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Investigating the Factors Affecting the Specific Volatility of Stocks in the Iranian Capital Market Using the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) Model

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Abstract
Introduction: The capital market may face fluctuations in stock prices, which is considered a kind of investment risk. Developing countries, including Iran, have a high degree of instability in stock prices, and these fluctuations, in turn, create an uncertain environment for investors. The fluctuations of the stock market affect not only the national economy but also the regional and global economy. According to this issue, the present research was investigated with the aim of investigating the factors affecting the specific volatility of stocks.
Methods: This research was conducted in three stages. In the first step, unconditional special fluctuations were gathered by time series regression. In the second step, conditional-specific volatility was collected by Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model, and in the third step, the impact of factors affecting stock-specific volatility was evaluated by combined data regression. The statistical population of the research is Tehran stock exchange companies, which were selected as a statistical sample by applying 5 restrictions, to 91 stock exchange companies in the period of 2018-2019.
Results: The regression results of the combined data showed that the variables of company size (SIZE), Cumulative return (MM), cash flow to price (CF/P), and return on assets (ROA) were equal to 0.059., 0.293, -1.143 and 0.103, respectively which have an effect on the volatility of stocks. Also, the ratio of market value to book value of equity (BM) and liquidity (LIQ) does not affect the specific volatility of stocks.

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1. Introduction

The capital market is one of the most important financial markets, which is an indicator of the economy of any country. Stock market fluctuations affect not only the national economy but also the regional and global economy (Corbett and Larkin, 2020). On the one hand, the stock market is a place to collect savings and liquidity of the private sector in order to finance investment projects, and on the other hand, it is an official and reliable source that the holders of stagnant savings can search for a relatively suitable and safe place to invest and use their funds to invest in companies. The capital market is considered one of the most important financial markets, because this market reflects the price of assets in the economy more than other markets and is usually very sensitive to economic conditions. Volatility modeling (conditional variance) is in the focus of financial issues and is very important in predicting the future volatility of markets.

A good model suitable for volatility should be able to predict volatility. This forecast is important in issues such as risk management, derivatives pricing, risk coverage, portfolio diversification, marketing, policy making and other financial activities. Capital market prices often show fluctuations, while price fluctuations are part of the nature of the market. But sometimes these fluctuations go out of their normal form and cause concerns about the permanent deviation of the stock price from its intrinsic value and the sudden ups and downs, which, in this case, are based on expectations and expectations. Insights of influential economic factors It will be and will cause irreparable damages to the economy (Chong and Kim, 2019).

Periods of instability and abnormal volatility in capital markets have occurred throughout financial history. The uncertainties that have caused such events range widely, from pandemics to disruptions in financial systems and geopolitical risks. Despite the various reasons, the level of policy action in response depends largely on the extent of damage and how the hazards spread (Congressional Research Service, 2020).

Most investors try to invest their financial resources in a place that has the highest return and the lowest risk. Therefore, in addition to focusing on profit, companies should also pay attention to risk as a limiting factor in maximizing returns. Unlike return, risk is a subjective and non-quantitative concept. Therefore, most of the efforts of economic and financial experts are focused on recognizing and measuring risk (Chandra & Suardi, 2013).

A special part of unsystematic risk is the volatility of stock returns, known as idiosyncratic volatility. The existence of evidence and research based on the increasing and non-random trend of stock-specific volatility (Campbell et al., 2001; Fink et al., 2010) led to stock-specific volatility being raised as an important mystery in most researches (Domingues, 2016).

Stock volatility can be explained by asset pricing models. Asset pricing models such as Capital Asset Pricing Model (CAPM), Black Model (1972), Linter Model (1965), Sharpe Model (1964) and Fama and French Three Factor Model (FFTFM) (Fama and French, 1993) found a strong linear relationship between excess return on assets and systematic risk, which is linearly positive. These empirical works state that only systematic risk factors are priced by investors; While an unsystematic risk factor, in other words, special stock fluctuations, is not considered by investors to estimate the rate of return required for investment. In other words, only systematic risk has the ability to capture the variance of average returns in different portfolios. But recently, renewed efforts on this argument have found theoretical and empirical evidence that the relationship between stock-specific returns and volatility is positive (Barik and Balakrishnan, 2022).

Moreover, uncertainty about crises such as epidemics also leads to increased volatility and means increased price volatility and dispersion, a common indicator of risk and stress. For example, the corona virus has caused a liquidity and debt solvency crisis, although some volatile conditions have been building for years. The capital market has also experienced a lot of volatility due to COVID-19. Volatile events have occurred regularly throughout the history of financial markets (Congressional Research Service, 2020)

Also, the relationship between stock market volatility and investor sentiment has been reported to be statistically significant. Supporting these findings, Zhou and Yang (2019) stated that building a theoretical model of stochastic investor sentiment affects investor crowding and also affects asset prices. The results of their research showed that optimistic (pessimistic) expectations from investors can push asset prices above (below) the base value. Investigating the long-term relationship between investor sentiment in the stock and bond markets, Fang et al. (2018) showed that the investor sentiment index is positively related to market volatility.

Stock volatility is an issue that is also discussed in the stock market of Iran. According to the research literature, among the factors that can affect it, we can refer to company size, the ratio of market value to book equity, cumulative stock return (momentum), liquidity, cash flow to price and return on assets. (Kumari et al., 2017; Barik and Balakrishnan, 2022).

According to the contents raised in the theoretical foundations, the following hypotheses have been formulated:

- Hypothesis 1: Company size has an effect on stock-specific volatility.
- The second hypothesis: the ratio of market value to book value of equity has an effect on specific stock volatility.
- The third hypothesis: the cumulative return of the company's stock (momentum) has an effect on the specific volatility of the stock.
- Fourth hypothesis: Liquidity has an effect on stock volatility.
- The fifth hypothesis: cash flow to price has an effect on stock specific volatility.
- Sixth hypothesis: asset returns have an effect on stock volatility.

2. Research methodology

The current research, in terms of its practical purpose, and in terms of the method of data collection, is descriptive of the correlation type. In order to test the hypotheses of the research, GARCH model (to measure unconditional and conditional specific volatility) and combined data (to evaluate the impact of factors affecting stock specific volatility) have been used by Eviews9 software. The statistical population of the research consists of Tehran Stock Exchange companies in the period of 2011-2018 and includes companies under the following conditions:

- The company must have been admitted to the Tehran Stock Exchange before 2013.
- The end of the financial year of companies is March 29 every year.
- The companies used have not been removed from the stock exchange list during the period under review.
- Do not belong to financial and investment companies.
- The financial information required by companies should be available.

Based on the above restrictions, 91 stock exchange companies were selected for review.

2.1 Research model and variables

To calculate stock specific volatility, first, this variable was divided into two parts: Unconditional Specific Volatility (UIvol) and Conditional Specific Volatility (CIvol). In order to extract the conditional and unconditional special volatility, the five-factor model of Fama and French (1993) is used, considering the liquidity factor. The five-factor model in its initial state is in the following form:

$$(R_{it}^{d} - r_{ft}^{d}) = \alpha_{it}^{d} + \beta_{it}^{d}(R_{mt}^{d} - r_{ft}^{d}) + s_{it}^{d}SMB_{t}^{d} + h_{it}^{d}HML_{t}^{d} + m_{it}^{d}WML_{t}^{d} \qquad (1)$$

By adding the liquidity factor, the developed form of Fama and French's five-factor model is as follows:

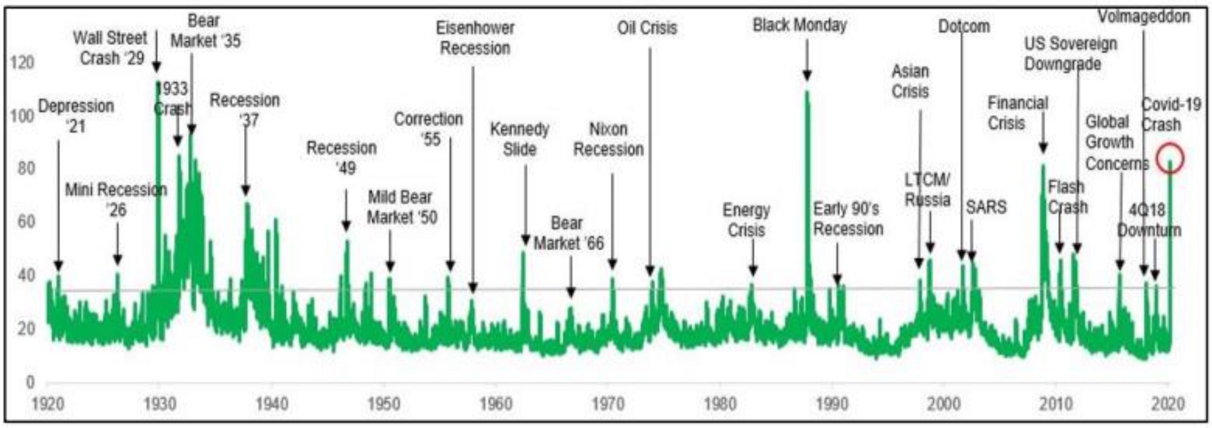
$$(R_{it}^{d} - r_{ft}^{d}) = \alpha_{it}^{d} + \beta_{it}^{d}(R_{mt}^{d} - r_{ft}^{d}) + s_{it}^{d}SMB_{t}^{d} + h_{it}^{d}HML_{t}^{d} + m_{it}^{d}WML_{t}^{d} + l_{it}^{d}LIQ_{t}^{d} + \varepsilon_{it}^{d} \qquad (2)$$

where in; The dependent variable $(R_{it}^{d} - r_{ft}^{d})$ is the market return over the risk-free rate, which is equal to the daily stock return minus the government bond return rate. In the dependent variable, R_{it}^{d} is the daily stock return, which is equal to the stock price on the given day minus the stock price on the previous day divided by the stock price on the previous day, and r^{d}_{ft} is the rate of return on government securities.

The independent variables are R_{mt}^{d} or daily market return, which is equal to the market price of the stock on the given day minus the stock price on the previous day divided by the stock price on the previous day. $(R_{mt}^{d} - r_{ft}^{d})$ which is equal to the daily market return minus the government bond rate of return. SMB, which represents the size factor and is calculated as the difference between the weighted average return of the daily value in small stock securities minus the daily average return of the stock with the daily value of the large stock portfolio.

Also, HML, which represents the value factor, and in the form of companies that are part of 30% of companies with a high book value ratio of equity minus companies that are part of 30% of companies with a low book value of equity ratio are calculated.

On the other hand, WML represents the momentum factor and is calculated as winners minus losers; And LIQ is the stock liquidity, which is calculated as the annual average of the company's monthly turnover ratio. To calculate unconditional specific fluctuations, regression equation (2) was estimated by time series regression (samples between 252-275 days). Then, the standard deviation of the remaining components of the regression equation was considered as an index for unconditional fluctuations.



Source: BNP Paribas, *100 Years of Crashes: COVID-19 Crisis Playbook*, April 17, 2020.

Figure 1. Modeled volatility (VIX index) over a century

Table 1- descriptive statistics of research variables

Variables	Mean	Middle	Maximum	Minimum	Standard deviation	Skewness coefficient	Slenderness ratio
R^d_{it} - r^d_{ft}	0.039	-0.172	5.967	-1.018	0.839	2.840	**15.485**
R^d_{mt} - r^d_{ft}	0.236	0.096	0.884	-0.428	0.424	0.114	**1.763**
SMB	0.028	0.029	0.052	0.00	0.012	-0.301	**2.152**
HML	1.551	1.243	8.288	0.677	1.048	3.64	**18.756**
WML	2978.215	86.106	247962.4	-199130.3	34785.11	2.336	**26.490**
ULvol	2.2888	2.326	11.9490	0.3045	1.0163	2.3564	**10.5968**
CLvol	14.6532	12.2315	36.2633	5.6766	3.6123	0.5236	**4.5301**
SIZE	13.014	13.861	19.249	11.035	1.535	1.014	**4.586**
BM	1.9821	1.382	10.0125	0.0118	0.944	-12.669	**239.053**
MM	-0.0235	-0.0121	3.917	-2.032	0.229	0.074	**2.223**
LQ	5.521	5.337	96.2341	0.080	0.161	0.519	**2.295**
CF/P	0.6521	0.123	28.847	0.00021	1.332	21.137	**454.63**
ROA	0.1235	0.3254	0.6525	-0.2365	0.577	0.238	**3.013**

According to Fu (2009) and Kumari et al. (2017), the GARCH (1,1) model was used to calculate the conditional special volatility. Thus, regression model (2) was estimated by GARCH (1,1) regression. The exponential GARCH model, which was first presented by Nelson (1991) to consider the asymmetric effects of negative and positive asset returns on the fluctuations of returns, removes the need to impose restrictions on the model parameters, which results in By defining the conditional variance in logarithmic form, the variance always remains positive; Therefore, exponential GARCH explains the fact that negative shocks lead to a larger conditional variance than similar positive shocks. Therefore, for special conditional fluctuations, relation (2) has been estimated with the following assumptions:

$$E_{i,d,t} \sim N(0,\sigma_{it}^2) \quad (3)$$

$$\text{Log}(h_{it}) = \omega + \sum_{j=1}^{q} \alpha_{ij}\left[\left|\frac{\varepsilon_{i,t-j}}{\sqrt{h_{i,t-j}}}\right| - E\left(\frac{\varepsilon_{i,t-j}}{\sqrt{h_{i,t-j}}}\right)\right] + \sum_{k=1}^{m} \delta_k + \frac{\varepsilon_{i,t-k}}{\sqrt{h_{i,t-k}}} + \sum_{i=1}^{p} \beta_{ij} h_{i,t-i} \quad (4)$$

Equation (2) in the calculation of conditional volatility shows the average model that the additional return of individual stocks depends on the factor model of asset pricing. Also, the remaining components (ε_{it}) in relation (3) are conditionally assumed to be normal; with iid(0, σ_{it}^2) which $\omega_0>0$ and $_i$ + β $_i$ <1, α_k <0‹δ, if the fluctuations are asymmetric. Equation (4) shows the variance of the model, where $\text{Log}(h_{it})$ is the logarithm of the conditional variance of stock returns, β is a vector of coefficients, ε_{it} represents the white noise condition, and δ_i is the asymmetric coefficients.

Also, the logarithm of the conditional variance makes the leverage effect exponential instead of quadratic, and therefore the estimation of the conditional variance is guaranteed to be non-negative. The leverage effect is also shown by k<0δ; If the effect of news is asymmetric. Exponential GARCH model has the highest significance in determining the effect of volume of fluctuations, the stability of fluctuations in the market and the effect of leverage (Kumari et al., 2017). Finally, conditional variance was gathered from the model and considered as an index for conditional volatility.

After calculating the unconditional volatility (UIvol) and conditional volatility (CIvol) for stocks, the regression model (5) taken from the study of Kumari et al. took

$$y_{it} = \alpha + X'_{it}\,\beta + u_{it} \quad (5)$$

In relation (5), the dependent variable or y_{it} represents the specific volatility of stocks, which is equal to the sum of conditional and unconditional specific volatility. X'_{it} is the vector of independent variables, β is the vector of coefficients of independent variables and u_{it} is the error component of the model. The independent variables in relation (5) are as follows:

SIZE: company size; which is calculated as the natural logarithm of the market value of equity.

BM: ratio of market value to book value of equity; It is calculated as the ratio of the book value of equity to the market value of equity.

MM: stock cumulative return (momentum); which is calculated as the product of the monthly returns of stocks in the last 11 months minus the product of the monthly returns of the market in the last 11 months by equation (6). A month between the formation of the portfolio and the share holding period to avoid the gap between buying and selling offers, price pressure and any delayed reaction; has been deleted.

$$MM = \prod_{m-12}^{m-1}(1 + monthly\ return) - \prod_{m-12}^{m-1}(1 + market\ monthly\ return) \quad (6)$$

In relation (6), m is equal to the first month of year t, which is April.

LIQ: Liquidity; which is calculated as an annual average monthly turnover ratio.

CF/P: cash flow to price, which is calculated by equation (7).

$$CFP = \frac{Earnings\ before\ Extraordinary\ Item_{t-1} + Depreciation_{t-1}}{MV_{t-1}} \quad (7)$$

In relation (7), $Earnings\ before\ Extraordinary\ Item_{t-1}$ profit before unexpected items and accumulated effects at the end of the previous year, $Depreciation_{t-1}$ depreciation at the end of the previous financial year; and MV_{t-1} is the market value of equity at the end of the previous year. ROA: return on assets; which is calculated by dividing the annual profit on the total assets.

3. Results and Discussion

3.1 Descriptive findings

Calculations show that The lowest average value is related to the cumulative stock return variable (MM) with a value of -0.0235, which shows that, on average, the market return is higher than the return of the companies. The average value for unconditional and conditional specific volatility is 2.2888 and 14.6532, respectively, which shows the increase in conditional specific volatility due to the consideration of the asymmetric effects of negative and positive returns of assets on the specific fluctuations of returns compared to It is an unconditional state.

In order to evaluate the normality of the distribution of the variables, we focus on the deviations from normality, that is, the skewness coefficient and the elongation coefficient. The skewness coefficient of the first criterion indicates symmetry. In the variables where the skewness coefficient is positive, it shows the upper thick tail of the distribution. Also, some variables show the presence of negative skewness. Elongation coefficient is the second measure showing symmetry. The coefficient of elongation in the variables obtained above 3 shows that the distribution of the variables has an elongation higher than the normal distribution.

3.2 Inferential findings

After estimating the model, the standard deviation of the remaining components of the regression equation was considered as an index for the unconditional volatility variable. Therefore, due to the fact that the coefficients of the variables in this model do not need to be interpreted, discussion and interpretation about the coefficients is avoided. In the estimated model, the remaining components are considered as an index for special unconditional fluctuations. Figure (2) shows the standard deviation of the residual performance for the fitted model in table (2).

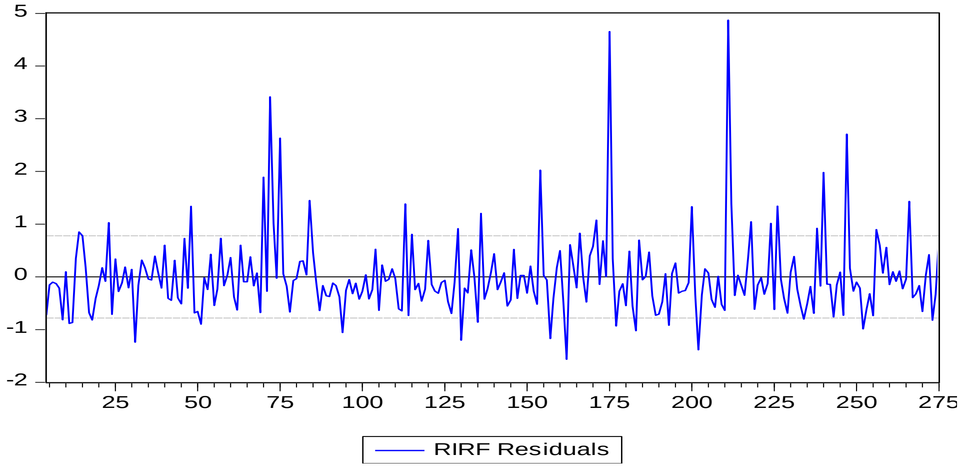


Figure (2) Residual components as an indicator of unconditional idiosyncratic volatility

Table 2- Model estimation results for calculating unconditional specific fluctuations

Variable	Coefficient	Standard deviation	t-statistics	probability level
Width from the origin	0.188	0.190	1.989	0.32
$R^{d}_{mt} - r^{d}_{ft}$	0.976	0.131	7.443	0.00
SMB	-7.202	4.580	-1.672	0.1
HML	-0.045	0.095	-0.476	0.63
WML	0.00000244	0.00000156	1.664	0.1
LIQ	-1.454	0.513	-2.834	0.00

Coefficient of determination=R^2/0.26

WATSON camera= DW 1.99

F statistic= 63.11

Statistical probability level =F 0.00

3.3 Calculation of conditional special fluctuations

In this section, conditional specific volatility is obtained by equation (2) and GARCH (1,1) regression. At first, in order to prove the existence of heterogeneity variance in the model, Arch LM test was used. If there is heterogeneity of variance, the GARCH model can be reliably estimated. The results of this test are presented in table (3). As can be seen, the probability level of the test statistic is less than 0.05 and therefore there is heterogeneity of variance in the model.

GARCH regression provides two results related to conditional mean and conditional variance. The results of estimating the conditional mean and conditional variance of GARCH (1,1) regression are shown in Tables (4) and (5), respectively.

Finally, the conditional specific volatility is obtained by extracting the conditional variance of the GARCH (1,1) regression. Figure (3) shows the conditional variance of the model. As can be seen, the fluctuations of the conditional variance are very high in the studied period, especially at the beginning of 2017 when the conditional variance increased suddenly and very much.

Table (3) ARCH-LM test statistic results

Statistic test	Test statistics	Probability level	Result
ARCH-LM	14.541	0.00	Variance heterogeneity

Table 4- The results of estimating the conditional mean of GARCH(1,1) regression

Variables	Coefficient	Standard deviation	The z statistic	Probability level
Width from the origin	0.640	0.130	4.921	0.00
$R^d_{mt} - r^d_{ft}$	-0.456	0.206	-2.251	0.02
SMB	-14.333	5.250	-2.729	0.00
HML	-0.142	0.132	-0.322	0.74
WML	-0.000000139	0.00000150	-0.927	0.35
LIQ	2.494	0.555	4.498	0.00
The coefficient of determination=R^2 0.25				
WATSON camera= DW 2.09				

Table 5- The results of conditional variance estimation of GARCH(1,1) regression

Variables	Coefficient	Standard deviation	Z statistic	Probability level
Width from the origin	0.045	0.07	0.616	**0.53**
ε^2_{t-1}	0.835	0.452	1.846	**0.06**
GARCH (-1)	0.424	0.225	1.883	**0.05**

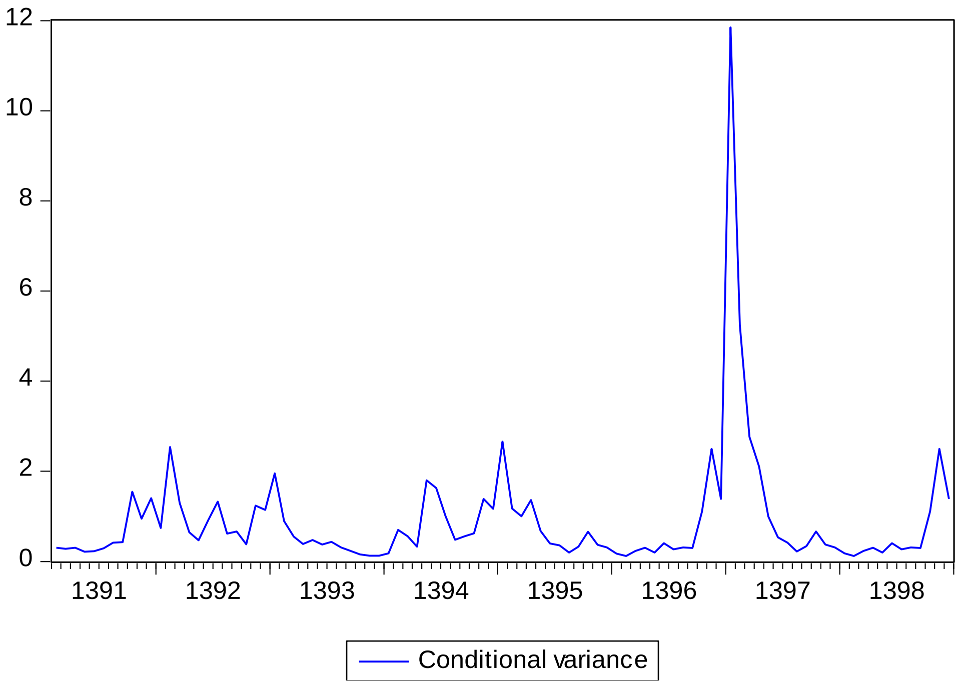


Figure (3) conditional variance of GARCH(1,1) regression

3.4 Investigating the factors affecting the volatility of stocks

After extracting the unconditional and conditional specific volatility, the factors affecting the specific volatility of stocks have been investigated by regression of combined data. In order to avoid false regression, it is necessary to ensure the null status of the variables. In the present study, the significance of the variables of the model has been investigated through the Im, Sons and Shin test. The test results (Table 6) show that all the variables were at the level of significance.

Table (7) shows the results of F-tests of Breusch–Pagan test was used to determine whether the data were grouped or tabular. The value of F statistic is 1.1 and its probability level is 0.37. Therefore, at a significance level of 5%, the null hypothesis based on the integration of the data is accepted. Since the data are pooled, there is no need for the Hausman test. Jarque-Bera test was used to check the normality of the error components.

The statistical value and the level of probability in the Jarque-Bera test were obtained as 0.96 and 0.62, respectively, which indicates the normality of the error components. Also, homogeneity of variance was tested by Breusch–Pagan test. The test statistic and the probability level in Breusch–Pagan test are 89.8 and 0.00, respectively, which indicates the heterogeneity variance in the model. To solve the problem, the generalized least squares (GLS) method was used to estimate the model.

Table (8) shows the results of the combined data regression model in the form of pooled data. The t-statistics of the variables of market value to book value (BM) and liquidity (LIQ) are not significant at the probability level of 5 or 10% and therefore these variables were excluded from the analysis. Significant coefficients for company size variables (SIZE), Cumulative return (MM), cash flow to price (CF/P) and return on assets (ROA) are 0.059, 0.293, 1.143, respectively. - and 0.103 has been obtained, which shows the positive effect of all these variables except cash flow to price on stock fluctuations.

Table 6- Stability test results

Variables	t-statistics	probability level	Stability
Y	-2.484	0.00	**I(0)**
SIZE	-2.877	0.00	**I(0)**
BM	2.174	0.00	**I(0)**
MM	-2.187	0.00	**I(0)**
LQ	-2.444	0.00	**I(0)**
CF/P	-6.391	0.00	**I(0)**
ROA	-3.644	0.00	**I(0)**

Table 7- The results of the F Limer test, Jarek - Bra and Breusch-Pagan

Tests	Test statistics	probability level	Result
F Limer test	1.125	0.37	**Consolidated data**
Jarek - Bra	0.96	0.63	**normal**
Breusch-Pagan	89.8	0.00	**Variance heterogeneity**

Table 8- Estimation of the factors affecting the specific volatility of stocks

Variables	Coefficient	standard deviation	t statistic	probability level
Width from the origin	-1.148	0.273	-4.200	0.00
SIZE	0.059	0.018	3.319	0.00
BM	-0.029	0.019	-1.556	0.12
MM	0.293	0.117	2.506	0.01
LIQ	-0.0099	0.224	-0.044	0.96
CF/P	-1.143	0.294	-3.88	0.00
ROA	0.103	0.044	2.310	0.02

Coefficient of determination= R^2 13.0

WATSON camera= DW **1.97**

F statistic= 7.24

Statistical probability level =**F 0.00**

4. Conclusion

One of the most important financial markets in any country is its capital market, which also represents the economy of that country. This market may face fluctuations in stock prices, which is considered a kind of investment risk. Developing countries, including Iran, have a high degree of instability in stock prices, and these fluctuations, in turn, create an uncertain environment for investors. The fluctuations of the stock market affect not only the national economy but also the regional and global economy. According to this issue, the present research was investigated with the aim of investigating the factors affecting the specific volatility of stocks.

This research was done in three stages. In the first step, unconditional special fluctuations were collected by time series regression. In the second step, conditional specific volatility was gathered by GARCH (1,1) regression, and in the third step, the impact of factors affecting stock specific volatility was evaluated by combined data regression.

The regression results of the combined data showed that the variables of company size (SIZE), Cumulative return (MM), price-to-cash flow (P/CF) and return on assets (ROA) were 293.059, respectively. 0.0, -1.143, and 0.103 have an effect on the specific volatility of stocks. Also, the ratio of market value to book value (BM) and liquidity (LIQ) do not affect the specific volatility of stocks.

Therefore, the larger size of the company causes an increase in stock-specific fluctuations, and small and new companies have a smaller role in stock-specific fluctuations. This result does not agree with the research result of Kumari et al. (2017); The reason for this could be that in Iran, larger companies have allocated a major part of the shares and capital related to the entire stock market, and in a way, by taking over the stock market, they have a greater role in the fluctuations. They have special shares. However, smaller companies are usually not able to deal with these problems due to extreme fluctuations in exchange rates and inflation, and therefore cannot play an important role in the stock market.

Cumulative return has a positive effect on specific stock volatility, which is consistent with the results of Kumari et al.'s (2017), Fu (2009) and Jegadeesh and Titman (1993) research results. This result shows that the higher the cumulative return of stocks, the more volatility companies face because the presence of returns is associated with more volatility.

Cash flow to price has a negative effect on stock volatility, which is consistent with the results of Kumari et al.'s (2017) research. Theoretically, the value of the ratio of cash flow to price determines the future fluctuations of the company in the market. A lower (higher) cash flow present value is more dependent on higher (lower) future volatility. Therefore, higher cash flow causes lower stock specific volatility. The return on assets has a positive role on stock volatility, which is consistent with the results of Kumari et al. (2017), Fu (2009) and Jagadish and Titman (1993). This result is also similar to the result obtained in the cumulative return of stocks; Because the higher the return of the company, the higher the specific volatility, which also applies to the return on assets.

Finally, the results showed that market to book value of equity and liquidity have no effect on specific volatility of stocks. The ratio of market value to book value of equity is very controversial on theoretical grounds. Kumari et al.'s research (2017) showed that liquidity and book value of equity have a positive effect on stock volatility, which is not consistent with the results of the present study. The reason for this could be the lack of liquidity and market value of the book of equity in the Tehran Stock Exchange, especially in recent years due to the extreme fluctuations in the exchange rate and inflation rate.

Based on the obtained results, hypotheses 1, 3, 5 and 6 are accepted and hypotheses 2 and 4 are rejected. Therefore, in a general summary, it can be said that among the factors that affect the specific volatility of stocks, the factors that are related to the efficiency and size of the company increase these fluctuations; But the cash in the company reduces the volatility of the stock, which shows that if the company's assets are in the form of cash, they reduce the volatility, but if it is in the form of increased profits and returns in the company, the volatility increases.

The findings show that the corporate characteristics that predict returns are the determining factors of stock volatility, it supports the portfolio theory under diversification, it shows the usefulness of corporate characteristics in investment analysis. It can also be a guide for financial market activists before deciding to invest and forming an optimal stock portfolio or optimal portfolio. Therefore, it is better for companies to use the increase in cash flow to the price in order to reduce the volatility of stocks.

Also, due to the fact that the coefficients of company size, cumulative return of stocks or momentum and return on assets are positive, these factors cannot be used to reduce the volatility of stocks in companies. Therefore, it is not recommended to use factors that increase the volatility of stocks in the company. Finally, since the ratio of market value to book value of equity and liquidity do not affect the specific fluctuations of stocks, companies can increase or decrease these two variables in the company without worrying about creating fluctuations.

According to the obtained results, it is recommended to big companies to take measures to reduce the special fluctuations of stocks in the section of conditional special fluctuations. Because the non-conditional special volatility section is not available to the company managers and they can only take the necessary measures in the conditional special volatility section. If shareholders and managers can reduce special conditional fluctuations in their company, this will make it easier for them to face unconditional fluctuations or systematic risk. Also, according to the positive role of cumulative return and return on assets on specific stock fluctuations, it is clear that companies' assets are more of a risky type; Therefore, it is better for company managers to keep a percentage of their assets in the form of alternative assets such as gold, currency, etc. in order to reduce the risk of asset value reduction. In addition to reducing the risk of assets, these measures also reduce conditional special fluctuations. Therefore, this proposal is more recommended for large companies due to the effect of company size on fluctuations.

It is also suggested that the companies be divided in terms of different characteristics such as company size, and the factors affecting the specific fluctuations of stocks in these companies should be investigated and compared.

In particular, it seems that factors such as the ratio of market value to book value of equity (BM) and liquidity (LIQ) which have not been confirmed in this research, need more investigations.

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