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Research Paper

Investor Sentiment Model based on Asymmetric Conditions of Strategies in Psychological Games of Stock Price[1]

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INTRODUCTION

Examining the sales volume of ordinary investors in the form of converging or diverging sentiment can be meaningfully related to the expected inflation modulating variable. Unintentionally, it can be placed in the flow of the chains of the information cascade of herding behavior by the currency market. According to the possible patterns of Barberis et al. (1998), the framework of optimism and pessimism of variable situations resulting from psychological and signal games of primary investors, this model can be used in a general form of patterns derived from continuous functions and around the stock market price mechanism according to the patterns of Bikhchandani et al. (1992). The importance of designing this model to maintain the measurement

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indicators of investors (Baker et al., 1997; Statman, 2011) in relation to the main theories and two approaches, from top to bottom related to exogenous factors and from bottom to top related to endogenous factors, is their psychology. The main issue of the research is related to modeling the expected and non-expected situations of primary investors in the form of selling and holding shares based on the Markov probability distribution in dynamic psychoanalytic games (DGPS) in accordance with the theories of Battigali et al. (2008) and Gina Kopelos et al. (1989), which are related to the updated beliefs of the first and second levels. The structural equation model data of this research was obtained in the period from the beginning of 2015 to the beginning of 2020 and within the framework of impulse correlations with three-factor models of Fama and French and four-factor models of Carhart (1995) in a coded process of reflected and related data. This data was collected with question items in accordance with the theory of Corbin and Strauss (1998). The findings of the research show one-way and two-way convergences in relation to the behavioral impulses of investors concerning the received signals from both currency and stock markets. People with currency market signals in an unexpected situation followed their signal in one direction. Conversely, in an expected signal situation, they followed two signals from the currency market and the stock market convergently. These findings of the comprehensive investor model can show a more optimal probability distribution for Banerjee's (1992) models in relation to less economically developed countries.

MATERIALS AND METHODS

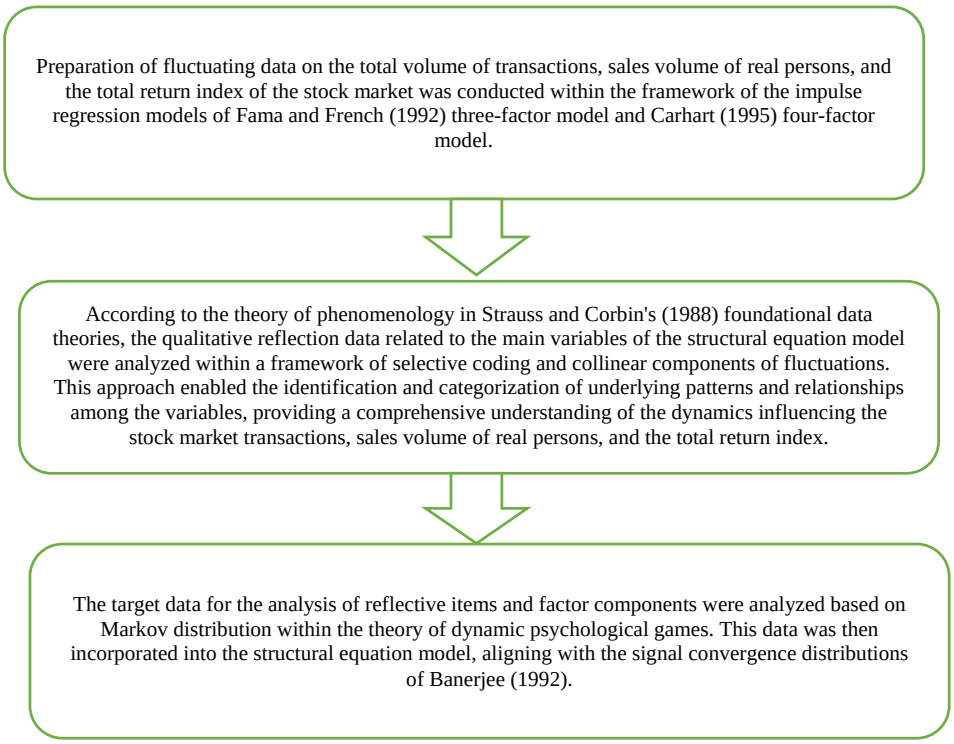
The purpose of this research is analytical and causal, with a retrospective approach in terms of practical results and the time dimension of the data. Data collection for this research was conducted through the Kodal website, Novavaran Amin Stock Exchange Data Service Company, and the Central Bank. During the screening of the statistical population, 73 sample companies from all the companies listed on the Tehran Stock Exchange were selected based on the following conditions:

a. The same financial periods
b. Full presence in the stock market
c. c) Certain availability of data related to the sales volume of natural persons along with other required data.

The target data collection model for analyzing the main and secondary hypotheses related to the research questions, and finally the factor analysis of reflective and question items, was conducted according to the theory of data phenomenology of the

foundation in accordance with the theories of qualitative and selective coding of Strauss and Corbin.

(1988) for use in Smart-pls and SPSS software in line with the following three basic steps:



RESULTS AND DISCUSSION

The analysis of the research model aligns with the main hypotheses related to structural equations and is based on the main theories of Bikhchandani et al. (1992), Christopher Zemsky (1998), and Banerjee (1992). The results of the three-part tests—structural model fit, measurement model fit, and general model fit of convergence validity—at two levels of identifiers and factor loading coefficients, according to the theory of Holland (1999), were used to confirm the main hypotheses and validate their standard values. In connection with the test of the sub-hypotheses related to the comparison of the main and sub-paths of the structural equation model of the research, the results show a significant difference in the exit of real investors from the capital market in both expected and unexpected situations. The analysis of the factorial component coded in relation to the reflective items of the structural equation model shows the separation of mass behavioral convergences in the form of dynamic patterns of investors' sentiments in expected and unexpected situations from cognitive biases. In unique time frames of optimism in currency and capital markets, real investors can

exhibit two-way convergence in the signals of these markets. Conversely, during periods of pessimism in the markets, the convergent behavioral impulses of individuals appear in the form of one-way signals.

CONCLUSION

The collective behavior of investors is shaped by a shared belief directly linked to their sentiments, influencing fluctuations in the stock price index through collective actions and distinct impulses. This study aims to develop and generalize an updated model of mass behavior based on Barberis' investor sentiment model and the framework of dynamic psychological games (DGPS), which considers cognitive biases and the impact of general and macroeconomic factors.

Indicators measuring investor sentiment primarily include total transaction volume and liquidity in the capital market, aligning with studies by Barberis et al. (2008) and Malcolm Baker and Jeremy Stein (2004) on investors' reactions under low and high sentiment conditions. Exogenous factors contributing to emotional states of optimism and pessimism are defined, alongside endogenous factors like risk aversion and unique risk-taking behaviors.

The research expands Banerjee's (1992) probability distribution model by integrating a cyclical and dynamic investor sentiment model rooted in psychological theories of mass behavior. This model addresses optimistic and pessimistic scenarios in both stock and related markets. The comprehensive model aims to define components for measuring investor sentiment, building on Baker et al. (2007), and understanding collective behaviors described by Bikhchandani et al. The model adapts to contemporary market dynamics, providing a nuanced definition of one-way and two-way convergences in relation to investor transaction volumes and the participation of ordinary investors.

The findings reveal that when stock and currency markets exhibit minimal fluctuations, herding behavioral chains converge unidirectionally around market price mechanisms. In contrast, during periods of greater market volatility, these convergences become bidirectional, aligning with theories such as Modigilini and Chan (1979), Fama (1981), and Campbell et al. (2004) on monetary illusions.

Keywords: Herding behaviors, Investor sentiment model, Dynamic psychological games, Momentum, Asymmetric strategies.

JEL Classification: C92, C63, C73, C36, C57.