Journal of Financial Management Strategy
Alzahra University
Vol. 10, No. 37, Summer 2022

pp. 17-20

Research Paper

Impact of Investors' Emotional Decision on Occurrence of Crisis in Tehran Stock Market[1]

Gholamhossein Golarzi[2], Salimeh Piri[3]

Received: 2021/07/13 Accepted: 2022/02/03

Introduction

The stock market crisis is an important subject to all market participants. Shiller (1987) finds that a stock market crisis is caused by a change in investor sentiment. One of the paramount issues in behavioral finance is the investors' sentiment and its effect on the stock prices. That means financial decisions, like other decisions, are partly exposed to investors' emotions. The impact of emotions on financial decisions is somewhat undeniable, but sometimes because of fear, agitation, and greed, its effect may be higher than usual. In general, whenever investors become over-optimistic, the stock prices rise too much and bubbles form. When prices start to correct, a market crisis appears. In addition to investor sentiment, other economic variables such as interest rates, inflation, GDP, and the P/E and ROA ratios, explain the crisis in the stock market.

Brown and Cliff (2005) believe that stock prices tend to be overvalued when investor sentiment is high. As their expectations are not met, prices begin to revert toward intrinsic value, and with falling securities prices, a crisis in the market may occur.

Baker and Wurgler (2006) say that an uninformed demand results in mispricing and price fluctuations. They divide traders into two groups, including informed and

1. DOI: 10.22051/JFM.2022.36915.2575
2. Assistant Professor. Faculty of Economic and Management, Semnan University. Semnan, Iran. (Corresponding Author). Email:g_golarzi@semnan.ac.ir.
3. M.Sc. Department of Business Management (Finance), Faculty of Economic and Management, Semnan University, Semnan, Iran. Email: s.pir240@gmail.com.

uninformed traders. Informed traders rationally predict the intrinsic value of securities. But uninformed or noisy traders are more likely to trade based on emotion. Noisy traders' decisions lead to unrealistic prices and create a gap between intrinsic value and market prices. When they become aware of their misconceptions, their trading direction will reverse, and the possibility of a market crisis increases.

Several empirical studies have been conducted to measure the impact of investors' sentiment on the capital market crisis like Lee, Shleifer, andThaler (1991), Brown and Cliff (2004), Haung, Zheng and Chia (2010), Yin and Tian,(2017), Asadi and Morshedi (2019), Tanani (2020), Zouaoui, Nouyrigat and Beer (2011), Pan, Xu and Zhu (2021). Most of the emprical studies measured the risk of the stock market crash via Down to Up Volatility (DUVOL) or negative conditional skew standard.

The main contributions of this study are as follows: first, we measure the risk of a stock market crash through a probabilistic index called CMAX. Second, this study tests hypotheses by maximum likelihood or logistic regression.

The hypotheses tested in this study are:

- Economic variables have a significant effect on the occurrence of crises in the Tehran Stock Exchange.
- Investors' sentiment has a significant effect on the crisis in the Tehran Stock Exchange.
- Investors' sentiment with the control of economic variables has a significant effect on the crisis in the Tehran Stock Exchange.

MATERIALS ANA METHOD

The type of the study is applied research in terms of purpose, and correlational in terms of nature, and has been conducted for 15 years, from April 2006 to March 2017 on 179 companies listed on the Tehran Stock Exchange. The dependent variable is the probability of a crisis in the Tehran Stock Exchange, which is calculated using Patel and Sarker (1998), So called the CMAX index.

$$CMAX_{i,t} = \frac{P_{i,t}}{max(P_{i,t-24} \dots , P_{i,t})}$$

$$\mathrm{C_{i,t}} = 1 \quad \text{if} \quad \mathrm{CMAX_{i,t}} < \overline{\mathrm{CMAX_{i,t}}} - 2\sigma_\mathrm{i}$$

$$\mathrm{C_{i,t}} = 0, \qquad \text{otherwise}$$

Explanatory variables of the research include investors' sentiment, interest rate, inflation rate, GDP, P/E ratio, and return on assets (ROA). Investor sentiment is calculated with the stock market sentiment index (EMSI) according to Bandopadaya and Jones (Bandopadaya, Jones. 2006):

$$EMSI_{i,t} = \frac{\sum(R_{I,t} - \overline{R}_r)(R_{I,v} - \overline{R}_v)}{\sqrt{\sum(R_{I,t} - \overline{R}_r)^2}\sqrt{\sum(R_{I,v} - \overline{R}_v)^2}} * 100$$

$$100 \leq EMSI_{i,t} \leq +100$$

$R_{i,t}$ denotes monthly stock return rank of company i in month t, $R_{i,v}$ is a historical volatility rank of company i in month t, $\overline{R}_r$ Average rank of monthly stock returns of companies, $\overline{R}_v$ Average rank of historical volatility of companies' stocks.

Hypotheses' Test:

The first hypothesis of the research is tested with the following logit model:

$$Pr(I_t = 1) = f(\alpha + INT_t + INF_t + GDP_t + P/E_t + ROA_t)$$

The second hypothesis of the research is tested with the following logit model:

$$Pr(I_t = 1) = f(\alpha_0 + \alpha_{n+1} SENT_t)$$

The third hypothesis of the research is tested with the following logit model:

$$Pr(I_t = 1) = f(\alpha + INT_t + INF_t + GDP_t + P/E_t + ROA_t + \alpha_{n+1} SENT_t)$$

RESULTS AND DISCUSSION

By testing the first hypothesis, we found that economic variables affect the crisis in the Tehran Stock Exchange. In other words, testing the first hypothesis shows that GDP, ROA, and inflation are negatively and interest rates and P/E are positively related to the crisis in the stock market. Our findings in this section are consistent with Zouaoui, Nouyrigat, and Beer (2011), Zhang, Xian, and Fang (2018), Moradi, Appolloni, Zimon, Tarighi, and Kamali (2021), Ahmadpour, Zare, and Heydarirostami (2015).

The effect of investors' sentiment on the crisis of the Tehran Stock Exchange was tested according to the second hypothesis. We find that investors' sentiments have a positive and significant effect on the stock market crisis. This finding is consistent with Kumar and Lee (2006), Haung, Zheng and Chia (2010), Yin and Tian (2017), Asadi and Morshedi (2019), Tanani (2020), Zouaoui, Nouyrigat, and Beer (2011) and Pan, Xu and Zhu (2021).

By testing the third hypothesis, the effect of investors' sentiment on the TSE crisis was confirmed. We found that economic variables, along with investors' sentiment, could better predict the crisis on the Tehran Stock Exchange. This finding is also consistent with Zouaoui, Nouyrigat, and Beer (2011) and Zhang, Xian, and Fang (2018).

CONCLUSSION

According to the study's findings, investors' sentiment and economic variables such as interest rates, inflation, GDP, ROA, and P/E affect the probability of a crisis in the Tehran Stock Exchange.

Since most emotional decisions are made by noisy investors, it is recommended that such investors be encouraged to make indirect investments. It will reduce the weight of emotional decisions and thus, wil stabilizes the market.

Keywords: Investor Sentiment, Behavioral Finance, Stock Market Crise.