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The Dynamic and Systemic Effect of Asymmetric Information on Stock Returns by Dumitrescu-Hurlin and Generalized Method of Moments (Case of Tehran Stock Exchange)

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ABSTRACT

The ultimate goal of all investments in stock markets is to earn a satisfactory return on investment, but this is difficult to achieve without enough information to predict stock returns. Information asymmetry refers to a situation where some investors have access to private information that is not reflected in the prices and is yet to be revealed to others. Information asymmetry as a market failure can lead to adverse effects such as poor investor decisions, increased corporate investment risk, and finally reduced stock returns. The issue is important in capital market of developing countries particularly due to the incomplete voluntary disclosure of information as well as its low quality and defective regulatory system. Therefore, in this study, the effect of information asymmetry on stock returns has been investigated in a select group of companies listed in Tehran Stock Exchange. The analysis of this relationship was conducted dynamically for the short-term and long-term using Westerlund and Dumitrescu-Hurlin tests and Generalized Method of Moments to achieve articulated results. Using the tests is suitable with cross-sectional dependence of variables and error terms. Also, using the method is appropriate for measuring lagged effect of dependent variable and removing the bias caused by the endogeneity of explanatory variables. The results demonstrate a significant relationship between information asymmetry and stock return dynamically in short- and long run. The results show that there is a negative systemic effect of information asymmetry on stock return. Also, debt to asset, profit to sales, firm size and lagged stock return effects are significant.

Keywords: Stock Return, Information Asymmetry, Tehran Stock Exchange, Panel Data

1. Introduction

Securities markets can attract new capital from a broad spectrum of people. Therefore, ensuring potential investors and laying the groundwork for greater participation, and deepening the capital market to achieve economic development. (Haji and Sharifi, 2020)

People invest in the stock market to gain maximum returns and investment decisions are generally based on risk and return estimations. These factors are greatly influenced by micro and macroeconomic variables (Fatehi, 2016).

Microeconomic variables such as accounting profit are inherently firm-related, but macroeconomic variables such as economic growth, money stock, inflation rate have a general effect on all securities. In general, investors make decisions based on the risk and return of stocks and their objective is to maximize the profit of their investment portfolios (Bozorg Asl & Razavi, 2009).

Stock returns consist of all proceeds from owned shares plus capital gains and can be affected by micro and macro variables. Therefore, investors in stock markets attempt to direct their savings toward investments that yield the highest returns. To do so, investors need some information to predict the return on investments (Bansal et al., 2021).

However, every market has investors such as managers, analysts, and institutions that have access to information that is not reflected in prices. In contrast, for the grassroots, the source of information is the reports published by corporations. Thus, some investors have access to more and better information, a phenomenon that is called information asymmetry (Rahimi & Shahabadi, 2015).

Information asymmetry decreases market efficiency, increase transaction cost, market weakness, low liquidity, and generally decrease profits from transaction. To date, most markets have some degree of information asymmetry. In these markets, investors do not have access to the same information and prices are not a perfect measure of the quality of products. Under such circumstances, some firms may use insider information that could give an unfair advantage to those who have them. The asymmetry of information resulting in the imbalance of power in the transaction causing a market failure.

In these situations, information asymmetry results in disruption of market forces and consequently market failure and loss of desirable characteristics of the efficient market, such as optimal allocation and economic efficiency (Makkian & Raeesi, 2014).

Complete information symmetry in a perfectly efficient market requires that no individual or group can profit from an information advantage over the others. This highlights the importance of research on information asymmetry that may affect stock returns. In the present study, the authors investigated the issue by panel data on a selected group of firms listed in the Tehran Stock Exchange over the period 2002-2019. The question of the study is that does information asymmetry has a significant effect on stock returns? Also, how is this behavior in the short and long term as well as dynamically along with other factors?

The rest of the paper is organized as follows. In section two we provide a theoretical background and then section three is devoted to literature review. In the fourth section, we present the methodology. Model estimation is provided in the following section. The final section concludes the paper.

2. Theoretical background

Stock return typically consists of two components. The first component is the earning, which is a periodic cash flow paid in the form of dividends. The distinctive feature of this component is that the issuer makes cash payments to the asset holder. Also, these cash flows are related to the price of the securities. The second component of stock return is capital gain (loss), which is specific to ordinary shares but also applies to long-term bonds and other fixed-income securities. Capital gain (loss) refers to a change in the assessed value as the result of an increase (decrease) in the asset price. Capital gain (loss) is the difference between the purchase price of stocks and their price when the holder intends to sell them. The sum of these two components constitutes the total return (Ian & Christian, 2019).

Investors tend to invest in assets with high returns and relatively low risk. If an investment's rate of return is higher than expected, it will lead to the increase of the value of the asset and so will the wealth of the investor. Therefore, shareholders and investors need to identify major parameters that explain stock returns, as understanding the value of these parameters and finding the right model can improve their investment decisions (Pourheydari & Bayat, 2010).

The rate of return on security is a major factor in how investments are implemented. In all security-pricing models, we need to determine the present value of future cash flows that are expected from the security. When people invest in a stock (security), they expect an increase in the price of the stock, and subsequently, in the return on the stock. (Amir Hosseini & Ghobadi, 2010).

Stock returns are affected by a wide variety of economic and non-economic factors. But these factors that affect stock markets, are difficult to predict and so this causes a degree of uncertainty in investments. One of the variables affecting the stock market is the available information on the factors. However, the real impact of such information is often complicated due to the asymmetry of information. Lack of access to information and so asymmetry of information is one of the reasons for this complexity and uncertainty, which is an important issue in the capital market. (Emadzadeh et al., 2001).

Thus, return on investment is the one that motivates the investors. But when there is a high degree of information asymmetry, it will be difficult for managers to understand the true position of market investors. Therefore, in such situations, the managers will make a cautious estimate of market information. As a result, information asymmetry may lead to error and risk in investment. Moreover, it can decrease market efficiency, increase transaction costs, low liquidity, and decrease profit. In an efficient market, forces ensure optimal allocation of resources and equilibrium in the market, and ultimately the balance of prices. In such a market, price is a measure of the quality of the product, and in the long run, this feature brings the economy to an optimal point. These indicate the importance of the information asymmetry problem and its undeniable impact on economic decision making. This highlights the importance of information asymmetry in an inefficient market (Dehghan Khavari & Mirjalili, 2020)

Many investment decisions are made based on information asymmetry. It can be defined as a state where one side of a trade has more information about the product. One of the important effects of information asymmetry is the distortion of the proper functioning of financial markets. This is because the way information arrives at the market has an impact on price formation. Information asymmetry may reduce market efficiency or even impede market formation, depriving all parties of the benefits of exchange (Mishkin, 2015).

Since the level of information asymmetry in a market cannot be observed directly, researchers used proxy variables to measure this phenomenon. The financial literature provides several criteria for measuring the degree of information asymmetry in a market. Given the importance of information asymmetry and the necessity of incorporating it in the model, it can be used bid-ask spread criterion which has high-frequency data. Also, the information asymmetry hypothesis states that the greater the uncertainty about a firm's true value, the higher will be the average underpricing of its Initial Public Offering (IPO). The most well-known models of information asymmetry have been proposed by Baron (1982) and Rock (1986). In the Baron model, there is information asymmetry between share issuers and underwriters, but in the Rock model, information asymmetry is between informed and uninformed investors (Damvari & Dehghani Firouzabadi, 2014).

Baron's model is based on the argument that underwriters have better information than issuers about market conditions and demand for the issuers' shares. In contrast, Rock introduced another type of information asymmetry between informed and uninformed investors. In the Rock model, there are two groups of potential investors in the market: informed investors, who spend time collecting information and buy, based on the acquired information, only the new shares for which they expect price increase after trading; and uninformed investors, who buy the remaining new shares. Rock believes that in almost every initial stock offering, it is uninformed investors who buy most of the new stocks, and they are the ones that suffer if new stocks are overpriced.

3. Literature review

Haji and Sharifi (2020) explored the relationship between information asymmetry and dividend policy in companies listed in the Tehran Stock Exchange. The statistical population includes 132 companies over the period 2006-2001. The results indicated that there is a significant relationship between information asymmetry and dividend policy and their correlation is positive. It implies that for each unit of increase in the information asymmetry, companies with an increase of 0.136 units in the proportion of dividend profit. The results also indicate that the variables of investment

opportunities and concentration of ownership have a significant effect on dividend policy, but the effect of liquidity, stock turnover, company size, trading volume and transaction value on dividend policy is not significant.

Pirayesh and Mozaffari (2018) examined information asymmetry and its effects on the capital market. According to their findings, the basis for decision-making on investment in the capital market is the information disseminated by the companies. Utilizing this information and making the right decision is possible when information is provided on time, relevant and complete, accurate and understandable. Moreover, the type and manner of access to information are also very important. If transfer of information is uneven and asymmetric and the so-called information asymmetry occurs, it can cause various adverse consequences such as reduced market efficiency, increased transaction costs, minimal participation of investors, market weakness, low liquidity and generally reduced profits in the capital market.

Safdar and Yan (2016) investigated the information risk related to capital cost and whether information risk needs to be considered a priced risk factor. They used accruals quality as a measure of information risk. Also, multiple regression analysis and Fama-Macbeth regressions were used to determine whether accruals quality has a relationship with capital cost and future realized stock returns. The results show a relationship between poor accruals quality and higher equity cost, but this relationship was not significant for state-owned enterprises. They find no relationship between accruals quality and cost of debt. However, they reported a positive relationship between poor accruals quality and future realized stock returns.

Noor Afkan (2011) examined the relationship between information asymmetry and level of cash holding in companies listed in the Tehran Stock Exchange. The purpose was to understand whether companies with higher information asymmetry hold more cash and whether the information asymmetry is different before and after the announcement of profits. In the research, 130 companies were surveyed during the years 2003-2009. To test the hypotheses, the statistical methods of Kolmogorov–Smirnov, Mann-Whitney and Wilcoxon were used. The results show that companies with higher information asymmetry retain more cash than companies with lower information asymmetry. As well as there is no difference before and after the announcement of profit.

Yang et al. (2009) examined the mutual relationship of capital structure and stock returns through variables such as expected growth, profitability, firm size, and asset structure in Taiwan stock markets for the period 2003-2005. They concluded that the debt ratio has a positive effect on the stock returns.

Kanagaretnam et al. (2007) explored the relationship of corporate governance quality with changes in information asymmetry in the capital market. To this end, the bid-ask spread and the market depth were used as measures of information asymmetry. Then, the impact of three corporate governance mechanisms, including board independence, board activity, and board structure was investigated. The results show that firms with more independent and active boards have a smaller increase in the bid-ask spread around the time of earnings announcements. They also find a significant positive relationship between market depth differences and board structure and board activity, which indicates that better board structure and higher board activity are associated with reduced information asymmetry.

4. Methodology

The model of this research is a panel regression. In panel data econometrics, it is generally assumed that the data used have cross-sectional independence. While the interdependence between sections can exist due to factors such as external consequences and regional and economic relations.

Therefore, the first step in panel data econometrics is to identify the cross-sectional independence of the data. For this purpose, several tests such as Breusch-Pagan (1980) and Pesaran (2004) have been presented. In this article, the Pesaran CD test has been used. This test applies to balanced and unbalanced panel data and has desirable properties in small samples. Also, unlike the Bruch-Pagan method, it provides reliable results for large cross-sectional and short-time dimensions. Also, it is resistant to the occurrence of one or more structural failures in the slope coefficients. If the statistic of this test at a certain level of significance is greater than the critical value, then the null hypothesis is rejected and the cross-sectional dependence is concluded.

Once cross-sectional dependence on panel data is confirmed, the use of common panel unit root methods such as Levin et al. (2002) and Im et al. (2003) tests increase the likelihood of spurious unit root results. To solve this problem, several panel unit root tests have been proposed considering the cross-sectional dependence. One of the most famous is the cross-sectional augmented unit root test of Im et al that presented by Pesaran (2007). Pesaran used the augmented Dickey-Fuller cross-sectional regression, considering the interdependence between sections. He has used the ordinary least squares method for the i section. (Dehghan Shabani & Shahnazi, 2016)

Also, in the case of cross-sectional dependence is confirmed, the use of common panel cointegration methods such as Pedroni and Cao increases the likelihood of spurious cointegration results. To solve this problem, several panel tests including the Westerlund (2007) method have been proposed. The null hypothesis is no cointegration depending on whether the error correction component in the conditional error correction model is zero or not. In this test, Westerlund used a method called bootstrap to eliminate the effects of cross-sectional dependence on variables (Golkhandan, 2015).

However, Pateroni and Westerlund's cointegration tests can be used to examine the existence of a long-run relationship between model variables. Therefore, these methods are not able to estimate the long-term and short-term coefficients of the variables. Therefore, after proving the cointegration, by estimating long-term models and obtaining error terms, the Granger causality relationship between the variables has been investigated using the vector error correction model. In this regard, the following equation is estimated:

$$\Delta RP_{it} = \alpha_{1j} + \sum_{q=1}^{p} \beta_{11iq} \Delta RP_{it-q} + \sum_{q=1}^{p} \beta_{12iq} \Delta SP_{it-q} + \delta ECT_{it-1} + \omega_{it} \qquad (1)$$

First, the null hypothesis of Wald test based on $\beta_{12iq} = 0$ is checked and then if the probability is less than 0.05, the null hypothesis is rejected and the short-term Granger causality from economic growth to tourism growth is confirmed. Also, the null hypothesis of Wald test based on $\delta = 0$ is checked and then if the probability is less than 0.05, the null hypothesis is rejected and then long-term Granger causality exists.

After all, we utilized the GMM method to be able to study the effect of information asymmetry on stock returns systematically and dynamically along with other influential variables. The method is based on dynamic panel models and when unobservable country-specific effects or lagged dependent variables among explanatory variables exist. For GMM estimation, we need to utilize the instrumental variables in the model. Dynamic relationships are characterized by the presence of lagged dependent variables among explanatory variables, as they represent the effect of time factors. The dynamic panel-data GMM is an excellent econometric method that can eliminate the endogeneity of dependent and explanatory variables using instrumental variables. To solve the endogeneity problem, most economic studies use the two-stage least squares approach, which requires finding a suitable instrumental variable. GMM also reduce the co-linearity of the model, using lagged dependent variables and solving the problem of endogeneity of variables.

5. Results

The statistical population is all companies listed in the Tehran Stock Exchange from 2002 to 2019. The sample is a selected group of companies from this population by the following selection criteria: 1) being listed at least six months before 20/03/2002; 2) no more than three months of trading suspension during the research period. These criteria are chosen to normalize the stock price trends of selected companies. Data extracted from companies' financial statements, website of the Tehran Stock Exchange and Rahavard-Novin databank. The estimation is conducted using Eviews and STATA. The variables are selected so that it includes one measure from each major group of measures. This classification is derived from the articles of Asgarnezhad Nouri (2018) and Barzegari Khanagha and Jamali (2016). The definitions of the model variables are as follows:

Stock return (RP); the ratio of the total return (loss) of an investment in a given period to the capital that has been used at the beginning of the period to gain this return. This return consists of the change in the original capital (stock price) and received cash dividends.

Firm size (SIZE) from Firm attributes group; Size of a company measured by the natural logarithm of annual sales.

Earnings per share (EPS) from market ratios group; extracted from the balance sheet.

Systemic risk index (RI) from risk ratios group; represents the portion of the total risk of stock caused by the factors affecting the entire stock market. Important systemic risk factors include political and economic change, business cycles, inflation, and unemployment.

Information asymmetry (SP) from information ratios category; measured by the bid-ask spread which is extracted from companies' balance sheets. The larger the bid-ask spread, the greater the information asymmetry.

Debt to asset ratio (TDR) from leverage ratios group; this is obtained from financial statement.

Net profit-to-sales ratio (NIM) from profitability ratio group; which is the ratio of net profit to net sales and available in the companies balance sheet.

Current ratio (CR) from liquidity ratios; measured by dividing current assets by current liabilities. Sales growth (SG) from activity ratios group; measured by sales in t + k divided by sales in t + 1, where t is the base year and k is the target year.

In a dynamic panel data method, it is necessary to consider cross-section dependence and slope heterogeneity tests. These two tests are important for the selection of a single root test. (Baltagi et al., 2008).

The results of the cross-sectional dependence test of Breusch-Pagan and Pesaran for the data are illustrated in Table (1). The null hypothesis in these tests is the absence of cross-sectional dependence on the variables. The null hypothesis is rejected and therefore there is cross-sectional dependence that shows the influence and dependence of the sections on each other. Only the current ratio variable according to the Pesaran test does not have cross-sectional dependence, but other tests such as Breusch-Pagan confirm cross-sectional dependence.

Since traditional econometric methods operate under the assumption that variables are stationary, the stationarity of model variables must be tested. This prevents spurious regression.

The next step is to check the stationary of the data. Because of the cross-sectional dependence, the Pesaran (2003) test is used to examine the stationary of the variables. The assumption of this test is the existence of cross-sectional dependence. Null hypothesis ~~zero~~ in this test is the existence of a unit root. Therefore, the probability values less than 0.05 mean that there is no unit root and therefore it is stationary. This test is conducted at the 5% significance level. In this test, the null hypothesis (H0) is the existence of a unit root for each variable, which is rejected with P-Value of less than 5%.

Table (1): Cross-sectional dependence Test for the Variables

	Breusch-Pagan LM		Pesaran CD	
	Statistic	**Prob.**	**Statistic**	**Prob.**
RP	159.92	0.00	7.42	0.00
SIZE	328.15	0.00	113.25	0.00
SP	175.02	0.00	44.98	0.00
TDR	201.98	0.00	3.90	0.01
NIM	112.02	0.00	8.32	0.00
RI	198.29	0.00	29.14	0.00
EPS	170.37	0.00	13.19	0.00
CR	160.59	0.00	-1.43	0.15
SG	132.04	0.00	12.61	0.01

Source: Research Findings

Table (2): Panel unit root test

Variable	Statistic	Probability	Variable	Statistic	Probility
RP	-4.581	0.00	RI	-10.65	0.04
SIZE	4.23	0.00	EPS	-9.32	0.00
SP	-10.08	0.00	CR	3.66	0.00
TDR	2.36	0.06	SG	7.14	0.00
NIM	1.23	0.06			

Source: Research Findings

As some of the variables are not stationary, therefore there is a possibility of spurious regression, so the cointegration relationship between them needs to be examined.

Before conducting the cointegration test, it is necessary to check cross-sectional dependence between residuals in the model. To this end, we conducted the Pesaran and the Breusch-Pagan tests. But as the number of time series is less than the sections, the Pesaran test is more appropriate. Although, the rest of the tests have been performed. Pesaran test indicates the existence of cross-sectional dependence.

Table (3): Cross-sectional dependence Test For Error Terms

Test	Statistic	P-Value
Breusch-Pagan LM	401.87	0.0000
Pesaran scaled LM	182.53	0.0000
Bias-corrected scaled LM	163.15	0.0000
Pesaran CD	161.70	0.0000

Source: Research Findings

Because of the cross-sectional dependence, the Westerlund cointegration test can be used. The test Kao has also been used for further investigation.

Table (4): Westerlund Cointegaration Test Results

H0: No cointegration		
H1: Some panels are cointegrated		
	Statistic	p-value
Variance ratio	10.3758	0.0000
ADF	-5.226649	0.0000

Source: Research Findings

Table(4) indicates cointegration and therefore, we can obtain the causal relationship without the occurrence of spurious regression.

At this step, the short-term and long-term effects of information asymmetry on stock returns are examined. With the cross-sectional dependence, Dumitrescu & Hurlin (2012) causality test can be used between information asymmetry and stock returns.

Table (5): Dumitrescu and Hurlin (2012) panel causality test

	Z-bar	p-value
H0: SP does not Granger-cause RP H1: SP does Granger-cause RP for at least one panelvar (i)	25.50	0.00

Source: Research Findings

Table(5) shows the causal relationship of information asymmetry on stock return is rejected. It shows a strong effect of information asymmetry on stock return at the level of 1% significance. On the short-term and long-term relationship between them in the form of causality relationship, as indicated in table (6)

At a significance level of 5%, information asymmetry has a significant effect on return stock in short- and long term.

In last step, we examined the effect of information asymmetry on return in the form of a dynamic model as well as other variables affecting stock return. The purpose is to determine the direction and amount of the effect of information asymmetry. Initial results of model estimation show that risk index, earnings per share, current ratio, and sales growth have no significant effect on stock returns. In contrast, firm size, information asymmetry, debt-to-asset ratio, and net profit-to-sales ratio have a significant effect on stock returns. Stock return also has a lagged significant effect on itself.

Table (6): short and long-run relations effect of information asymmetry on stock return

Dependent Variable	Variable under the null hypothesis	Short-term causality (Wald statistics)	Long-term causality (Wald statistics)	Results
RPΔ	SPΔ	62.57 (0.00)	101.41 (0.00)	short- and long-term

Source: Research Findings

Table 7: model estimation and significance of variables

Variable	t-Statistic	Prob.
RP(-1)	-5.192199	0.0000
SIZE	2.807170	0.0052
SP	-2.222854	0.0268
TDR	-2.105785	0.0358
NIM	3.723398	0.0002
RI	1.918337	0.0558
EPS	0.680457	0.4966
CR	-1.950723	0.0517
SG	1.476371	0.1406

Source: Research Findings

Table (8) presents the coefficients of the variables that exhibit a significant effect. This table shows the extent and direction by which lag stock return, firm size, information asymmetry, debt-to-asset ratio, and net profit-to-sales ratio affect the stock returns.

Table 8: coefficients of significant variables

Variable	Coeff.
RP(-1)	-0.245312
SIZE	205.4209
SP	-161.6224
TDR	-635.2378
NIM	225.3151

Source: Research Findings

Next, the Sargan test is conducted to check the validity of instruments and determine whether there is a correlation of any type between instruments and error

terms. The result of the Sargan test is presented in table (9).

Table (9): Results of the Sargan test

J-statistic	45.71
Prob(J-statistic)	0.64

Source: Research Findings

As Table (9) shows, the null hypothesis of the Sargan test (instrumental variables are not correlated with residuals) cannot be rejected, which indicates that the instrumental variables used in this model are suitable. Also, the null hypothesis of the serial correlation test (the absence of second-order serial correlation in the first difference of error terms) cannot be rejected.
As can be seen, the effect of debt, profitability, size and information criteria is significant.

6. Discussion and Conclusion

According to the results from the causality test, there is a strong relationship between asymmetry and stock returns. This relationship is strong both in the short run and in the long run. Based on the results, it can be said that information asymmetry is a determinant of stock returns.

Also, stock return has a significant lagged effect on itself, which indicates that it can be used as an explanatory variable to predict future stock returns. Taking this relationship into account also leads to better model estimation. The results also suggest that liquidity, sales, market, and risk criteria have no significant effect on the stock returns in Tehran Stock Exchange. However, debt, profitability, size, and information criteria have significantly affected their stock returns.

Regarding the impact of firm size on stock return, we find a positive and significant relationship with a coefficient of 205.42. Indeed, the size of a company affects its profitability.

It can be argued that the large size of a company allows it to reduce its business risk through diversification. Production diversity, increasing the company's share of the product market, economies of scale, and low cost of products are some of the advantages that increase the company's profitability. In addition, the large number of shares of large companies, allows many buyers and sellers to buy and sell shares of these companies. As a result, the liquidity risk for the corporate shareholder is reduced which can have a positive effect on stock returns.

There is a positive relationship with a coefficient of 225.31 between net profit-to-sales ratio and stock return and is statistically significant. Also, the relationship between debt-to-asset ratio and stock return is negative, as debt can have a negative impact on the return of listed companies.

As mentioned earlier, information asymmetry is a determinant for the stock return, and the extent of this effect and how it is perceived and analyzed can play a key role in investment decisions. The results show that information asymmetry has a significant effect on stock return. The significant negative relationship between information asymmetry and stock return confirms the research hypothesis. The result means that stock returns decrease with the increase in information asymmetry (decrease in information transparency) in the Tehran Stock Exchange.

The negative effect of information asymmetry on stock returns can be found in market efficiency. Because stock prices are based on all available information in an efficient market. Asymmetric information is itself reflected in the incorrect formation of prices, and this leads to skewed or unrealistic pricing in the market. This can lead to negative effects on stock returns in the long run. Therefore, reducing information asymmetry increases the level of market efficiency and thus improves the market mechanism and price discovery. Also, it leads to optimal pricing and increases the reasonable forecasting of price trends.

On the other hand, this issue leads to increased uncertainty in the stock price trend and thus reduces the participation and trust of market investors. These issues can have a negative effect on stock returns. As investors are unable to identify corporate loss-making projects in an environment with higher information asymmetry. As a result, investment trust in such stocks decreases.

The distrust also affects the reaction of investors. So that, uninformed investors are concerned about exchanging stocks with investors that have private information or more information. In general, an uninformed investor is concerned that an informed investor may sell (buy) securities because the current price is too high (too low) considering the available information. All of the problems happen in

information asymmetry and all these cases have negative effects on the logical flow of the company.

After all, Stock return is one of the most important criteria that influence investment decisions in stock markets. Therefore, many researchers have tried to identify the factors affecting stock returns to obtain more accurate estimates of stock returns. So far, this study has attempted to use the different tests including cointegration, causality relationship for short and long-run relations, and GMM to analyze the effect of information asymmetry on stock returns dynamically.

In summary, the results according to the tests show there is a strong and significant effect of information asymmetry on stock returns. This relationship is approved in the short and long term. Also, information asymmetry in the dynamic model and with other factors affecting the stock returns. It has a significant and negative effect. Therefore, information asymmetry can be considered as an important factor on stock returns in the capital market. This factor has negative effects on stock returns, which should be taken by policymakers and legislators to reduce it.

To reduce information asymmetry and its adverse effect on stock returns, it is suggested that these measures should be taken by companies and capital market policymakers; Voluntary disclosure of information and as a result increasing the quality of company's information; increasing the frequency of financial reporting, and improving regulatory mechanisms.

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