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Free Float Supercharging and its Impact on Company Performance

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ABSTRACT

One of the mechanisms which can direct investors to invest more efficiently to get more returns is the amount of free float. This type of shares is a percentage of the company's capital that is available for trading or can be traded without any restrictions. The difference in the amount of free float in various countries, industries, sectors and companies at different times show the fact that the amount of free float is affected by different factors and variables. This has led many researchers to investigate factors which can lead to find its effective amount. The main concern of analysts is to estimate the theoretical value of stocks and asset prices with a comparable tool such as free float. Of course, from the viewpoint of market participants, the relationship of different levels of free float shares to key measures and tools such as company performance is not yet clear. Therefore, this study aims to investigate stock supercharging by increasing the percentage of free float and its effect on the performance of companies. In this study, 128 companies listed on the Tehran Stock Exchange were selected, which were active in the fiscal years 2009 to 1397. After Panel Data Method with random effects was used for the research regression model, the results indicate a positive and significant effect of free float on the performance of companies.

Keywords:

stock supercharging, free float, company performance.

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1. Introduction

The main incentive of any stock exchange organization as the basic institution of the capital market is to attract savings and stray liquidity in society, to direct them to high-yield activities, and to optimally allocate scarce financial resources. In addition, one of the important roles of the stock exchange is to facilitate re-trading and re-converting stocks into cash. This can only be achieved when at least a percentage of the company's stock is available for sale in the market.

On the other hand, companies have two types of shareholders: a) strategic shareholders who hold a high percentage of shares and are not willing to sell them and use them to guide and control the company. In contrast, there are shareholders who hold the remaining shares of the company in small amounts. These shareholders with low stock amounts have no purpose other than earning money due to price differences and dividends, and they are willing to offer their stocks with relatively reasonable returns. The amount of shares held by these shareholders is called free float shares (Mirzaei-Abarkooh, 2018). The law-makers of various stock exchange organizations consider those shares of a company to be free float which are more likely to be exposed in the trading process. In fact, the supply and demand of these shares determines the company's stock price and shows the capability of the stock, and blocked stocks have no effect on stock price fluctuations due to their absence in the supply and demand process (Shobe, 2017).

Due to high diversity of investment, investors choose from a variety of options. This choice is based on risk and performance characteristics. Every rational person invests aiming to get the right return. Gaining information about free float is one of the ways that can guide them to invest more properly to get more returns. Free float is a percentage of a company's capital that is available for trading, or in other words, it's a portion of a company's stock that can be traded without any restrictions. If the float shares amount of a company is low, its major shareholders can easily change the stock price; but if the amount of free float is higher, the probability of price manipulation and interference is reduced in the price system set by the market.

In addition, free float is any stock that is not owned by strategic shareholders, and strategic shareholders have a direct impact on the company's performance by using the power of control and changing the management system; Thus, the amount of float shares can change strategic and non-strategic shareholders, and this change ultimately affects the company's performance by affecting the management system or the way the company is controlled. Therefore, according to what was mentioned, the need for research is obvious in Iran on the impact of free float shares on the companies' performance.

This study will try to convince shareholders and company owners to have free float shares as a way to invest safely and have better future performance by examining the performance of companies that have float shares. Keeping this in mind, the research question is expressed as follows based on the research conducted by Edwards *et al*. (2018):

1) What effect does the amount of free float have on the performance of companies?

It should be kept in mind that the supercharging concept suggested by Edwards *et al*. (2018) is associated with the initial public offerings having contracts with taxes receivable. However, due to the fact that this issue is not identifiable and definable in Iran, in this study, the supercharge plan means a higher amount of free float shares in all listed companies.

2. The Review of Research Literature

2.1. Performance

Performance is a multidimensional relative concept that includes results and the processes of achieving them; It should be remembered that the qualitative and quantitative criteria applied to performance are its representative, and are different from it. In general, performance is the comparison of results with several selected or imposed internal or external patterns or references, or in other words, the comparison of results with expectations. Some scholars believe that performance should be described as the result of work. "Employee performance is a function of three factors: a) ability and skill, b) effort in performing tasks and c) environmental support (Rohollahi, 2020).

In another definition, performance is the extent to which a business achieves a specific goal. In other words, it's the quantity and quality of what is obtained through it. According to this definition, the output of an institution at the end of a certain period of time is the job performance. It's also defined as the result of

activities which is the degree to which the institution achieves specific goals (Yogor and Yulosovi, 2013).

2.1.1. Performance evaluation and measurement

The purpose of the performance measurement is for managers to have a clear understanding of various aspects of their organization so that they can make smarter decisions. The increasing importance of the managers' position in the present era indicates the emergence of a new paradigm. Since managers are important elements in the realization of an advanced industrial society, any society must adopt methods that pave the ground for the optimal use of the development factors. In fact, in a world that is constantly changing, the survival of a society depends on its ability to produce competent managers.

In addition, retaining a manager is as important as his or her ability. Therefore, by measuring the performance of the manager of each organization, it is possible to understand his competencies in achieving the goals of the organization in line with the mission and strategic plans, and necessary planning can be done to maintain that manager and improve his performance. Since the use of human and material resources of any organization depends on the decisions of its managers, measuring the performance of managers can lead to improving the performance of each organization (Fattahi et al., 2020).

Performance appraisal is the process of measuring, evaluating, and judging performance over a period of time. In the organizational dimension, performance appraisal is usually synonymous with the effectiveness of activities. Here, effectiveness also means the extent to which goals and programs are achieved with the characteristics of the efficiency of activities and operations. In the resources use dimension, performance appraisal is also expressed in the form of performance indicators. If, in the simplest definition, the ratio of pay to receipt is efficiency, the performance appraisal system, in fact, measures the effectiveness of management decisions in the optimal use of resources and facilities. Performance appraisal is the measurement of performance by comparing the current situation with the desired or ideal situation based on pre-determined indicators, which themselves have certain characteristics.

In general, the performance appraisal system can be a process of testing and measuring the method of achieving the desired condition and its comparison with certain criteria, indicators and attitudes, which is done in a specific domain and period of time with the aim of reviewing, reforming and continuously improving (Affari &Ahmadi, 2020).

The performance appraisal system includes operations that can be the key to success. Scales for detecting deviations scales for tracking past developments, scales for describing situational potential, scales for products, scales for data, and so on. The performance appraisal system should also include a part that continuously checks the validity of the cause-and-effect relationships between appraisals (Santos et al., 2007).

There are at least seven scales for evaluating an organization's performance that are not necessarily distinct from each other. These scales are:

1) Effectiveness: It is the degree to which we have reached the predetermined goals. In other words, effectiveness shows how much of the desired results have been achieved with the efforts made.
2) Efficiency: Efficiency is the amount of resources that have been used to produce a unit of product and it can be calculated in terms of the ratio of consumption to product (Zeinali, 2019).
3) Benefit and profit: In a simple definition, it is the ratio of sales to costs.
4) Productivity: Productivity is the relationship between the output of a production system to the inputs used (such as capital, energy, labor, etc.) in order to produce that output (International Labor Organization) (Zeinali, 1398).
5) Quality of work life: This concept means the mental perception and understanding of an organization's employees from the physical and psychological desirability of their work environment (Mirsepasi, 2005).
6) Creativity and innovation: Creativity means using mental abilities to create a new idea or concept (Nejadirani, 2002, p. 31).
7) Quality: Doing the right thing and responding to the needs and expectations of customers (Beikzad et al., 2010, p. 153).

2.1.2. Importance of performance appraisal

The importance of performance appraisal can be examined from different angles. Being able to evaluate

performance is an undeniable necessity, and all economic enterprises have to evaluate their operations in different periods. The main reasons for fulfilling a performance appraisal are:

A) Shareholders and creditors allocate their limited financial resources to the firm. Therefore, evaluating the performance of the firm is important and vital to ensure the allocation of limited resources.
B) Performance scales and measures are considered as management control systems, because effective economic planning and decision control need to evaluate how the units are working.
C) Making rational decisions is directly related to evaluating the performance of the enterprise.
D) R) The appraisal system shows the company's ability in creating value.
E) G) The appraisal system provides a basis for compliance or non-compliance with organizational and external instructions, directives and laws.
F) The appraisal provides a basis for the payment of salaries or bonuses to managers and even their promotions.
G) The system provides the necessary controls over the company's operations in order to achieve organizational goals (Sa'adat, 2011).

2.1.4. Accounting Models for Performance Evaluation

2.1.4.1. Return Measurement Criteria Based On Accounting Information

Company performance appraisal is one of the most important issues for investors, creditors, managers and governments. In practice, there are different criteria for performance evaluation. The result of the accounting information system is financial statements in which the reported profit is of great importance to users. Relying on accounting profits, investors evaluate a company's performance to make their forecasts accordingly. Managers also use profits to plan the future of companies. Accounting measures are divided into two categories: the first category is based on accounting information and the second category is based on both accounting information and market information, which mainly use the historical information provided by basic financial statements and its associated notes to measure the company's performance. .

A) Stock prices

The cash amount on which the buyer and seller agree to exchange a stock in a free exchange is called the stock price (Ja'fari, 2009, p. 8). In the financial literature of theories, there are different analyzes for stock valuation. There are two perspectives on determining stock prices: A group called technical analysts believe that technical analysis can predict stock prices in the future. This group tries to predict stock returns by examining stock price patterns in the past. The other group is called the fundamentalists. This group uses fundamental analysis to analyze and determine stock prices. In this view, stocks are assumed to have intrinsic value. Intrinsic value includes both expected returns and risks. Most economic and financial experts believe that present value is the best estimate of economic value. They argue that this value is directly related to the expected cash flows of future benefits and also takes into account the time value of money (Ahmadpour and Rasa'ian, 2006).

B) Profit

The accounting profit generated by using the accrual system is considered by many users of financial statements as a tool to measure a company's performance. A company's performance measurement is the evaluation of the overall financial conditions and results of operations to make rational decisions. For example, the accounting profit can be the basis for the banks' accreditation to a company or be of the conditions for its listing on the stock exchange. The Financial Accounting Standards Board has mandated the use of accruals in accounting in its Statement No. 6 on Financial Accounting Concepts. Accordingly, reflecting the effects of a company's transactions and events does not necessarily mean the inflows and outflows of cash. In other words, in this accrual method, principles such as "realization" and "conformity" are used to reflect income and expenses and to also calculate accounting profit. Ultimately, a company's success depends on its ability to generate cash flows (Financial Accounting Standards Board, 1985).

C) Return on Equity (ROE)

The rate of return on equity is also called the rate of return on net worth. Using this ratio, a company's profit is calculated for each cent of equity (Rezanejad, 2010). This financial ratio examines the efficiency of the company in creating net profit for its shareholders.

In fact, this ratio indicates how much net profit a shareholder earns for each cent invested. Accordingly, this rate is obtained by dividing "net profit" by "owner's equity" (p. Neveu, 1987).

D) Return on Assets (ROA)

The return on assets rate indicates the ability of management to use assets efficiently, and it focuses more on the performance of the operation department. This criterion constitutes the DuPont system together with the debt ratio criterion (the extent to which the firm uses financial leverage). If additional assets are used in operations, it is as if operating costs have increased. One of the important advantages of the return on assets formula is that it forces managers to control operating assets along with controlling costs, net profit rate and sales volume (P. Neveu, 1987).

2.1.4.2. Criteria based on both accounting information and market information

In addition to using the information in the basic financial statements and accompanying notes, these metrics often use market information to measure company performance. That is why these criteria maintain the advantages of the previous criteria while eliminating some of their disadvantages. In other words, since we use market information, too, this kind of criteria is somewhat more relevant and more in line with reality. However, these criteria are relatively unstable and then less reliable because market information is constantly changing. In general, these criteria measure the company performance more accurately they take precedence over the ones which are based on historical information since. This group includes price/earnings ratio (P / E), market value-to-book value ratio and Q-Tobin ratio (Abbasabadi, 2014).

A) Price/earnings ratio (P/E)

The P/E ratio, which is calculated by dividing a company's share (stock) price to the company's earnings per share, is a common tool to analyze the situation of companies, industries and markets,. This ratio indicates the amount that investors must pay for each rial of profit. The price/earnings ratio uses the company's revenue as the basis for the value of its stock investment. The ratio is an estimation to find out whether companies are overvalued or undervalued (Abbasabadi, 2014).

B) Market value-to-book value ratio

This ratio is calculated by dividing the market value of a company's share by its book value. The book value of a share reflects its historical value. On the other hand, the market value of the share is a reflection of the future cash flows that the company will earn; If the company is managed and organized in such a way that it plans and performs its duties with full efficiency, the market value will be higher than the historical and book values; so this ratio will also be higher. On the one hand, the market value-to-the book value ratio of stocks expresses the way investors think about past performance, and on the other hand, it reflects the future outlook of the company.

C) Tobin's Q ratio

Tobin's Q ratio is another tool to measure the performance of companies; it's obtained by dividing the market value of a company's physical assets by their book value or their replacement value. This ratio was introduced by Mr. James Tobin in macroeconomic analysis to predict the future of investment activities in 1978. His goal was to establish a cause-and-effect relationship between the Tobin's Q index and the amount of investment made by a company. If the calculated Tobin's Q index for a market company is greater than one, there is a lot of incentive to invest, in other words, a high Q-Tobin ratio is usually a valuable indication of the company's growth opportunities. If the ratio of Tobin's Q is less than one, the investment will be stopped. If the company takes advantage of all investment opportunities, the final amount of Tobin's Q will get closer to the number 1. (Abbasabadi, 2014).

2.1.4.2. Economic criteria

Economic criteria try to use economic information as a basis for evaluating the performance of companies by converting accounting information into economic information by making some adjustments. In other words, these criteria evaluate the performance of a company by taking into account the profitability of its existing assets and potential investment as well as the rate of return and the cost of capital. The most important criteria to evaluate performance with economic criteria are as follows:

1- Market Value Added, 2- Economic Value Added, and 3- Revised Economic Value Added

- **Market Value Added**

Market Value Added is the accumulated value made by the manager out of the capital invested. In other

words, MVA is achieved by calculating the difference between the current market value of a firm and the capital contributed by investors. Therefore, this criterion is considered as a kind of external organizational criterion for evaluating management performance. In the context of modern financial theories, the Market Value Added is more or less the present value of a company. If we think of the company as a set of investment projects, its Market Value Added is the estimated market value of their current value (Stern and Shiely, 2001).

- **Economic Value Added**

Economic Value Added is an estimate of a firm's economic profit, or the value created in excess of the required return of the company's shareholders. EVA is a relatively new measure that can both encourage managers to make optimal use of financial resources and help investors choose low-risk and high-yield options. This criterion is a reliable alternative to the criteria which are based on accounting models and used to evaluate the companies' performance (Chen and Dodd, 1997). Stuart defines Economic Value Added as the primary measure or the ultimate representative of Market Value Added. In his view, EVA is the left over return that is derived from the deduction of capital costs from net operating profit after tax was paid (Stewart, 1991).

- **Refined Economic Value Added**

Refined Economic Value Added is a measure of performance that accurately calculates the ways in which a company's value increases or decreases. This measure indicates the left over profit after deducting capital costs. Refined Economic Value Added considers the opportunity cost of shareholders and the time value of money as an evaluation criterion, and removes definitions resulting from the application of accounting principles. Mathematically, the results obtained from REVA formula are exactly equal to the values obtained through the discounted or net cash flows of present value (Barghamadi, 2013).

2.2. Free Float Shares

The existence of a strong capital market is one of the important pillars of the economic growth and development of countries. This market along with its internal mechanisms determines the fair price of stocks and deals with the optimal allocation of capital. These two factors are among the important capacities of a capital market which have effects on the economic growth and development of a country. However, allocation is optimal only when most of the capital is focused on the most profitable activities. Investors choose among a high diversity of options and their choice is based on the risk and return characteristics. Every rational person invests aiming to achieve a good return (Bagheri, 1399). Free float along with its effects on the stock price and return is one of the criteria that can guide investors to invest more properly to earn higher returns. Given the importance of the role of the private sector in the capital market and reducing the role of government ownership in the shares of listed companies, float shares can be used as a financial leverage to increase companies' performance and reduce stagnant liquidity in the stock market. Thus, today, many stock exchange organizations in the world remove the companies with less than 21% of free float shares from the listed companies (Khajavi and Rostamzadeh, 2013). So far, no clear definition of free float has been provided. In general, however, a portion of each company's stock is considered free-float that is more likely to participate in the trading process. Because, in fact, it is the supply and demand of this part of the stock that determines the stock price of the company and shows the liquidity of the stock. Blocked stocks have no effect on stock price fluctuations due to their absence in the daily supply and demand. The concepts of strategic and non-strategic shareholders have been used to define float shares.

A) Strategic shareholders: This is a group of shareholders who usually invest in companies for managerial positions and long-term goals, and the shares held by them are not considered as free float shares. These strategic shareholders are reluctant to sell their shares for a variety of reasons such as they may have political or social goals and/or they do not incline to lose their position in the company. Strategic shareholders can be of the following categories having small differences in different indicators (Hasanjani, 2008):

- Governments: shares of companies, foundations and government agencies
- Companies: Shares of companies that are held by their ownners, ie mainly treasury shares.
- Shares of others: This category includes stocks of board members and managers and family members who have a managerial role in the company or those who are affiliated with it.

- Shares of employees and workers (which is sometimes considered in the definition of free float shares).
- Shares held by banks, insurance companies and retirement pension funds.

B) Non-strategic shareholders: This group of shareholders are those whose main purpose is to buy and sell shares to make a profit, and they do not have managerial goals of buying shares of a company. In this definition, some of the categories mentioned above for strategic shareholders can have room among non-strategic shareholders if they do not have managerial and control goals. According to the above classification, the percentage of each company's free float shares is calculated based on the information contained in the composition of shareholders in the last annual general meeting; the percentage is adjusted during the year according to changes in the ownership structure of the due company. Iran Capital Market Research Center considers free float shares as a percentage of the company's total capital that is available for trading in the stock market, or it's regarded as a part of a company's stock that can be traded without any restrictions. Free float shares for the companies listed in Tehran Stock Exchange are calculated every three months as follows and are made public.

1) Shareholders who own more than 5% of a company's shares are considered as strategic shareholders.
2) If the total number of groupmates, cross-ownership and family shareholders is more than 5%, it is calculated as non-float shares (Reyhani et al., 2018).

Neumann and Voetmann's (2011) research showed that adjusting the stock index based on the percentage of free float shares caused the companies with low float to fall down in trading leading to their stock prices to drop, but having a high percentage of float shares made the due companies' trading volume to grow. This issue changed the investors' behaviors and the demand curves since they replaced their stocks of low-float companies with the stocks of higher free float companies in their portfolios. Also, Chakrabarti's (2016) research showed that the elimination of low float shares in the calculation of market index reduces the trading volume and the company's performance, but increasing the amount of float shares in the index increases the trading volume and performance.

In addition, to explain and predict stock returns, various models and theories have been introduced such as capital asset pricing model, factor or index models, arbitrage model, and technical analysis. . In the fundamental analysis, stock returns are a function of macroeconomic conditions, industry status, and company-specific conditions. The specific conditions of the company include performance and financial position, which are presented in the form of basic financial statements. Developers of accounting knowledge claim that they provide useful information for decision makers, and one of the criteria to illustrate the usefulness of accounting information is its predictability (Saghafi and Sha'ari, 2005). In order to achieve economic growth and development and increase people's willingness to invest, basic policies must be adopted for new investments to gain a suitable return.

The main incentive of the establishment of stock exchange organizations as fundamental elements of the organized capital markets has been to facilitate the re-trading of stocks. In addition, another important role of a stock market is to attract scattered savings and stray liquidity in the due society, to direct them to more profitable activities, and to optimally allocate scarce financial resources. Therefore, the scattered funds of the private sector must be collected and re-allocated to improve the country's economy as well as to provide investors with resources. (Fleischer & Staudt, 2014). Therefore, the role of the private sector in the capital market should get more prominent, and the government should reduce its ownership role in the shares of listed companies. Otherwise, the amount of free float shares and consequently the volume of transactions will be reduced and the amount of stagnant liquidity will increase in the market (Barzideh et al., 2013).

Edwards et al. (2018) examined the effect of stock overcharging on stock prices and the performance of IPOs. They supercharged the shares of their research sample and compared the gained result with pre-supercharged conditions. Their findings indicated a positive effect of supercharging on corporate stock prices. Also, Mollahosseini and Ghorbaninejad (2008) examined the relationship between float share and stock rate. The results showed a significant relationship between float shares and rate of return.

However, this relationship was different at different amounts of float shares, but there was no significant relationship between them with different industries.

Kashanipour and Rezaei (2010) examined the effect of change in the amount of free float shares on stock returns. The results of their research showed that the change in the percentage of float shares is of informative content and has a significant effect on the stock returns of companies by reducing their rate.

3. Research hypotheses

Despite the studies on free float and firm performance in different countries, the relationship between these two variables has not been studied parametrically. Of course, the relationship between float shares and liquidity as well as the relationship between liquidity and performance has been studied in various studies (Monjazeb and Jalali, 2015). However, no research has been done in Iran on the relationship between performance and float shares. In this regard, this study aims to fill this study gap in this country by using linear regression method. The findings of this study may have some effects on the academic literature of free float shares, asset pricing, transaction structure, as well as some particular studies done on corporate financial performance. Therefore, the following hypothesis can be formulated to achieve these goals:

Hypothesis 1. The amount of free float has a significant effect on the performance of companies.

4. Research Methodology

In terms of purpose, the present study is of the applied type, because its purpose is to develop applied knowledge in a specific field, and it is directed towards the practical application of knowledge. In other words, this research aims to develop and improve methods, tools, goods and structures (Hafeznia, 2008). In addition, the present study is a quasi-experimental research done in the field of descriptive research. These studies are done to discover the existing facts or what is really going on. In fact, this research method is used to describe a research population in terms of the distribution of a given phenomenon. For this reason, the researcher does not discuss the 'why(s)' or the existential cause(s) of the distribution, but only describes the 'how(s)' of the distribution in the population under study. In other words, what the researcher wants to know is how individuals are distributed in a population based on a particular variable in the society (Delavar, 2006).

Given that this study used past information to calculate variables, it is a post-event research, and in terms of data analysis method, the research is a combined data approach. The statistical population of the study is the total number of companies listed in the Tehran Stock Exchange during the time period of 2009 to 2018. These statistical populations usually have a large size and a wide geographical area so that researchers can not refer to all of them; so they have to select a bunch of them as a sample and generalize the results to the study population (Hafeznia, 2005).

The systematic elimination sampling method was used in the present study and among the research population of the companies mentioned above, a sample of them was selected according to the following conditions and limitations:

1) To select a homogeneous sample, companies must have been listed on the Tehran Stock Exchange before 2009 and must be active on the stock exchange by the end of 2018.
2) To increase comparability, each selected company's fiscal year had to be on March 20. In addition, the company could not have changed its fiscal year period and the type of activity it was doing during the period 2009 to 2018. In order to obtain sufficient data, to do the performance comparison and to estimate research models, the sample companies must be continuously active in the stock market.
3) The investment and financial intermediation companies (such as leasing, insurance and holding companies, banks and financial institutions) are excluded from the sample since they have a separate reporting structure. Since these institutions' main income is from investment and they depend on the activities of other companies, these will make them different in nature, so that they should be excluded from the research.
4) the availability of the company's financial information.

After the above restrictions were applied, 128 companies were selected as the research sample. Next, the monthly magazines and internet sites related to the Tehran Stock Exchange were used along with the companies' financial information softwares to collect the desired data. Then, the excel software was used to

prepare the information: the information related to the research variables extracted from the above-mentioned sources was entered into the worksheets created by the software; then the necessary calculations were done to examine the variables.

Given the importance of the stated concepts and the due research background, the statistical model of this study, which is based on the research of Edwards et al. (2018) can be developed as follows:
The statistical model of the research to test the hypothesis:

Model 1

$$FUT\_PERFORM_{it} = \alpha_0 + \alpha_1 FREEFLOAT_{it} + \alpha_2 LAG\_PERFORM_{it} + \alpha_3 SIZE_{it} + \varepsilon_{it}$$

While its constituents are as follows:

- $\alpha 0$ = intercept
- FUT_PERFORMit = the performance of company i in year t;
- FREEFLOATit = the amount of free float stock of the company i in
- t;LAG_PERFORMit = the past performance of company i in year t;
- SIZEit = the size of company i in year t;
- ε = the model error.

The above variables are the numerical values of the attributes and qualities used to examine their relationship. To perform the phases of the present study, some variables were defined as follows:

The dependent variable: The future performance (FUT_PERFORM) is the ratio of operating cash flow divided by total assets (Edwards et al., 2018).

The independent variable: The amount of free float shares (FREEFLOAT) is a percentage of the total capital of the company that can be traded in the stock market without any restrictions. The percentage of free float shares is calculated by the Tehran Stock Exchange Organization published as quarterly reports. In order to obtain the annual free float amount of each company, we used the mean of the seasonal amounts of their float shares which were calculated and published by the Tehran Stock Exchange Organization (Abbasi and Mazerlou, 2011).

The Control variables: One of these variables **is** companies' past performance (LAG_PERFORM). This concept is the performance of a company in the past year, which is obtained from its operating cash divided by its total assets of the same year (Edwards et al., 2018). The other control variable is the company size (SIZE): Size is the natural logarithm of a company's total assets (Edwards et al., 2018).

5. Research Results and Discussion

We start this part of the research with descriptive statistics and the calculation of the central indicators such as mean and the scattering indicators including standard deviation, skewness and elongation. If the median values are higher than the mean values, it shows there are big amounts in the data, because the mean is affected by these values; in this case the data distribution is skewed to the left.

While examining the distribution of a statistical population, the the representative value around which the measures are distributed is called central value. Also, any numerical measure that represents the center of a data set is called Central Tendency Measure. Mean and Median are the most common central tendency measures. The main central measure is Mean, which indicates the equilibrium point and the gravity center of a distribution; Mean is a good indicator to show the centrality of the data. For example, the mean of the sample's free float is 0.33759, which indicates that most of the data related to this variable is concentrated around this point.

Table 1: the descriptive statistics of research variables

Variables	Number	Mean	Median	SD	Variance	Scewness	Elongation	The Change Domain
Company's performance	1280	0.14327	0.12842	0.139573	0.019	1.792	16.719	2.122
Free float	1280	0.33759	0.3000	0.187703	0.035	0.266	-1.077	0.690
LAG-perform	1280	0.19835	0.18514	0.143460	0.021	1.631	14.821	2.132
Company's size	1280	13.97425	13.74852	1.519100	2.308	0.896	0.933	8.905

Standard Deviation is one of the dispersion measures that shows, on average, how far the data is from its mean. If standard deviations are some numbers close to zero, it indicates that the data are close to their mean and they are not dispersed; While a high standard deviation indicates a significant data dispersion. In the statistical sample, the standard deviation of the companies' free float shares was 0.187703, which it can accordingly be concluded that the deviation from the mean in this variable was not high.

5.1. Inferential statistics of research variables

In this article, the inferential statistics will be presented considering the its importance in making conclusions.

5.2. Testing the normality of research variables

The normality of the regression model residuals is one of the regression assumptions indicating the validity of regression tests. Since the normality of the dependent variable leades to the normality of the model residuals, the distribution normality of the research variables, including the dependent variable, was investigated using the Kolmogorov-Smirnov test. Therfore, it is necessary to check the normality of the dependent variable before estimating the other parameters; if this condition is not met, a suitable solution should be adopted to normalize it. The null hypothesis and the opposite hypothesis for the test are written as follows:

H_0: The data of the research variables follow a normal distribution.

H_1: The data of the research variables do not follow the normal distribution.

As it can be seen, the probability value the Kolmogorov-Smirnov test for the performance variable is less than 0.05. Therefore, the research dependent variable is not normal and should be normalized. In this study, Johnson converter was used to do so in Minitab Software.

Table 2: Kolmogorov-Smirnov test to check the normality of research variables

Variables	No.	Normal Parameters		The most difference			Kolmogorov-Smirnov	Probability value
		Mean	SD	Absolute Value	+	--		
FREE FLOAT	1280	.54258	.178364	.023	.017	-.023	.023	.105c
Performance	1280	.33759	.187703	.088	.088	-.067	.088	.000c
LAG-PERFORM	1280	.19835	.143460	.057	.057	-.048	.057	.000c
SIZE	1280	13.97425	1.519100	.106	.106	-.046	.106	.000c

5.3. Correlation coefficient between research variables

In this section, to study the research variables, the correlation coefficients of them in pairs are shown in Table 2.4; in addition, the main outputs of the SPSS software are presented in Appendix 2 which shows the correlation matrix of the research model variables. The significance level of the correlation coefficient between the variables is shown in the second row in the above table. If the significance level is less than 0.05, the correlation coefficient is statistically significant at the 95% level of certainty.

Table 3. The correlations between research variables:

Variables		FREEFLOAT	FUT_PERFORM	LAG_PERFORM	SIZE
FREEFLOAT	Pearson coefficient	1	-.054-	-.058-*	.003
	Significance level		.052	.039	.915
FUT_PERFORM	Pearson coefficient	-.054-	1	.979**	-.047-
	Significance level	.052		.000	.095
LAG_PERFORM	Pearson cofficient	-.058-*	.979**	1	-.043-
	Significance level	.039	.000		.125
SIZE	Pearson cofficient	.003	-.047-	-.043-	1
	Significance level	.915	.095	.125	

** The correlation is gained at 0.01 level of significance * The correlation is gained at 0.05 level of significance

5.4. testing the stationary of research variables

One of the major problems that can occur in time series regression is the phenomenon of dummy regression. Dummy or false regression refers to a situation in which there is no significant relationship between variables, despite the presence of high R2. In researches based on time-series data, it is assumed that time-series is static. Each time series can be considered the result of a stochastic or random process. A random process is considered static when the mean, variance, and covariance, themselves, remain the same at different time intervals in the series. In order to ensure the accuracy of the research results and the regression analysis, a test was performed to calculate the root unity of the research variables and their stationary. The test was performed using Eviews 9 Software and Hadri Test using Bartlett Scale. The test results shown in Table (4) indicates the significance of the variables, so the 0 hypothesis saying that the variables have a single root was rejected.

Hypothesis 0: There is a unity of root between the variables.

Hypothesis 1: There is no unity of root between variables.

Table 4: Statinary test of hypotheses during the research period

Variables	Hadri Z value	Probability value
PERFORMANCE	5.40716	0.000
FREE FLOAT RATE	3.29741	0.000
PAST PERFORMANCE	5.91745	0.000
SIZE	4.04927	0.000

The inference: since the calculated probability value is gained at 5% less than the level of significancy, the 0 Hypothesis is rejected in favor of H1. Therefore, there was found no sustainability in the research variables.

5.5. Testing Research Hypotheses

As previously mentioned, the research hypothesis was formulated above stating that the amount of free float shares has a significant effect on the performance of companies. Also, the regression model used to test the research hypothesis was written and described above as Model 1.

The results of regression analysis of the research hypotheses are presented in the table below. It should be noted that in the first fitted model, the dependent variable was the company's stock price and in the second research model, the stock trading volume was the dependent variable.

The determination coefficient value gained for the research regression model was 0.71455 which shows that 71.4% of the changes of the dependent variable are expressed by the explanatory variables of the model.

The value of F probability for the fitted model was 0.000, which is less than 0.05. Therefore, it can be concluded that the whole statistical model is significant. The value of F statistic is equal to the number 8.77803, which indicates the goodness of the fitted model.

As it can be seen in the above table, the "Camera-Watson" statistic of the model is equal to 2.09898 and it is in fact between 1.5 and 2.5. Therefore, it can be stated that there is no autocorrelation between observations in this model.

The value of t-statistic gained for FREEFLOAT is significant and positive at 95% confidence level. The value of t-statistic for LAG_PERFORM is equal to 90.9072 and it's significant and positive at the confidence level of 95%. The value of t-statistic gained for SIZE is -2.7757 which is significant and negative at the 95% confidence level. The value of t-statistic gained for the intercept is equal to -10.4618, which is significant at the 95% confidence level in the non-rejection zone of H_0 , so, for this study, the fitted model is as follows:

FUT_PERFORM it = -1.273768 + 0.090549 FREEFLOATit + 6.523330 LAG_PERFORMit + -0.03298SIZEit +εit

The t-statistic obtained for the FREEFLOAT explanatory variable was 2.0134, which is statistically significant and positive at the 95% confidence level, considering the significance of 0.0000. Therefore, the hypothesis H0 is rejected at the 95% confidence level, and hypothesis H1 is confirmed stating that the amount of free float shares has a significant effect on the performance of companies.

Table 5: Research model estimation results

Parameters	Coefficients	t Value	Mean Square Error	Probability value	Result	VIF
α0	-1.2737	-10.4618	0.127	0.000	Significant negative	-
FREE FLOAT RATE	0.0905	2.0134	0.0449	0.0359	Significant positive	1.240
PAST PERFORMANCE	6.5233	90.20721	0.0723	0.000	Significant positive	1.381
SIZE	-0.0329	-2.7757	0.0118	0.0160	Significant negative	1.972
F Value			8.77803	F probability Value		0.000
Determination Coefficient			0.71455	Watson Camera		2.01984

Conclusion

Free float is the amount of stocks that are expected to be traded in the close future. There is no precise, clear and uniform definition of free float shares and how to calculate it in different stock exchange organizations. But the officials of different organizations consider a part of the shares of each company as free float that is more likely to participate in the trading process. In fact, it is the buying and selling of this part of stocks that determines the stock price of a company and creates its liquidity. If a firm's free float is high, its liquidity will be potentially higher and its price fluctuations will be lower; as a result, the investment risk will be lower, too. The results of this study answer some of the questions and ambiguities about the relationship between free float rate and company performance. Researches on the various issues of the stock exchange can identify the strengths and weaknesses of its mechanisms and help stock exchange organizations to play their basic role in the market. Also, these researches can help shareholders to make right decisions so that the optimal allocation of economic resources is done in a more favorable way and the investment situation gets better.

The financial statements of the companies listed on the Tehran Stock Exchange were used to test the research hypotheses,. To do so, the companies listed on the Tehran Stock Exchange were considered as the statistical population of the study. Then, by applying conditions such as continuous activity over a period of 10 years from the beginning of 2009 to the end of 2018, their fiscal year compliance with the solar year, and information accessability, 128 companies were selected as the statistical sample of the study. Finally, after applying the above conditions in the sampling process, their information was evaluated in 10 fiscal years. Next, Nowin Rahavard Software Database was used to obtain information on financial statements and market prices of the sample companies. The model used to test the research hypotheses is data panel regression. The results showed that the more a company's shares are traded in the market, the more its transactions will be made so that its liquidity will get better. In other words, the amount of free float shares has a positive and significant effect on the performance of companies.

Practical Suggestion

According to the above findings, the following points are suggested:

1) Set appropriate and transparent rules on the minimum amount of float shares: Some listed companies do not supply the minimum amount of free float shares set by the Stock Exchange Organization. The stock exchange organizations are advised to make more appropriate and strict rules in this field by examining the appropriate amount of float shares.
2) Facilitate the participation of small investors: Unlike institutional investors who want to buy and hold stocks, the participation of small investors is important because they create a balance in the stock market. The presence of these shareholders makes float shares more tradable. Therefore, stock exchange organizations are advised to make decisions that increase the presence of small investors.
3) Buy shares of large companies with high amounts of float shares: Investors are advised to buy shares of large companies with high float percentage, because the performance of these companies is less affected by strategic shareholders.

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