[30] it can be concluded that the results obtained by stock market analysts are similar to the normalization sample for Poland, while the individual investors' results are higher by 2.67 points than the normalization sample for Poland. Graph 4 shows the distribution of points from the POS test for the two study groups.

GRAPH 4: *Percentage distribution of POS test scores among individual investors and stock market analysts*



S o u r c e: own work.

[30] **M. Łaguna**, **P. Oleś**, **D. Filipiuk**, *Orientacja pozytywna i jej pomiar: Polska adaptacja Skali Orientacji Pozytywnej*, Studia Psychologiczne 2011/49, pp. 47−54.

The Mann-Whitney U test was used to verify the hypothesis about the lack of differences in the level of positive orientation measured by POS test among stock market analysts and individual investors. The results are presented in Tables 6 and 7 and Graph 5.

TABLE 6: *Ranks for the POS questionnaire*

Ranks				
	Group	N	Mean Rank	Sum of Rank
Points	Individual investors	1057	552.46	583951.50
	Stock broker analysts	37	405.77	15013.50
	Total	1094		

S o u r c e: own work.

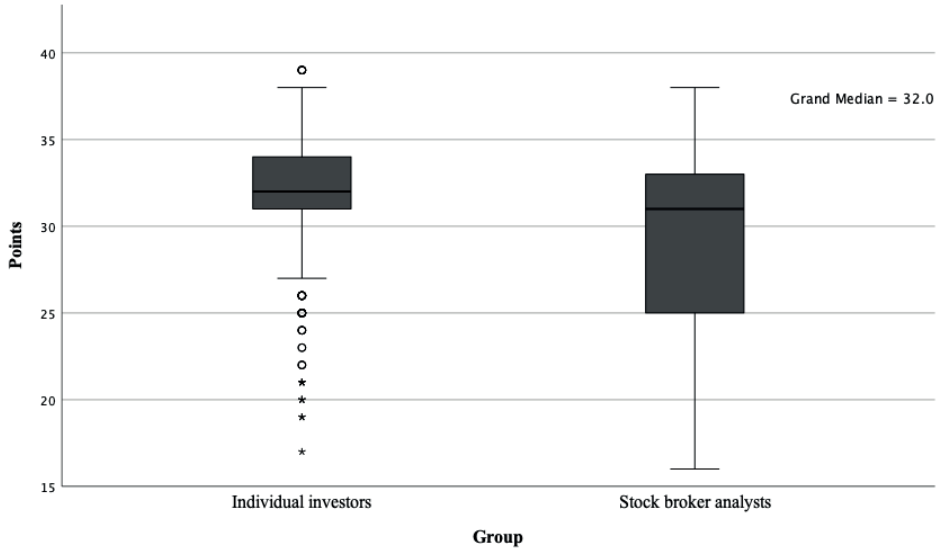
TABLE 7: *Test statistics for the POS questionnaire*

	Points
U Mann-Whitney	14,310.500
W Wilcoxon	15,013.500
Z	–2.807
Asymptotic Sig. (2-sided test)	.005

S o u r c e: own work.

Based on the adopted level of $\alpha = 0.05$ and the statistics from the Mann-Whitney test ($p = 0.005$), we can assume that there are statistically significant differences between the level of positive orientation among individual investors and stock market analysts.

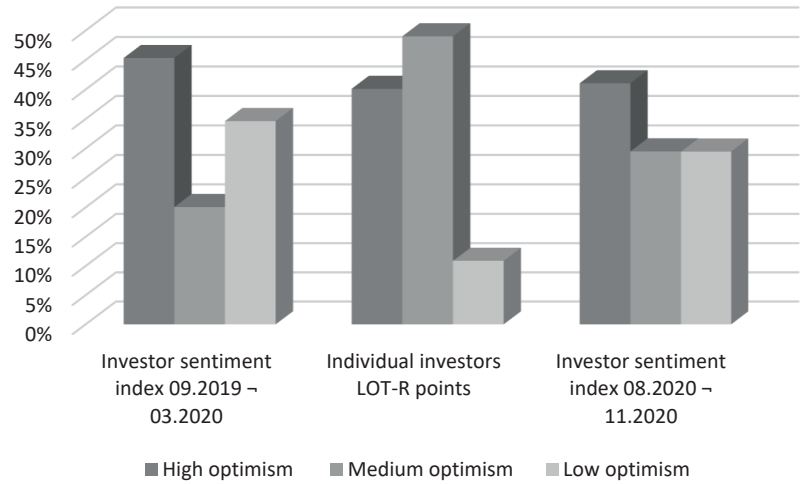
GRAPH 5: *The result of examining the level of optimism with the POS questionnaire in the groups of stock market analysts and individual investors*



S o u r c e: own work.

There were no significant differences in sentiment levels when comparing the investor sentiment index between September 2019 to March 2020 and August 2020 to November 2020. In the first period, 45.33% of investors forecasted an upward trend, while 41.04% did so in the second period. Similarly, 20.05% of investors forecasted a sideways trend in the period from September 2019 to March 2020, and 24.94% did so in the period from August to November 2020. In the first and second periods, 34.64% and 34.02% of survey participants, respectively, forecasted a downtrend. When comparing the results of the investor mood index with those of the LOT-R psychological test, it is evident that the high level of optimism for both the index and the psychological test was at a similar level of over 40%. However, differences arise in the medium and low levels of optimism. In the two periods, 49.01% of investors exhibited a medium level of optimism according to the LOT-R psychological test, while more than 20% exhibited a medium level of optimism according to the sentiment index. Low levels of optimism were exhibited by 10.88% of respondents according to the LOT-R test, while over 34% exhibited low levels of optimism according to the investor sentiment index. Graph 6 presents the results.

GRAPH 6: *Comparison of the mood index of investors with the results of the LOT-R test for individual investors*[31]



S o u r c e: own work.

5. Conclusion

The results show that both stock market analysts and individual investors show excessive optimism when making investment decisions. However, the research showed that neither group shows excessive dispositional optimism as a psychophysical feature measured by the LOT-R test; it is at an average level. The research did not show a significant difference between the average level of disposable optimism of stock market analysts and individual investors. Comparing the average LOT-R results of the stock market analysts (14.38 points) and individual investors (15.72) with the normalization average for Poland (14.55), it can be concluded that they are at a similar level. Different results were obtained when analyzing positive orientation. Stock market analysts have a lower positive orientation than individual investors. To sum up, individual investors show a similar level of optimism as stock market analysts, but they have a higher positive orientation, i.e., they assess life, the future, and their image of themselves more positively, and they also have more self-confidence than stock market analysts.

[31] The article replaced the nomenclature used for the investor sentiment index. High optimism now refers to an uptrend, medium optimism to a sideways trend, and low optimism to a downtrend.

A difference between previous studies, which demonstrated that both groups show excessive optimism in investment decisions, and our survey, which found an average level of dispositional optimism measured by the LOT-R test, may be that optimism is a feature that can vary. Perhaps nature has equipped analysts and investors with a base level of optimism whose value we can estimate from the LOT-R test at an average level. Meanwhile, both stock market analysts and individual investors, for various reasons, may reveal a greater or lesser intensity of this feature in their financial decisions. This may be due to the presence of cognitive biases, heuristics, and emotions, such as base rate bias (sometimes also known as base rate neglect[32]), planning bias, overconfidence,[33] and the illusion of control,[34] which show up in actual decision-making.

Research on the occurrence of optimism among capital market participants is very important. Optimism can cause someone to overestimate their knowledge of the market, underestimate risk, and exaggerate their ability to control events. This bias is emotional and can influence investment decisions because it is based on intuition. The empirical results suggest that the mood of market participants has a strong explanatory power in the case of stock market bubbles and their surges; they can support the theoretical model proposed by Daniel et al.[35] and Barberis et al.[36] While market participant sentiment has been widely used to study various financial issues, studies that focus on bubbles, market crashes, and predicting financial crises have largely ignored this phenomenon.[37] Our analysis can serve as a complementary approach to control economic variables that are used in economics and finance. For example, sentiment (optimism) can be considered when developing an early warning system for stock market bubbles.

The results of the survey among individual investors may have been affected by the period in which it was conducted. The research was carried out in the period from August to November 2020, i.e., during the COVID-19 pandemic. This may have contributed to a decrease in optimism among investors due to

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32 **A. Tversky**, **D. Kahneman**, *Availability: A Heuristic for Judging Frequency and Probability*, in: **D. Kahneman**, **P. Slovic**, **A. Tversky** (eds.), *Judgment under Uncertainty: Heuristics and Biases*, Cambridge University Press, Cambridge 1982, pp. 163–178.

33 **B. Flyvbjerg**, *Top Ten Behavioral Biases in Project Management: An Overview*, Project Management Journal 2021/52, pp. 531–546.

34 **H.K. Baker**, **G. Filbeck**, **J.R. Nofsinger**, *Behavioral Finance…*

35 **K. Daniel**, **D. Hirshleifer**, **S.H. Teoh**, *Investors psychology in capital markets: Evidence and policy implications*, Journal of Monetary Economics 2002/49, pp. 139–209.

36 **N. Barberis**, **A. Shleifer**, **R. Vishny**, *A Model of Investor...*

37 **P. Wei-Fong**, *Does Investor Sentiment Drive Stock Market Bubbles? Beware of Excessive Optimism!*, Journal of Behavioral Finance 2020/21, pp. 27–41.

the social and economic situation caused by the pandemic, thereby affecting the psyche of the surveyed group. However, there was no significant difference between the investor sentiment index in the two periods. The investor sentiment index analyses investors' predictions regarding the development of stock market trends rather than their internal emotions, which are examined using psychological tests such as LOT-R or SOP. Additionally, different individuals may have contributed to the creation of the index during the two time periods. Furthermore, the results could have been influenced by the fact that the research was conducted on a relatively small group.

Therefore, we suggest repeating the study in a period of socio-economic stability, and the research group of stock exchange analysts should be expanded. In addition, the research could be extended to include other psychological variables, such as risk perception, illusion of control, and self-confidence.

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POZIOM OPTYMIZMU INWESTORÓW INDYWIDUALNYCH I ANALITYKÓW GIEŁDOWYCH

Abstrakt

Przedmiot badań: Badania z zakresu finansów behawioralnych udowodniły, że uczestnicy rynków ulegają błędom i inklinacjom psychologicznym. (dotyczącym sfery poznawczej, czyli opinii i postaw, oraz dotyczącym sfery motywacyjnej, czyli preferencji). Wśród najczęściej opisywanych w literaturze inklinacji behawioralnych w sferze opinii należy wymienić przede wszystkim: heurystyki: dostępności, zakotwiczenia, afektu, reprezentatywności oraz błędy emocjonalne pewność siebie, złudzenie kontroli, optymizm. Autorzy w swojej pracy skupią się na występowaniu optymizmu wśród uczestników rynku kapitałowego.

Cel badawczy: Głównym celem niniejszego badania była ocena poziomu i rozkładu optymizmu wśród inwestorów indywidualnych i analityków giełdowych oraz analiza występowania rozbieżności między poziomem optymizmu inwestorów indywidualnych i analityków giełdowych.

Metoda badawcza: Badanie zostało przeprowadzone w dwóch etapach. Pierwsze badanie przeprowadzono w okresie od września 2019 r. do marca 2020 r. Próba badawcza składała się z 37 aktywnych analityków giełdowych, przygotowujących rekomendacje maklerskie. Drugie badanie zostało przeprowadzone od sierpnia do listopada 2020 r. i objęło 1057 aktywnych inwestorów indywidualnych. Do zbadania poziomu optymizmu wykorzystano dwa testy psychologiczne: Test Orientacji Życiowej (LOT-R) oraz Skalę Orientacji Pozytywnej (POS).

Wyniki: Średnie wyniki testu LOT-R dla analityków giełdowych (14,38) i inwestorów indywidualnych (15,72) wahały się od 14 do 18 punktów, czyli były na średnim poziomie optymizmu. Inwestorzy indywidualni i analitycy giełdowi wskazują na zbliżony poziom optymizmu

dyspozycyjnego mierzonego testem LOT-R. Odmienny wynik uzyskano w teście POS, gdzie inwestorzy indywidualni (31,97) wykazują wyższy poziom orientacji pozytywnej niż analitycy giełdowi (29,49). Wartością dodaną artykułu jest wykorzystanie testów psychologicznych do badania poziomu optymizmu wśród uczestników rynku kapitałowego, a także porównanie poziomu optymizmu pomiędzy inwestorami indywidualnymi a analitykami giełdowymi.

Słowa kluczowe: optymizm, inwestorzy indywidualni, analitycy giełdowi, LOT-R, SOP.