

## Specify the Effect of Information Asymmetry on the Accrual Anomaly

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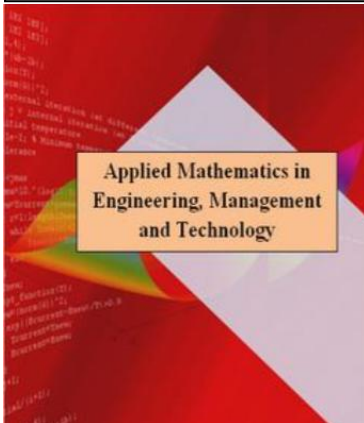
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### Abstract

The accrual and cash items of revenue have different impact on the earnings persistence. One of the important qualitative characteristics of earnings is its persistence that indicator index for the continuing and stability of earnings. The accrual component of earnings persistence is lower than its cash component. This case has causes investor's mispricing and result in attain future abnormal returns. This negative relation of accrual and future stock returns is one of the market anomalies that had been introduced as accrual anomaly in the accounting literature. Accessibility of financial information is effective factors in the investor's investment decision. With respect to information asymmetry in financial markets, inappropriate economic decisions being formed by investors. In other side, if information asymmetry be exited, managers have higher incentives to earnings management that this case make investors overestimate the accrual persistence. Purpose of this research is to investigate the impact of

information asymmetry on the accrual anomaly.

In this research, for attain the main purpose, two hypothesis were developed. For the hypothesis testing statistical sample specified with the systematically sampling methods and finally, 100 firms investigated during 2006 to 2013. For the hypothesis testing, two stages panel data regression model with applying mishkin test was used.

The result of this research indicate that information asymmetry has insignificant effect on the accrual anomaly in the statistical sample. In the other words, with increasing in information asymmetry, accrual anomaly doesn't increase.

**Key words:** accrual anomaly, information asymmetry, accruals, abnormal return.

### Introduction:

Economical unite benefit is the most important information that provide foundation in many of decision makings and judgments for financial information application, therefore one of the facing challenges for researchers is to determine the reliable criterions to predict commercial unites future benefits. Although prediction of future benefits is justifiable based on the present profitability, due to present impracticalities in benefits measurements, the benefit is not remain stable in future outputs and there is the possibility to make differences between the actual and reported benefits. Because there are more judgment and misunderstanding in measurement, the time for accrual which is abnormally very low, in the fewer benefits, future outputs will be stable. This low stability is due to different specification that is not realized by investors between the accrual and cash benefit. Therefore in future periods, in which intended benefits are not fulfilled, they are surprised and they take abnormal returns. Hence the negative relation between accruals in current outputs and future return were introduced by Sloan in 1996 that are called the accrual anomaly. One of the effective factors in decision making is the proper information and related to the subject data. If required information is distributed without conformity between the people, the information transference is done unequally between people that could lead to difference results about the subject. Lack of informational symmetry is occurred when one side of contract or dealing has more information or awareness providing that such information is influential, Kelarkson and coworkers, 2007

## 2- Literature Review:

The accounting benefit is including two accruals bases that are: the cash part and accruals which construct the benefit together. The accrual part of benefit in the company performance evaluation has more importance compared to the cash part. The research result of Sloan 1996 showed that companies earning with high proceeding take low future. Sloan attributed this subject to lower stability in accruals comparing to cash part of benefit and declared that the investors do pricing the present information in accruals wrongly. Also Xie researches 2001 showed that accrual anomalies frequently are in relation with discretionary component of accruals. On the other hand one of the main factors in making accrual anomalies, is the benefits management (Pincus and coworkers, 2007). The accruals due to the earning management have low stability and less assurance. This low stability and assurance capability will lead to the fewer stability of benefit due to accruals low assurance. If the investors are not aware about this issue that the earning lower stability due to lower assurance capability of accruals, the wrong pricing of stock is occurred. On the other hand lack of main factor information symmetry is the main reason in managers guidance toward earning management. One of the negative phenomenon that is usually occurred in stock market, is the lack of information that are leading to improper economical decision making by investors. Trueman and Titman 1988 showed that lack of symmetry in information between management and stock holders is the main condition in the earning management which is due to high informational discrepancies; managers have high motivation to earning management because when the asymmetry of information is high, stock holders don't have high information for supervising managers intentional performances. Schipper, 1989 believed that when information asymmetry is high, investors capability for earning management realization is reduced, therefore companies due to informational asymmetry between managers and stock holders, managers have high motivation for the earning management that leads to increase of more estimation of investors in accruals stability because investors don't have complete understanding about accruals due to asymmetry of information.

## 3- Research Background:

Richardson and coworkers in 2005 made a research about the accruals effect and commercial department benefit quality. The result of research identified that the high (low) level of accruals has relation with low (high) return of future stock.

Chan and coworkers 2006 made a research about accruals and stock future return and results showed that companies with high accruals in next periods after informational reporting and their stock return is reduces. This finding showed that investors when realize the earning low quality, balance the stock price appropriate with the subject issue. But this reaction is done with delay.

Resutak 2010 in his research named as invisible returns and reverse returns, evaluated the accrual anomalies and invisible return effect on these anomalies. His studies showed that there is reverse relation between the accruals and stock returns but in contrast to past literature, investors in correct method evaluate accruals and accrual anomalies could be due to investors' reaction to information which have not measured and claimed according to accruals.

Sayni and Herman 2010 in their research evaluated the relation between sections information divulgences, investment cost and asymmetry. The results of research proved that there is negative meaningful relation between the stock owner right and sections information divulgences. Also there is meaningful positive relation between the stock owner right investing cost and effects due to informational asymmetry. In other word when high informational asymmetry leads to make a powerful negative relation between stock owners right investing cost and sections information divulgences.

Chen Jiang 2012 in their research by the title (separation of book value ratio toward market value (B/M) and accrual anomalies), the book value rate is separated in two parts of "book value ratio to intrinsic value" and "intrinsic value ratio to market value" and then they discussed whether accrual anomalies or mispricing part (intrinsic value to market value) or incorrect valuing part (intrinsic value to market value) have more relation, in other word in their analysis all three risk, stability and growth are evaluated as the same time. By the use of regression method and portfolio making method, results show that the accruals is made from a growth and risk part.

Han and et al 2013 in their research named as asymmetry of information and accrual anomalies evaluated the informational asymmetry relation with accrual anomalies and they realized that through informational asymmetry the earning management is obtained and it is the main factor in the informational asymmetry. The result of this research showed that accrual anomalies generally are concentrated in companies with asymmetry. Also the result showed that investors estimate the accruals stabilities in high levels of informational asymmetry more than usual and this estimation is occurred for all informational asymmetry levels in the discretionary accruals

#### 4-Research Hypotheses

For this research a hypothesis is defined as below:

- 1- Information asymmetry has positive effect on the accruals.

#### 5- Research Methodology:

##### 5-1-statistical population and sample selection

The chosen sample includes accepted companies in Tehran Security Exchange during 1385 to 1392 which had below condition:

- In order to have better comparison, the companies that their fiscal year have been ended at the end of each year
- It should not be as the Financial Intermediation (Investment companies, banks and leasing)
- All research required data should be available for evaluation period
- During the research interval, it should not change its fiscal year

According to mentioned condition above, totally 100 companies from 20 industries during 8 years and in other word 800 year-companies were selected as sample

##### 5-2- research models:

The dependent variable in this research has been balanced based on the SAR (size adjusted ratio) measure annually and in order to calculate this variable, first available companies in sample were ordered based on the company's market value (the stock market value multiply to number of stocks), at the end of fourth month after the fiscal year that means 31th of Tir in each year, is sorted small to large. Then the monthly returns for each company are calculated for company for 12 months fiscal period (from the fifth month after the fiscal year to the four months in the next year) by below equation:

$$r = \frac{P_{t+1} - P_t + DPS_t + Pr + BS}{P_t + (1000 \times g)}$$

In this equation, the  $P_{t+1}$  is the stock price at the end of month,  $P_t$  is the stock price in the first month and  $DPS_t$  is the dividend per share (assumed that the annual dividing is made the same, therefore 1/12 of it has been considered for each month,  $Pr$  is the Priority capital,  $BS$  is the Bonus stock and  $G$  is the increasing percentage of investment from the stock owner returns.

After this step, we proceed to categorize the ordered companies based on the size to provide portfolio, companies should be divided the four quarter, the A quarter location is calculated based on the equation 2;

$$C_{Qa} = \frac{an}{4} + \frac{1}{2} \quad (a=1,2,3)$$

Then we proceed to calculate the geometrical calculation for the stock returns of company in each quarter for 12 months period according to equation (3)

$$r_{E,t} = \prod_{m=1}^{12} (1 + r_{i,t(m)}) - 1$$

In this equation  $\prod$  is the The multiplication,  $r_{i,t(m)}$  is the the company return I in month M in the year T,  $r_{E,t}$  That is the company stock return geometrical average for a 12 months period. In next step for calculating the monthly parallel returns of each portfolio the below equation is applied:

$$R_{st} = \sum_{i=1}^n X_i R_i$$

In this equation  $X_i$  is the market value percentage for each company in each portfolio compared to the companied market total value at the same portfolio in 31th of TIR and  $R_i$  is the monthly return for each company stock. In next step the geometrical average of parallel return for each portfolio is calculated for a 12 months period through equation 5 as below:

$$r_{\bar{s},t} = \prod_{m=1}^{12} (1 + R_{st}) - 1$$

In this equation, the  $\prod$  is the The multiplication;  $R_{st}$  is the parallel monthly returns according to size for each portfolio and  $r_{\bar{s},t}$  is the parallel geometric average for the 12 months period and finally the sized adjusted ratio is calculated through equation 6 as below:

$$r_{E,t}^{sized-adj} = r_{E,t} - r_{\bar{s},t} \Rightarrow \prod_{m=1}^{12} (1 + r_{it}) - \prod_{m=1}^{12} (1 + R_{s,t})$$

The accrual anomaly is known as the independent variable in this model and it is calculated as the Sloan following 1996 by below equation for all accruals.

$$ACC_{i,t} = (\Delta CA_{i,t} - \Delta cash_{i,t}) - (\Delta CL_{i,t} - \Delta STD_{i,t} - \Delta TP_{i,t}) - Dep_{i,t} \quad \text{Equation 7}$$

That in this equation  $ACC_{i,t}$  is the total accruals for I company in t year,  $\Delta CA_{i,t}$  is the variation in company current properties in t year,  $\Delta cash_{i,t}$  in the variation in the company cash amount of I company in year T,  $\Delta CL_{i,t}$  is the variation in the company current liabilities in I company in year t,  $\Delta TP_{i,t}$  in the change of tax payment for company I in year t,  $Dep_{i,t}$  is the company I depreciation in year t.

Other independent variable in this research, is the information asymmetry and in this research the bid-ask spread will be used as the information asymmetry measuring criterion and by the use of model Vekatesh&Chiang 1986 it will be calculated according to below equation no. 8

$$SPREAD_{i,t} = \frac{AP - BP}{(AP + BP)/2}$$

SPREAD, I,t is domain of purchasing suggestive price differences and selling the company I in year t, AP is the average of thebest stock sale suggestive price for I company in year T, and BP is the average of the best purchasing suggestive price for company I in year T

After gathering information for research hypothesis testing, first information at the end of each year, all sample companies based on the information asymmetry are sorted and categorized and then they are divided in to 5 divisions. In this categorization, the higher step and first step orderly are attributed to companies with high and low rate of information asymmetry, then for testing the research hypothesis, the parallel equation system is used based on the testing about the Mishkin Likelihood, 1983. Equation of this system are named as suggestion equation and valuing equation. According to designed format of Mishkin 1983 for testing hypothesis the retioanal expectation in macro economy, first the predicted equation and valuing stimated without performing any limitation on  $\alpha_i^*$  و  $\alpha_i$  by 2SLS method. In the second phase After applying the same pricing rational ( $\alpha_i = \alpha_i^*$ ,  $i=1,2$ ) for evaluation of this subject that whether there is meaningful differences between mentioned equation or not, the LR( likelihood ratio) variable is used.

$$Ern_{i,t+1} = \alpha_0 + \alpha_1 CFO_t + \alpha_2 ACC_{i,t} + \varepsilon_{i,t+1} \quad \text{Equation 9}$$

$$SAR_{i,t+1} = \alpha_0 + \beta(Ern_{i,t+1} - \alpha_0^* - \alpha_1^* CFO_t - \alpha_2^* ACC_{i,t}) + \varepsilon_{i,t+1} \quad \text{Equation 10}$$

That in this model, EARN t+1 is the ration of net earning to the book value about the I companies total properties in T+1 year, Cfo I, t is the differences of net earning and accruals of companies I in t year, ACC I, t is the I company accruals in t year. SAR I, t+1 is the sized adjusted ratio for I company in t+1 year that is calculated according to equation 6 and  $\varepsilon_{i,t+1}$  is the model estimation error.

If  $\alpha_i$  and  $\alpha_i^*$  coefficients are not equal, the zero hypothesis is rejected based on the market efficiency. In Mishkin test, the zero hypothesis rejection, shows that the investors' expectation about the earning items continuity is different with their actual rate during time. To test the hypothesis it is expected that  $\alpha_2$  coefficient in valuation equation has meaningful differences with  $\alpha_2^*$  coefficient in prediction equation and the rate of this differences is increased by moving from low level to high step of information asymmetry by increasing the information asymmetry of portfolios. To evaluate differences meaningfulness between the  $\alpha_i$  and  $\alpha_i^*$  differences in prediction equation and valuing, we have used the variable K-DU with Q freedom degree based on the below equation.

$$\chi^2(\mathbf{q}) = 2n \log \left( \frac{SSR^c}{SSR^u} \right) \quad \text{Equation 11}$$

Q is the number of limitations applied for evaluation of market efficiency, n is the number of all observations,  $SSR^c$  is the total remained squares in second phase bound equation and  $SSR^u$  is the total remained squares in unbound equation in first Pt phase.

## 6- Model Assessment Methods

In this research for model analysis, the total datas has been used. Hence some companies during time are evaluated and analyzed. Before research hypothesis evaluation, we proceed to analyze the variables which are applied in equation system that are synchronized. The results from this evaluation, below table are obtained.

Table 4-6- the results of developed DICKY- FULLER test for evaluated variables

Variables	Source width without process		
	Variables	Critical rate	possibilities
SAR	-25.84	-2.8655	0.00
NDA	-22.75	-2.8655	0.00
DA	-25.84	-2.8655	0.00
CFO	-26.43	-2.8655	0.00
EARN	-26.29	-2.8655	0.00

As we realized from the table above, all variables are developed based on the DICKY-FULLER variable and they are in MANA level.

## 7- Research Hypothesis Test:

The hypothesis in this research is that the information asymmetry has effect on accrual anomalies. In order to test this hypothesis by using above models and applying combined datas to assess model we have evaluated the results. So based on the research method, we proceed to categorize 695 year related to the model into 5 steps according to the informational asymmetry. In this division, the fifth (high) step and first (low) step orderly are attributed to the companies with high and low rates about the information asymmetry. Then for testing research hypothesis the equation system are used based on the Mishkin Likelihood ration test, 1983. According to designed format of Mishkin 1983 for hypothesis test, the rational expectation in macro economy, first the equation 9 and 10 are estimated without any limitation on  $\alpha_i^*$  and  $\alpha_i$  by TSLS method. In second phase after applying rational pricing limit, ( $\alpha_i = \alpha_i^*$ ,  $i=1,2$ ) is considered then to evaluate this issue that whether there is meaningful differences between equation 9, 10, we use LR2 variable. The results of estimation about mentioned evaluation has been provided in below table.

The hypothesis evaluation obtained results

Category	Coefficient $\alpha_2$ T variable	coefficient $\alpha_2^*$ t variable	Coefficient $\alpha_2 - \alpha_2^*$ KY-DU variable (
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A <sub>1</sub>	0/2558 (4/2889)	0/1546 (2/9823)	0/1012 (13/7097)
A <sub>2</sub>	1/1425 (24/8573)	1/6878 (2/2809)	0/5453 (17/2310)
A <sub>3</sub>	1/5123 (21/8625)	2/4476 (5/7893)	0/9353 (30/3569)
A <sub>4</sub>	0/9989 (9/4131)	1/2121 (9/8587)	0/2132 (17/2054)
A <sub>5</sub>	0/8537 (5/4592)	0/7638 (2/4310)	0/0899 (7/2840)

According to obtained results from analysis of reversed datas in above table and also regarding the KY-DU variable rate that are mentioned in all categorizes more than the rate mentioned in table, it is cleared that in all categories, H<sub>0</sub> hypothesis is not confirmed according to their market efficiency and this subject proves the market impracticality. According to Mishkin test 1983, the zero hypothesis rejection proves this issue that investors expectation about continuity of earning items with actual are during time is different, therefore according to the table results it was identified that by increasing informational asymmetry ( from categories with information asymmetry from low to high), only in three first categories, the accrual anomalies ( the differences between the accrual coefficients in two equations of prediction and valuation ) are increased and in fourth and fifth category no meaningful relation is observed between the information asymmetry with accrual anomalies, therefore the research hypothesis is not confirmed based on "information asymmetry has positive effect on accrual anomalies "

## 8-Conclusion:

Based on the research hypothesis, informational asymmetry has effect on accrual anomalies. In order to evaluate this hypothesis the regression test is done through combined data method that the results are presented. Then the Mishkin test is used to show the market inefficiency and it was clarified that information asymmetry does not have effect on accrual anomalies. Generally we can deduct that the information asymmetry in all companies does not have effect on accrual anomalies, HAN and coworkers, 2013 in their research concluded that information asymmetry has positive effect on accrual anomalies but this research result is not conforming to mentioned research results.

It seems that the results obtained from this research are related to factors as below:

- Factors as under evaluating companies capital variation, the dividend to stock holders and benefits balanced and companies predicted benefits and drawbacks has have considerable effect on stock price fluctuations without daily domain limitation dominant on the stock price fluctuations and it leads to high variation on differences domain between the stock annual sale and purchasing suggestion. This item in model is not considered as the information asymmetry at this research, therefore the high differences between the annual sale and purchasing suggestive price for stock according to the model will not necessarily conformant to the information asymmetry which exist in stock.
- The profit balancing and predicted drawback (budget) of companies if occurred will have considerable effect on the stock price fluctuation without daily domain limitation dominant in stock price fluctuations and these items are not considered in model related to returns calculation applied in this research.
- The foreign exchange fluctuation is evaluated continuously in many years and leads to high variation in benefit (drawbacks) at under evaluation companies and according to this issue related to the profit (drawbacks) accounting standards, foreign currency exchange due to the effect of properties and debts, frequently is reflected based on other earning and none-operational costs in financial statements, therefore this article is not considered in equations used in accrual anomalies according to mentioned issues in this research.
- The inflation rate effect during years related to the time intervals at this research has not been regarded for applied models of this research.
- According to the recession condition dominant on the society in some part of time intervals which are evaluated in this research and increasing companies financial provision through financial facilities awarding by banks, the burdened financial costs by companies is increase significantly and this issue is occurred at the

financial facilities banking interest maximum rate implementation condition during 1390 and 1391. It should be noted that financial costs in this research equation are not applied.

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