



Study of Information Asymmetry Effect on Price Synchronism in Tehran Stock Exchange

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ABSTRACT

Accounting profit always as an exhibited item in financial statements has been considered by investors whom are attended as the most significant users of financial statements, so profit is a basis for the most economical decisions. In the research, the effect of information asymmetry with price synchronism (a criterion to measure the proportional amount of corporate special information, which has been reflected in price) have been investigated in accepted corporations in Tehran stock exchange. In research information asymmetry is independent variable and price synchronicity is dependent variable. Price Synchronism is an amplitude which shows industry and market returns and stock return differs in corporation level. The research is an applied research based on its aim, is measuring and describing based on its performance and is one of the best. 127 corporations from 2010 to 2014 have been chosen by systematic deletion. To test research hypotheses Panel Data method and Fixed Effect method have been used. Research conclusions show that there is no relationship between information asymmetry with price synchronism.

Keywords: Commitment Items Quality, Information Asymmetry, Price Synchronism

JEL Classifications: C53, C5, E37, E32

1. INTRODUCTION

Information asymmetry exists when managers and market have similar information about a corporation. So, managers and market constant unreliability about corporation. However, information asymmetry makes a chance for managers to be aware of information, more and better than market because managers know private and secret information about the corporation, it means that managers can access corporation's information before market. Corporation special information is transmitted to market during time and through information disclosure events. Market before disclosure expresses unreliability about corporation. Corporation information asymmetry equal with corporation unreliability because it may cause that managers and market will be aware of market variables effects on corporation value as same as each other (Chan et al., 2013), market reaction to profit announcement can be the first criterion of corporation information asymmetry theory information disclosure. Information asymmetry can be determined by information situation, public announcements intensity, numbers of corporations'

transactions and market or managers behavior. For example, when public news about corporation, it is presumed that other factors are fixed, may cause that market be aware of corporation more and information asymmetry decrease. One of the main points about stock exchange is market effectiveness discussion, which are based on all existed information on the market, and reflect their effects on stock price. Effective market theory can indicate the reason of existence accounting in information asymmetry in which one of the exchange part has more information in relation to its adverse part. This is because of intra group information and transactions.

Price synchronism means limitation of corporation return which is described by industry and market returns and use of low price synchronism means low effect of industry information on price (Arabmazar et al., 2006).

This research wants to answer to this question "whether information asymmetry effects on corporations stock price synchronism in Tehran Stock Exchange or not?"

2. REVIEW OF RELATED LITERATURE

Scott (2009) defined price synchronism as industry and market information degrees, which are reflected in corporation stock price. Biddle and Hilary (2006), Cameran (2005), defined stock return synchronism as an attribution amount of industry and market returns to describe corporation stock return changes. So, it can be said that price synchronism is equal to division of the systematic risk ratio on unsystematic risk. Stock price behavior will follow market movement and corporation special information. Market movement is included different topics such as internal, external, political and etc. and corporation special information is related to the corporation. So, investors can trust more to dependent corporation profit of corporation special information. When the relationship between corporation return and market return (price synchronism) is low, it shows corporation special information more. So, low price synchronism of corporations stock show that their prices are dependent less on a market movement because market actives trust to corporation special information more.

Hirshleifer et al. (2009), investigated relationship between commitment items and cash flow with stock market measure. They found many positive relationship between commitment items measure and stock market. However, negative relationship existed between cash flows and stock market.

Jackson et al. (2009), investigated the relationship between commitment quality and disclosure quality and showed that how these variables for the description of time serial changes had been used interchangeably in fort fuses durations.

Chan et al. (2013), investigate relationship between commitment items and stock future return and concluded that stock market of corporations with high commitment items in next duration of financial information reporting would decrease. These findings indicate that time investors would discover profit low quality and stock price would decrease with delay, too.

3. RESEARCH METHODOLOGY

The research is an applied research based on its aim, and is correlative research based on research hypotheses deduction. Eviews 7 has been used to analyze research data. The panel data method has been used, but before research data analysis, variables lasting should be investigated.

As said before, research is an applied one, so describing and analyzing methods have been used to answer research questions. The dominant view on the research atmosphere of systematic view is based on system view. The research is a sectional one based on its time because it has been done in one duration time and searched realities. It is an applied criterion based on applied research. For research performance levels both library and squaring data gathering methods have been used. Research information has been gathered by referring to corporations financial statements sites in stock exchange and Rahnavard software.

The research statistic population includes all accepted corporations in Tehran Stock Exchange from 1389 to 1393 which have been

chosen by systematic deletion, but 127 corporations have been considered as research statistic population. It should be said that each corporation includes 5 collections of exploitable financial information in financial statements and other related information sources.

3.1. Variables Defining and Introducing

This research has two kinds of variables, dependent variable and independent variables.

In the third hypothesis information asymmetry is independent variable and price synchronism is dependent variable.

3.2. Information Asymmetry

Information is qualitative contents, they need models to be expressed by numbers, amounts and changed to quantitative contents. To do this price amplitude of stock sale and purchase (buy) have been suggested. This model was used by Chiang and Mark in 1986 which was a suggesting price amplitude determination for stock sale and purchase.

$$SPREAD = \frac{(AP-BP)}{(AP+BP)} \times 100$$

SPREAD = Suggesting price of amplitude difference for stock sale in investigation duration.

AP (ASK PRICE) = Average of suggesting price for i corporation stock sale in investigating duration.

BP (BID PRICE) = Average of suggesting price for i corporation stock purchase in investigating duration.

To calculate the quotation, at first the best suggesting price for each share sale and purchase for 21 days before and after profit announcement should be extracted (best price suggesting buy means the highest suggestion for each share purchase in each day, and best price for sale suggesting is the lowest suggesting price for each sale in each day). Then with use of their averages, the difference amplitude of suggesting price for stock sale and purchase (buy) should be calculated.

3.3. Price Synchronism

To calculate price synchronism Cameran (2005) model is used:

$$Synch = \log \left(\frac{R^2}{1-R^2} \right)$$

R^2 in the above quotation is received determination coefficient from two factors changes, market and industry monthly returns in one financial year and its effect on corporation stock monthly return.

$$R_{it} = \alpha + \beta R_{Mt} + \gamma R_{It} + e$$

R_{it} = i corporation stock return for t month.

R_{mt} = i corporation market return for t month.

R_{it} = i corporation industry return for t month.

Table 1: Descriptive indicators of studied variables

Variable	Number	Average	Mode	SD	Maximum	Minimum
Price synchronism	635	-1.53	-1.47	1.18	-4.658	5.532
Voluntary commitment item	635	0.0131	0.0125	0.117	-0.28	0.35
Involuntary commitment item	635	0.087	0.065	0.235	-0.20	0.37
Corporation size	635	14.23	13.54	0.429	6.77	18.80
Financial lever	635	0.083	0.080	0.076	0.001	0.99
Information asymmetry	635	0.392	0.241	0.1891	0.10	0.71

Numbers are in million Rials. SD: Standard deviation

Above quotation is used for 12 months duration in each year. R^2 is used as a criterion to measure price synchronism.

3.4. Research Data Analyses and Descriptions

Gathered information descriptions are one of the research level in research data analysis part and their reports are important in research. Research data with use of second hand information sources have been gathered and classified. Descriptions of information and statistic data are chosen based on measuring criteria. So, in this part statistic sample characteristics and related indicators to the financial statement of statistic sample members are investigated.

3.5. Research Variables Descriptions and Analyses

Research variables analyses have been used as a methodological aim to describe research conclusions and research hypotheses evaluation description characteristics are statistic deduction based on variables indicators. Research variables are described and analyzed based on statistic indicators of dispersal and central trends. Totally, all the methods, which are describing data are processed and summarized, are called descriptive statistic. It should be said that after omitting additional data and arranging data, corporations numbers of research variables years will decrease.

Descriptive statistic Table 1 shows standard deviation, minimum and maximum amount of each dependent, independent, and central variable. In this table, the main central indicator is the average, which shows balance point and distribution exertion center, which is a good indicator to show data center.

As shown in Table 1, average amount of price synchronism is -1.53 and variable mode is -1.47. Totally, dispersal criteria are criteria which investigate and compare dispersal observations, for example standard deviation is one of the dispersal criteria which is 1.18 for price synchronism in the Table 1.

4. RESULTS

4.1. Analysis Methodology of Test Type Determination

To determine mixture data and homogenous or inhomogeneous specifications of data, Chow test and F Limer statistic are used. Test hypotheses are:

H_0 : Polled data

H_1 : Panel data.

If test conclusions are based on paneling data uses, one of the models of random effects or fixed effect will be chosen. To choose one of these models, Hausman test will be done (Table 2).

Table 2: Hausman test conclusions to determine use of random or fixed effects models

Test conclusion	F-statistical probability	F	Hypothesis test
Fixed effects	0.000	38.177	Research model

Table 3: Chow test conclusions, sections homogenous or inhomogeneous specifications

Chow test conclusion	F-statistical probability	F	Hypothesis test
H_0 is rejected	0.000	9.174	Research model

H_0 : Random effects

H_1 : Fixed effects.

As indicated in Table 3, Chow test conclusions show that the received probability for the F-statistic in all research hypotheses are <0.05 . So, data in all models are chosen as paneling to test this hypothesis.

4.2. Hausman Test

In this test Cheedow statistic with freedom degree K is used. If received Cheedow is more than table amount, H_0 based on random will be rejected and fixed effects will be accepted.

In this test, H_0 is based on panel data model with random effects and its contrary hypothesis is based on panel data with fixed effects model. If Hausman test is more than its critical amount or its probability is <0.05 , H_0 will be rejected and H_1 will be accepted. Based on received conclusions of Hausman test for research model $\alpha = 0.05$, statistic Hausman for research model is 38.177 and $P < 0.05$, so H_0 is rejected. H_0 rejection shows that random effects are incoherent and fixed effects should be used.

4.3. Research Hypotheses Test Conclusions

In this study panel data model is dominate, this model is a time mixture serial information (2010 to 2014) and research sectional data are gathered by 127 corporations data in Tehran Stock Exchange, all the calculated amounts for variables are based on million Rials. Eviews 7 and 8 softwares have been used based on research models hypotheses.

H_0 : Information asymmetry has a meaningful effect on price synchronism

H_1 : Information asymmetry has no meaningful effect on price synchronism.

Table 4: First model descriptive statistic

Model	Determination coefficient	Adjusted determination coefficient	F-statistic	Meaningful level	Watson–Durbin statistic
Second	0.127	0.194	31.237	0.000	2.10

Table 5: Coefficients and t-statistic amounts

Variables	Coefficients	t-statistic amount	Meaningfulness
Fixed variable	2.691	5.120	0.000
Involuntary commitment item	0.265	1.780	0.692
Corporation size	-0.081	-2.74	0.142
Financial level	-0.113	-2.89	0.087

The main important aim of the Table 4 is its statistic presentation for practice goodness measuring which is done by determination coefficient. Determination coefficient is a criterion for measuring relationship intensity between x and y which is 0.194. It means that the determination coefficient can describe 0.019 of dependent variable changes (price synchronism). Continuous correlation among the remainders mean observations effects on each other. Based on Watson–Durbin statistic amount 2.10, there aren't any continuous correlations between data. After investigating total model meaningfulness with use of accepted F-statistic, we should investigate coefficients meaningfulness by t-test. The following table describes meaningfulness of regression model coefficients.

5. CONCLUSIONS

Based on research first model test conclusions, F-statistic meaningful level 0.000 is less than accepted error level 0.05, so total regression model is meaningful. Watson–Durbin statistic amount 2.10 is situated from 1.5 to 2.5. Then correlations among error members aren't existed. Based on high t-statistic (P-value) of accepted error level for β_1 coefficient, test conclusions show no meaningful effect on information asymmetry. So, the research zeros hypothesis of first model can't be rejected in 0.095 error level. Research conclusions show entered controlling variables in financial lever regression have a meaningful effect on price synchronism and corporation size doesn't have any meaningful effects on price synchronism determination coefficient and adjusted the determination coefficient show that entered variables in regression can describe 0.019 of dependent variables changes. Following regression model for the first hypothesis is accepted:

$$\text{Synch} = 2.91 \pm 0.265 \text{Innat} \pm 0.081\text{SIZE} \pm 0.113\text{LEV}$$

As indicated in the Table 5, information asymmetry variable with 0.265 coefficient and 0.692 meaningful level have entered the model. So, there is no meaningful effect of information asymmetry. Then H_0 of research hypothesis is rejected.

- Based on third hypothesis, it is suggested to corporations analyst and decision makers not to consider information asymmetry when they calculate price synchronism but consider factors which effect on stock special price
- Based on received conclusions of third hypothesis, information asymmetry means investments existence with special information by different qualities in the market, and effect on market transactions on the stock exchange, however, it doesn't have any relationships with stock price synchronism. So, accountant and inspectors should consider all these factors and attend the factors giving information to investors by corporation that can effect on stock price and stock price synchronism.

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