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The Effect of Voluntary Disclosure on the Relationship between Accruals Quality and Information Asymmetry

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ABSTRACT: The present study aimed to evaluate the effect of voluntary disclosure of financial information on the relationship between accruals quality and information asymmetry. Accruals quality was measured using the level of discretionary accruals, which was obtained through estimating those models introduced by Jones in 1995 and Kothari et al. in 2005. Information asymmetry was also calculated by the range of price offered to buy and sell shares in each company. The required data was collected using a sample of 149 companies listed in Tehran Stock Exchange from 2005 to 2012. The collected data was analyzed using combined data method and random effect models. The results showed that the level of discretionary accruals in the surveyed companies have a significant and positive relationship with information asymmetry. In addition, if more information is voluntarily disclosed, the intensity of the relationship between accruals quality and information asymmetry will be reduced. In other words, if more information is disclosed, the information asymmetry between shareholders decreases and discretionary accruals decreases as well.
Key words: Voluntary Disclosure, Discretionary Accruals, Profit Management, Information Asymmetry

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INTRODUCTION

Financial information is very sensitive to passage of time. Both value and advantage of financial information in process of decision-making may decrease over time. If the relevant financial information was provided close to the date of relevant events, the information will be timelier. If the information was timely used by the investors in making economic decisions, the reporting speed will increase as well. Then, financial information of the companies will be more transparent. Consequently, capital market will also be more transparent. This in turn have a great influence on attractiveness of financial markets and capital. The accounting information will be useful for financial and investment decisions in case of containing valuable information and timely disclosure.

The human being needed information overall history of life in order to understand phenomena and reduce uncertainty about the unknown information. The beginning of human history coincides with his ability to accumulate and exchange information. Making decisions is considered as the main task of a manager in an economic enterprise. Decision-making is dependent on information disclosure. As a result, it is impossible to make logical decision when no information is found. Thus, information reduces ambiguity and motivates the humans to make logical decisions. Among accounting information, accounting profit is considered as the main source of information to assess future profitability and cash flows. Accounting profit and cash flow are considered as vital assets of an economic enterprise. Financial decisions such as securities evaluation models are made based on accounting profit and cash flow. Accounting profit is measured based on the accrual, which is divided into cash and accrual components. The present study aimed to examine the effect of voluntary disclosure on the relationship between accruals quality and information asymmetry in the companies in Tehran Stock Exchange.

Research Theoretical Principles

Financial reporting is the most important product of accounting systems. The main objective of financial reporting lies in providing the information needed to evaluate performance and profitability of an economic enterprise. “Net income” is one accounting item prepared and presented in financial report used in many different applications. Calculating the tax benefit, developing dividend policies, giving guidance and making decisions for investment and prediction factor are all based on profit [1]. Given the diversity of different users of financial reports and their various informational requirements, different results may be obtained on a subject if the information was unevenly distributed among the people. Even if the market prices of securities fully reflect the information, it might be possible that those individuals within the organization (managers) be more informed about quality of the company than those individuals outside the organization (stakeholders). The former might proceed to gain more profits due to this specific informational advantage. Theory of information asymmetry was

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founded by three scientists called Spins, Akerlof and Stilitz in the 1970s. Previous research has shown that increasing accruals quality may reduce information asymmetry [1]. Profit calculation and financial reporting are based on accrual accounting. Accounting profits are divided into accrual and cash components. Accruals items have more valuable contents compared to cash flow from operations. The former is considered as a supplement to cash flow, which helps the investors to determine performance of the company [2]. However, Accruals Management may be full of digressions due management's deliberate manipulation or personal preferences according to representation theory. This is due to conflict of interests and different preferences between managers and the owners. Hence, the investors should spend substantial amount of money for data processing to fully understand both meaning and value of accruals. Those investors who hesitate to understand true economic value of accruals cannot properly estimate value of those items in the upcoming year [3]. Xie [4] with respect to Sloan showed that incorrect pricing is majorly due to abnormal accruals because the market has not fully understand those abnormal accruals for which the management is authorized. Therefore, an information asymmetry is expected between those informed investors who are able to properly estimate value of accruals and those uninformed investors. The greater the quality of accruals, the greater the quality of profit. As a result, information asymmetry between informed and uninformed investors decreases.

Empirical evidence indicated that voluntary disclosure could reduce the information asymmetry [2, 5, 6]. Voluntary disclosure is defined as disclosing the information beyond those legal obligations legislated by regulatory bodies and legislators. In other words, voluntary disclosure is defined as providing information from the reporting department to financial markets without any obligation. This issue is based on the fact that the managers compared to foreign investors have more and better information about the firm's future performance even in an efficient capital market [7]. In fact, voluntary disclosure can be considered as a mechanism to protect the rights of foreign investors in a company. This reduces information asymmetry and agency cost [8].

In this study, it was attempted to determine whether accruals quality is associated with information asymmetry or nor? Does the level of voluntary disclosure have a significant influence on the relationship between accruals quality and information asymmetry among the companied listed in Tehran Stock Exchange?

Literature

Several researchers were conducted inside and outside the country within the scope of this research as follows:

Diamond and Verrecchia examined the relationship between liquidity disclosure and capital cost in American Companies. The results showed that disclosing public information to reduce information asymmetry could reduce the company's cost of capital through absorbing the increasing demand of large investors to increase stock liquidity [9]. In another study, Vanstraelen et al. examined the relationship between disclosing nonfinancial information and analysts' prediction. They concluded that voluntary disclosure of future information is significantly related to lower issuance levels and accuracy of analysts' predictions. In contrast, voluntary disclosure of the past information has no effect on issuance or accuracy of analysts' profit forecasts [10].

Ann Pozer presented a standard definition of transparency as follows: timely and adequate disclosure of financial and operational functions. Based on this definition, Aksu studied the effect of disclosure transparency on Istanbul Stock Exchange. He believed that transparency and proper disclosure protect rights of those investors, shareholders and other stakeholders who do not have access to first-hand information. It is expected that if information transparency increases, information asymmetry, the risk of fraud and capital cost decreases while value of the company increases. Aksu showed that transparency and proper disclosure reduce political and unacceptable tax costs [11]. Wang et al. examined the relationship between timely disclosure and transparency of financial information reported in China Stock Exchange. They examined 2894 companies from 2004 to 2006 and found out that timely annual financial reports are positively related to information transparency after controlling such normal factors as audit opinion. Those companies issuing timely financial information, particularly prospective financial information, experience high levels of information transparency and low profit management [12]. Bachtiar examined the relationship between accruals and information asymmetry from 2005 to 2007 in Indonesia. The results showed that there is a significant and positive correlation between accruals and information asymmetry. The findings also suggested that there is a positive and significant relationship between abnormal accruals and information asymmetry [13]. Cormier et al. studied the moderating effect of voluntary disclosure on the relationship between profit quality and information asymmetry in Canadian Companies. The results showed that both profit quality and voluntary disclosure reduces information asymmetry; moreover, voluntary disclosure has a moderating effect on the relationship between profit quality and information asymmetry [3].

Research Variables

How to measure each variable and test the hypotheses:

A) Independent variable: Accruals Quality

The modified Jones Model (1995) was used in order to measure the independent variable; i.e. accruals quality, in the regression model to investigate the abnormal accruals. These models are used to differentiate normal and abnormal accruals (non-discretionary) of the profit. The final values for size of abnormal accruals are

residuals of the models estimation. These indicators are used since greater abnormal accruals in profit imply lower accruals quality profit.

The following modified Jones Model is used to measure the first indicator of quality of accruals:

$$\frac{TA_{it}}{Assets_{it-1}} = \beta_0 \left(\frac{1}{Assets_{it-1}}\right) + \beta_1 \left(\frac{\Delta Sales_{it}}{Assets_{it-1}}\right) + \beta_2 \frac{PPE_{it}}{Assets_{it-1}} + \varepsilon_{it} \quad (1)$$

In this model,

TA_{it} represents total accruals,

A_{t-1} represents total assets of the company in the previous period (beginning of the year),

$\Delta Sales_{it}$ denotes changes in sales revenue in this year,

PPE_{it} represents gross sum of property, plant, and equipment (fixed assets),

In model (1), all variables in the model are divided to total assets at beginning of the year (A_{n-1}) to standardize variables. Total accruals (TA) in the above model can be calculated by the following equation:

TA = EARN - CFO (2)

In this equation, EARN represents net profit while CFO denotes cash flow from operations. The ultimate size of accruals quality of residual values is estimated based on model (1), which represents discretionary accruals. The greater the absolute size of the residual, the greater the discretionary accruals, the lower the accruals quality in the sample companies.

B) Dependent Variable: Information Asymmetry

Information asymmetry is a qualitative concept. Then, this factor should be quantified as numbers and figures. Then, a model is needed. In accordance with Chiang and Kintash (1986) and Carmier, Haul and Lidaks (2013), the price range offered to buy and sell shares was used because the higher the prices offered by the buyers and sellers for shares of a company, more diverse and asymmetric the information based on which decision are made. This relationship is as follows:

$$Asy = \frac{(AP - BP)}{(AP + BP)/2} \times 100 \quad (3)$$

In this relationship, Asy represents the range of prices to buy and sell shares of the company used as an indicator of information asymmetry,

AP (ASK PRICE): average sales price of company shares

BP (BID PRICE): average bid price to buy shares of the company

C) Moderating Variable: Level of Information Disclosure

Voluntary information disclosure was added to the regression model as the moderating variable. Disclosure index is equal to scores of disclosure earned by the company calculated by the Stock Exchange, which belongs to the company. In this study, annual scores on firm's disclosure quality in the companies listed in Tehran Stock Exchange from 2008 to 2012 were calculated as disclosure index. Disclosure quality scores are calculated for the listed companies during 3, 6, 9 and 12 months by Tehran Stock Exchange Organization in 2003. These scores reflect the exchange evaluation on awareness of corporate disclosure sector.

Research hypothesis

The First Hypothesis: the accruals quality is significantly and positively related to information asymmetry.

The Second Hypothesis: the quality of information disclosure has a moderating effect on the relationship between accruals quality and information asymmetry.

MATERIAL AND METHODS

This is an applied research based on the objective. This is also a descriptive-correlational study based on methods. This is an experimental research design using a post-hoc approach (using past information).

Statistical Population and Sample

The statistical population consisted of all the companies listed and maintained their memberships in Tehran Stock Exchange from 2007 to 2012. Total number of listed companies in Tehran Stock Exchange was equal to 480 companies. Systematic elimination sampling method was used to select the subjects. Thus, those companies that do not meet any of the following conditions were eliminated form all the listed companies. Finally, the remaining companies were selected for testing:

- The companies should have complete data on all financial statements including balance sheet, income and cash flow statements.
- The financial year should end at 29 March.
- Companies should keep operating on the Stock Exchange during the period under study.
- The financial year should not be changed during the research period.
- There should be no investments, financial intermediator or insurance companies among the listen ones.

Due to those limitations cited in the present study, a sample of 149 companies was selected and studied

Estimating the Model and Testing the Hypotheses

In this paper, combined data econometric method (total study period) was used to estimate the research model and test the hypotheses according to data type and available statistical analysis methods. In this research, quantitative values of both independent and dependent variables were obtained from 149 different companies from 2008 to 2012. Thus, total observations were 745 firm-year in the regression analysis. Multivariate regression model was used to test the hypotheses. This model was introduced and used by Carmier and Lidaks (2012).

$$INASY_{i,t} = \beta_0 + \beta_1 AAC_{it} + \beta_2 VDIS_{it} + \beta_3 AAC_{it} * VDIS_{it} + \beta_4 SYSR_{it} + \beta_5 LIQ_{it} + \beta_6 SIZE_{it} + \varepsilon_{it} \quad (4)$$

Variables used in the model are as follows:

INASY (dependent variable) represents the information asymmetry;

AAC (independent variable) represents discretionary accruals and accruals quality index;

VDIS (moderating variable) denotes disclosure index variable (the measurement procedure was mentioned earlier);

SYSR (independent variable) denotes systemic risk index known as Beta;

LIQ (a control variable) represents the ratio of liquidity (measured through ratio of cash flow to total assets);

SIZE (variable control) represents size of the company (measured through logarithm of the total assets of the company) and

ε denotes the estimated error in the model.

Significance of β1 and β3 parameters in model (4) was tested to confirm the first and second hypotheses.

Limer (Chow) and Hausman F test was used to test the model in different times and combined data sections. In Chow test, if the obtained Chow value was significant, the null hypothesis will be rejected and the fixed effect model (panel data) will be accepted. If this statistics was not significant, pooled data method will be used to test the hypothesis. In Hausman Test, if the obtained Hausman statistics was significant, the null hypothesis will be rejected and the fixed effect model will be accepted. If these statistics were not significant, random effect model will be used to test the hypotheses. Chow test results are presented in Table 1.

Chow test results confirmed the null hypotheses based on the research model. The null hypothesis claimed that the intercept in all periods were the same. Therefore, pooled data method is a suitable option to estimate the first and second test.

Table 1. Results of determining an appropriate model in combined data

The test model	The test type	Test statistics	p-value	Test result
Model (1)	Chow test	2.3244	0.3163	Pooled data
	Hausman test	-	-	
Model (2)	Chow test	1.8829	0.3817	Pooled data
	Hausman test	-	-	

Source: author calculations

RESULTS

Descriptive Statistics

The collected data should be described in order to better understand the statistical population and the research variables prior to data analysis. Data description takes a step toward recognizing the pattern governing the data and explaining the relationships between variables used in this research. Thus, descriptive statistics were calculated for the variables used in the study prior to testing the research hypotheses. These are presented in Table 2. Descriptive statistics provide an overview of the research data.

Table 2. Descriptive statistics on research dependent and independent variables

Variables	Mean	Median	Maximum	Minimum	Standard deviation
$INASY_{BA}$	0.1894	0.1592	0.4269	0.0143	0.0219
$INASY_{SPV}$	0.7124	0.6873	1.8487	0.0886	0.1147
AAC_J	0.2149	0.2653	0.7984	-0.2366	0.1548
AAC_K	0.1892	0.1904	0.6458	-0.2138	0.1163
VDIS	0.3862	0.3651	0.7833	0.0166	0.0156
SYSR	0.7538	0.8236	19.4651	-2.6348	0.4894
LIQ	184.24	192.37	1645.21	63.28	23.86
SIZE	5.2893	5.6635	7.8942	4.3469	1.3246

Source: author calculations

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Estimating the research model

Test results of significance of the regression model and the relevant coefficients using pooled data method can be observed in Table 3.

F statistic is significant at both cases of estimates with 99% level of confidence. Therefore, it is concluded that the research model is significant in both cases. Then, both independent and control variables can explain the dependent variable in the model. In addition, the adjusted determination coefficient was obtained as 0.3896 in the first estimate of the model. This shows that approximately 39% of changes in the dependent variable; i.e. information asymmetry ($INASY_{BA}$), are caused by changes in the model's independent and control variables while 61% of changes in the dependent variable are caused by other factors. The adjusted determination coefficient was obtained as 0.3144 in the second estimate of the model. Thus, approximately 31% of changes in the dependent variable, i.e. information asymmetry ($INASY_{SPV}$), are caused by the independent and control variables in the model. Comparing the two figures shows that the research model in the first case of measuring information asymmetry, i.e. the difference between offered buy and sell prices, is more reliable than the second case of measuring information asymmetry, i.e. fluctuating market value. Then, using the difference between offered buy and sell prices is more suitable for measuring information asymmetry.

According to contents of Table 3, t-statistics of the independent variable AAC_J and level of significance (p-value) in the first case of measuring information asymmetry were respectively as 3.9980 and 0.0076. Given that the resulting error was less than 0.01, it can be concluded that abnormal accruals have a significant relationship with information asymmetry with 99% level of confidence. Abnormal accruals coefficient (β1) is positive. As a result, there is a direct relationship between accruals quality and extent of information asymmetry. In other words, increasing the rate of abnormal accruals in profits of the sample companies increased the extent of information asymmetry in these companies.

Table 3. regression model test results - the first and second estimates

$$INASY_{i,t} = \beta_0 + \beta_1 AAC_{it} + \beta_2 VDIS_{it} + \beta_3 AAC_{it} * VDIS_{it} + \beta_4 SYSR_{it} + \beta_5 LIQ_{it} + \beta_6 SIZE_{it} + \varepsilon_{it}$$

Description	**Model test in the first case Dependent variable: $INASY_{BA}$**				**Model test in the second case Dependent variable: $INASY_{SPV}$**			
	Parameter	Coefficient	t-static	p-value	Parameter	Coefficient	t-static	p-value
Constant coefficient	β_0	0.0843	4.2166	0.0000	β_0	-0.3288	-2.7153	0.0009
AAC_J	β_1	0.1148	3.9980	0.0076	β_1	0.2481	4.9326	0.0000
VDIS	β_2	-1.3779	-6.0427	0.0000	β_2	-0.0177	-8.2879	0.0000
AAC_J * VDIS	β_3	-0.0432	-3.7688	0.0062	β_3	-0.4316	-5.2139	0.0002
SYSR	β_4	0.1829	4.0878	0.0208	β_4	0.0342	2.2145	0.0864
LIQ	β_5	-0.0146	-3.3261	0.0148	β_5	-0.1142	-3.2827	0.0326
SIZE	β_6	0.1829	4.0878	0.0202	β_6	1.4238	6.2134	0.0000
Adjusted R^2		0.3896				0.3144		
F-static		6.2867				6.4439		
F (p-value)		0.0000				0.0000		
D-W		1.8891				1.9286		

Source: author calculations

The t-statistics for the independent variables AAC_J and level of significance (p-value) in the second case of measuring information asymmetry were respectively as 4.9326 and 0.000. Thus, it can be concluded that the quality of accruals had a significant and positive relationship with information asymmetry with 99% level of confidence. Therefore, the first research hypothesis of accruals based on Jones model and both cases of measuring information asymmetry (the first and the second estimates) is confirmed.

To test the second hypothesis, significance of β_3 coefficient should be considered. In the case of variable coefficient of AAC_J * VDIS, it is observed that the obtained level of significance is less than 0.01 in the first estimate. Therefore, it can be concluded that product of accruals and the level of voluntary disclosure (AAC_J * VDIS) has a significant relationship with information asymmetry in the sample companies. Consequently, the second hypothesis (in both the first and second estimates) is confirmed.

DISCUSSION AND CONCLUSION

The first research hypothesis of accruals based on Jones Model and the criteria to measure information asymmetry (the first and second estimates) is confirmed. Thus, it can be concluded that accruals quality is significantly and positively related to information asymmetry in the companies listed in Tehran Stock Exchange with 99% level of confidence. Then, it can be interpreted that if the profit was opportunistically manipulated and the accruals quality was low, non-transparent information will be given to the shareholders. As a result, the investors will not be properly informed of intentions of the management. Thus, the shareholders will have less knowledge on corporate internal information. Thus, information asymmetry is created. These findings are in line with those obtained by Bachtiar [13], Cormier and Ledoux [2].

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The second hypothesis (in the first and the second estimates) is confirmed. Therefore, it can be concluded that product of accruals and the level of discretionary disclosure had a negative and significant relationship with information asymmetry in the sample companies. In other words, increasing the level of voluntary disclosure in those companies listed in Tehran Stock Exchange decreases information asymmetry as well as intensity of the relationship between abnormal accruals and asymmetric information.

There are two complementary and substitutionary relationships hidden in the relationship between disclosure and the quality of accruals. According to the results, there is a substitutionary relationship between the sample companies. A number of researchers claimed that information asymmetry between those investors aware of the company's confidential information and those uninformed investors motivate the people outside company (outsource) to request information disclosure. This issue also motivates internal sourcing to disclose more information since available additional information is valued in such case. In other words, those companies with poor quality accruals disclose more information since the information asymmetry between managers and investors in these companies is higher. These findings are in line with those obtained by Cormier and Ledoux [2].

There were also several limitations in this research. One limitation lied in not controlling those factors influencing the results. The impact of such variables as economic factors, political conditions, global economy, laws and regulations, etc. which could not be controlled by the researcher and might affect the relationships between the research variables can be cited among those factors. Another limitation lied in not adjusting financial statements due to inflation, which could affect the results.

The study results showed that disclosing more information voluntarily reduces information asymmetry between the shareholders. Therefore, it is recommended that managers in public limited companies attempt to disclose further information. As a result, information asymmetry and investment risk are reduced. According to research results, the following suggestions are offered for future research:

A) Examining the effect of profit management and accruals quality on information asymmetry and comparing the results in different industries

B) Examining the effect of mandatory disclosure (in comparison to voluntary disclosure) on the relation between accruals quality and information asymmetry and comparing the results with those obtained in the present study

C) Examining the effect of other variables such as quality audit and non-financial company characteristics on the relationship between accruals quality and information asymmetry.

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