

# Analyzing the Relationship between Earnings Transparency and Excess Return of the Companies in Tehran Stock Exchange

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**Abstract** - The purpose of this study is to evaluate the impact of earnings transparency on excess return in the companies listed in Tehran Stock Exchange. Therefore, historical data of 108 companies listed on the Stock Exchange within the period 2007-2012 were collected and then analyzed using descriptive statistics and panel data model. The results showed that increase in the earnings transparency will lead to excess returns. This means that there is a direct relationship between earnings transparency and excess returns. Then the results indicated that there is an inverse and significant relationship between the company value and excess returns and a direct and significant relationship between the systemic risk, firm size and growth rate with earned excess returns. Also the relationship between growth opportunities, negative stock returns, relative changes in operating cash flows, liquidity and the volatility of p/e ratio with earned excess returns is not statistically significant.

**Key words:** earnings transparency, excess return, Tehran Stock Exchange

## 1. INTRODUCTION

Nowadays, the capital markets have developed more than ever and gaining structured economic power beyond geographical boundaries has dominated capital markets. Inevitably, the capital markets are more susceptible to collusion, fraud and corruption by the trustees of the economy market. Corruption and fraud in the capital market occur in various forms, but what is more important and has the objective and subjective effects on the capital market are corruptions related to financial reporting. Fraudulent financial reporting is

what caused the bankruptcy of Enron and WorldCom companies at the beginning of the 21st century and caused a severe shock to the US capital markets. The governors of world capital markets today have consensus on this issue that transparency is the most important way to prevent this problem (Kolzik, 2004).

Among the data released by the companies, return is of high importance and is considered by many users. The transparency of information related to earnings in decision making can reduce the information asymmetry. Information asymmetry in capital markets increases the risk for investors and shareholders and a huge part of this information asymmetry is because of existence of inside information. Inside information that indicates a lack of transparency has led to the concern of the potential shareholders, however, the holder of this data can achieve more return than the ordinary returns and excess returns will be possible when there isn't clear and accurate information about the company's performance. In other words, ambiguity and uncertainty of information about the earnings leads to excess returns. Thus, one would expect that a negative relationship between transparency of information, particularly the company's earnings and obtained excess returns (Barta et al., 2013).

## 2. THEORETICAL BASES

### THE RELATIONSHIP BETWEEN EARNINGS TRANSPARENCY AND EXCESS RETURNS

Financial reporting is one of the main outcomes of accounting system that one of the main purpose of it is to provide information necessary for the economic

decisions regarding the assessment of the performance and profitability of the enterprise (Baress et al, 2005). The prerequisite for achieving this goal is measuring and presenting information in a way that makes it possible to evaluate the past performance and becomes effective in assessing the profitability and predicting the future activities of the enterprise (Francis et al., 2004). In other words, the number and frequency of financial reports regarding the details of the company's earnings, increase the awareness of the minor stockholders who have less access to information and increases transparency (Barta et, 2013). One of the main factors in the right decision making of the stockholders is the correct information related to subject of decision that if they are not properly processed, they will have negative consequences for the person or entity making the decisions. On the other hand, the type and mean of accessing to the information is important too (Hill and Leves, 2006). If the required information is asymmetrically distributed among the shareholders (unfair reporting to stockholders) it could have result differently in one particular situation. So the transparency of distribution of information should be carefully evaluated before even providing the information to investors and stakeholders (Stone, 2004). So when the information asymmetry regarding the gained earnings of a company increases, the intrinsic value of a company's stock will be different than the value that the investors in the capital market take to their shares. As a result, the real value of the stock will be different from the value expected by the shareholders (Mohentem and Rajibal, 2009). Kohingy (2011) concluded that the transparency of the information regarding the earnings will reduce asymmetric information and its effect on reducing asymmetric information over time will increase.

As mentioned above providing more transparent information reduces information asymmetry between the employer and the agent. This will result by reducing the information risk derived from mitigated information asymmetry to shareholders and it will considerably influence the expectations of shareholders. However, as mentioned before the excess return affected by various risks and correlated with them. Now it is expected that with greater transparency and less information risk excess return would effected.

### **3. RESEARCH BACKGROUND**

Hu et al. (2011), in a study entitled "forecasted cash flows, cost of capital and expected return " analyzed the relationship between the three variables. According to the company's earnings forecasts based on models and indicators related to forecasted cash flow, concentrate made to cost of capital and large sample of companies within 1968-2008 were analyzed. They found that the earnings forecasts are based on other forecasts related to Cash flow and based on factors relating to earnings. Also regarding the cost of capital and its relationship with the expected return they found that the index associated with expected return is the prediction of stock returns. They also found evidences confirming the significant relationship between the expected return properties and the forecasted cash flows and modified it based on the base model of capital cost.

Barva (2006) in his study has analyzed earnings quality metrics, using qualitative characteristics of financial information contained in the framework of the Financial Accounting Standards Board. The results of analyzing the components of each dimensions of earnings quality indicated that the companies with high relevance and reliability of earnings compared to companies with less relevance had lower reliability of earnings have higher return reaction coefficient and regression explanatory power/ higher earnings.

Hanlon (2005) examined the relationship between taxes and earnings quality and concluded that the stability of accruals and cash flows is lower for the companies with higher differences between the books and tax accounts.

Logy (2004) tested quality of earnings according to the conceptual framework of the Financial Accounting Standards Board and came to the conclusion that the quality of corporate earnings will improve when they rise the level of institutional ownership. In this case the constituent items of earnings will have higher relevance and reliability.

Chan et al (2004) analyzed the relationship between the information content of earnings quality with future stock returns and concluded that the accruals and future stock returns have a negative relationship.

Skaper and Vincent (2003), in their study analyzed the quality criteria to assess the quality of earnings and

indicated that the earnings quality in addition to conventional measures, depends on the type and amount of contracts based on accounting data.

Richardson (2003) analyzed the relationship between short-selling of shares and the earnings quality. He concluded that those who conduct the short-selling of shares won't use the accruals information about future returns. Moreover, short-selling shares in firms with high accruals are expensive.

Khoshtinat and Ismaili (2006) in a study analyzed the "relationship between earnings quality and stock returns listed companies in Tehran Stock Exchange" during 2000-2004. In this study, the quality of earnings, the amount of accruals, discretionary and non-discretionary component of accruals are the independent variable and the return is the dependent variable. Research hypothesis regression analysis shows that there is a weak relationship between stock returns and earnings quality.

Mashayekh and Ismaili (2006) examined the relationship between earnings quality and other corporate governance aspects including the percentage of ownership of members of the Board of Directors and number of non-executive directors in Tehran Stock Exchange. The results indicated a non-linear relation between accruals and the percentage ownership of board members.

Khajavi and Nazemi (2005) analyzed the relationship between the quality of earnings and stock returns with emphasis on the role of accruals. According to research the average stock returns are not affected by the amount of accruals and related components.

Saqafi and Kordestani (2004) investigated the relationship between earnings quality and the market reaction to changes in cash dividends. The results showed that investors in the Tehran Stock Exchange in response to changes in dividends do not consider the earnings quality of companies.

#### **4. RESEARCH OBJECTIVES**

In recent years, corporate abuse and fraud, incorrect financial reporting and poor management of the company that were important factors in recent decade's scandals have been gradually spread (Elliott et al., 2010). In Iran the lack of reasonable relationship

between profitability, price, and stock returns and excess returns for stocks in different sections indicate the lack of transparency in financial reporting firms, and this has led to repatriation of capital from the stocks. Although in recent years many effort has been made to increase the financial transparency and financial publishers by approving the rules especially the capital market Act in 2005 and the establishment of regulatory bodies, such as managing trustee overseeing auditors and financial reporting and Financial Institutions Supervisory Board of the Stock Exchange, however this issue is still at the beginning of its journey. So conducting research in the field of earnings transparency and gaining excess return can improve the framework and enrich the literature of the subject.

**Hypothesis: There is a significant relationship between earnings transparency and the excess return of the companies.**

#### **5. THE POPULATION AND SAMPLE**

The population of this research is all the companies listed in Tehran Stock Exchange during the period 2007-2012. Sampling method in this study is the elimination methods according to predetermined criteria after applying these criteria 108 companies were selected. Companies who had the following criteria were selected as the sample.

1. Based on the required data of 2007, companies that have been accepted up to March 2006 in Tehran Stock Exchange and they were not omitted from the list by the end of 2012.
2. During the period in question their shares are actively traded on the exchange.
3. To enhance the comparability of companies surveyed, their financial period must be ended on March 29th and do not have financial year changes during the period.
4. They should not be among the financial intermediation firms (investment, holding, leasing and banking and insurance) because they have different functions.
5. The required information should be available.

The samples of this study are presented in Table 1 based on the industry.

**TABLE 1**  
THE SAMPLES BASED ON THE INDUSTRY

**6. METHOD OF RESEARCH**

This research is an applied research based on its purpose and is a correlation analysis. Considering this matter that data being used are real and historical it can be classified among the post event and PAT researches. In this study, multiple regressions were used to test the hypotheses.

**THE RESEARCH MODEL AND THE VARIABLES**

**TESTING THE HYPOTHESIS**

To test the first hypothesis of the study the following model is applied. In this model, if coefficients (coefficients of the independent variables) are significant at the 95% confidence level, the hypothesis will be confirmed. According to a study conducted Barta et al (2013), the statistical model is estimated as follows:

$$RET_{i,t} - R_{F,M} = \alpha_0 + \beta_1 TRANS_{i,t} + \beta_2 DBTA_{i,t} + \beta_3 MVE_{i,t} + \beta_4 BM_{i,t} + \beta_5 Beta_{i,t} + \beta_6 NEG_{i,t} + \beta_7 \Delta OCF_{i,t-1} + \beta_8 SMB_{i,t} + \beta_9 HML_{i,t} + \beta_{10} FFMOM_{i,t} + \beta_{11} \Delta E_{i,t} / P_{i,t-1} + \epsilon_{i,t}$$

The study variables were classified into three groups:

1. The dependent variables
  - 1.1. Excess return.
2. Independent variables:
  - 2.1. Earnings transparency.
3. The control variables
  - 3.1. Debt ratio.
  - 3.2. Enterprise value
  - 3.3. Growth opportunities
  - 3.4. Systemic risk
  - 3.5. Dummy variable of negative stock returns
  - 3.6. Changes in operating cash flow ratio
  - 3.7. Company Size
  - 3.8. Liquidity
  - 3.9. Company growth rate
  - 3.10. The ratio of Returns Changes of each share to the price of each share

**OPERATIONAL DEFINITIONS OF DEPENDENT VARIABLE:**

Stock returns ( $RET_{i,t}$ ):  
A stock return of the financial year t is calculated as follows:

$$R_{it} = \frac{(P_{it} - P_{it-1}) + DPS + (P_{it} - 1000)A + P_{it}B}{P_{it-1}} * 100$$

Where:

- Pit = price of the stock at the end of year t
- Pit-1 = price of the stock at the end of year t-1
- DPS = dividend per share based on the number of shares at the beginning of period
- A = the percentage of the capital increase from earned cash
- B = increase percentage of the capital increase from the Retained earnings

**OPERATIONAL DEFINITIONS OF INDEPENDENT VARIABLES:**

Earnings transparency  
According to Barta et al (2013) earnings transparency is the dummy variable that if it is higher than 25% it is equal to 1 and otherwise it is equal to 0 and it can be calculated as follows:

$$TRANS_{i,t} = TRANSI_{j,t} + TRANSIN_{p,t}$$

Where:

$TRANS_{i,t}$  = equals the earnings transparency

$TRANSI_{j,t}$  = equals the revenue transparency

$TRANSIN_{p,t}$  = equals the net return

$$TRANSIN_{p,t} = \frac{\text{Firm revenue in the current year}}{\text{Book value of total assets}}$$

$$TRANSIN_{p,t} = \frac{\text{Net return in the current year}}{\text{Revenue in current year}}$$

Descriptive statistics of the variables are presented in Table 2.

**TABLE 2**  
**DESCRIPTIVE STATISTICS OF THE VARIABLES**

According to Table 2 the excess return in the sample firms equals 0.5630 and the minimum and maximum values equal 0.0000 and 4/4962. Evaluation of

skewness and kurtosis of the variables that must be 0 and 3 respectively to normalize the distributed variables, this indicates that this variable is not normally distributed. According to the descriptive statistics presented in Table 2, the average earnings transparency of the sample firms during the period of investigation has been positive and equal to 1.0091. Also the positive average ratio of the debt, enterprise value, growth opportunities, systemic risk and negative stock returns to the dummy variable equal to 0.0803, 3.4940, 0.6729, 0.9479 and 0.4521, respectively. The ratio of changes in cash flow, company size, liquidity, company growth rate and the ratio of price per share changes compared to the earnings per share according to the descriptive statistics presented in Table 2 equal the mean value of 0.5536, 5.9142, 0.6045, 0.3418 and 1.5742.

**7. INFERENCE STATISTICS**

The purpose of testing the hypothesis is to analyze that whether there is a significant relationship between earnings transparency and excess return. The statistical hypothesis is expressed as follows:

H0= There is no significant relationship between earnings transparency and excess return.

H1: There is a significant relationship between earnings transparency and excess return.

This hypothesis is estimated using the panel data model and if coefficient is significant at 95%, the hypothesis will be approved.

$$RET_{i,t} - R_{F,M} = \alpha_0 + \beta_1 TRANS_{i,t} + \beta_2 DBTA_{i,t} + \beta_3 MVE_{i,t} + \beta_4 BM_{i,t} + \beta_5 Beta_{i,t} + \beta_6 NEG_{i,t} + \beta_7 \Delta OCF_{i,t-1} + \beta_8 SMB_{i,t} + \beta_9 HML_{i,t} + \beta_{10} FFMOM_{i,t} + \beta_{11} \Delta E_{i,t} / P_{i,t-1} + \epsilon_{i,t}$$

$$\begin{cases} H_0 : \beta_1 = 0 \\ H_1 : \beta_1 \neq 0 \end{cases}$$

In order to determine whether a given model estimated using panel data is effective or not, the Chow test or the bound F is used to determine which method is more appropriate (fixed and random effects) for estimation (fixed diagnosis or random variation of the sectional units) the Hausman test is used. The results of these tests are presented in Table 3.

**TABLE 3: THE TEST RESULTS OF CHOW AND HAUSMAN TEST**

According to the results of the Chow test and P-Value (0000/0), the hypothesis was rejected at 95% and indicates that the panel data method may be used. Also according to the results of the Hausman test and P-Value 0.0165 which is less than 0.05 the test hypothesis is rejected and the hypothesis is confirmed. The model is needed to be assessed using the fixed effects. In classical regression assumptions analysis the results of (J-B) test results indicate that the residuals of the estimation model for research have normal distribution at 95% as the probability of the test (0.0596) is greater than 0.05. Also, due to the importance of Borsch- Pagan test which is lower than 0.05 (0.0000) the null hypothesis is rejected and it could be said that the model has variance lack of homogeneity. In this hypothesis the generalized least squares estimation method (GLS) is used. In Autocorrelation test the model remains associated with the use of Durbin Watson statistic (DW) the DW statistic is between 1.5 and 2.5 and it can be concluded that the residuals are independent. Moreover, since the level of the encoded test is greater than 0.05 (0.1147) thus the null hypothesis of this test based on the linear model is verified and the model does not have the specified error. The summary of the above results are given in table (4).

**TABLE (4): TEST RESULTS OF THE STATISTICAL ASSUMPTIONS**

According to the results of Chow and Hausman tests and test results of the statistical assumptions of the classical regression the research model is estimated as constant effects using panel data. The results are presented in table 5. The estimated figure using the 7 Eviews software will be as follows:

**TABLE (5): FIRST HYPOTHESIS TEST RESULTS USING FIXED EFFECTS**

Considering the significance of the model since the value of the F statistics is smaller than 0.05 (0.0000) the significance of the model is confirmed at 95%. The determining factor also suggests that 87.17% of the



excess return is confirmed by the variables in the model.

Considering the significance of the coefficients based on the results indicated in table 5, since the probability of the t statistic for the earnings transparency variable coefficient is less than 0.05 (0.0244) therefore a significant relationship between the earnings transparency and excess return is confirmed at 95%. Thus the second research hypothesis is accepted and it can be said with 95% confidence that there is a significant relationship between earnings transparency and excess return. The positive coefficient of this variable (0.0051) suggests a direct relationship between earnings transparency and excess return so that by 1 unit increase in transparency the return is increased 0.0021. So based on the analyses about the second hypothesis it can be concluded that there is a direct significant relationship between earnings transparency and excess return.

#### Conclusion

Considering the significance of the model since the probability of F statistics is smaller than 0.05 (0.0000) the significance is approved at 95%. Determining factor of model also suggests that 87.17% of the excess return is defined by the variables in the model. Analyzing the significance of the coefficients based on the since the

probability of the t statistic for the earnings transparency variable coefficient is less than 0.05 (0.0244) therefore a significant relationship between the earnings transparency and excess return is confirmed at 95%. So the research hypothesis is accepted and it can be said with 95% confidence that there is a significant relationship between earnings transparency and excess return. The positive coefficient of this variable (0.0051) suggests a direct relationship between earnings transparency and excess return so that by 1 unit increase in transparency the return is increased 0.0021. So based on the analyses about the second hypothesis it can be concluded that there is a direct significant relationship between earnings transparency and excess return.

It can be concluded that the higher reported return provides gaining higher return. This can be interpreted that in Iran stock exchange the detailed analysis of the company's financial statements may lead to gain more return this is more significant in case of higher transparency. Earnings transparency facilitates more detailed analysis in order to achieve greater return in this way there will be higher incentives to buy the stocks and cheaper financing will be provided.

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**TABLES:**

**TABLE 1**  
**THE SAMPLES BASED ON THE INDUSTRY**

Code <sup>1</sup>	the industry	Sample
10	Mining of coal	1
13	Mining of metal ores	5
14	Mining other materials	1
15	kinds of food and beverage products	7
17	Textile	1
23	coke, refined petroleum and nuclear fuel	2
24	Chemical materials and products	2
25	Rubber and plastic	2
26	Other non-metallic mineral products	14
27	Basic metals	12
29	Machinery and equipment	7
31	Electrical machinery and equipment	4
32	Manufacture of radio, television and communication equipment	1
34	Automotive and parts manufacturing	19
45	Industrial Contracting	1
60	Transport, Storage and Communication	2
63	Support activities for transportation	1
72	Computer and related activities	1
74	Technical Services	1
<b>Total</b>		<b>108</b>

<sup>1</sup> -The code of the industries are taken from the library of The Securities and Exchange Organization



**TABLE 2**  
**DESCRIPTIVE STATISTICS OF THE VARIABLES**

Variable	Number of observations	Mean	SD	Minimum value	Maximum, value	Skewness	Kurtosis
Excess return	684	0/5630	0/5632	0/0000	4/4962	2/139	6/951
Earnings transparency	684	1/0091	0/3997	0/0431	2/6596	0/950	2/589
Debt	684	0/0803	0/0932	0/0005	0/9020	3/064	14/130
The value of company	684	3/4940	0/3834	2/5478	4/6617	0/281	-0/515
Growth opportunities	684	0/6729	0/4818	0/0227	2/8586	1/187	1/376
Systemic risk	684	0/9479	0/2852	0/0589	1/8100	-0/577	0/707
Negative stock returns Dummy variable	684	0/4521	0/4980	0/0000	1/0000	0/193	-1/969
Changes in operating cash flow	684	0/5536	0/5277	0/0007	2/9344	1/396	2/056
Company Size	684	5/9142	0/6073	4/7761	8/0074	0/719	0/593
Liquidity	684	0/6045	0/2328	0/0052	1/6154	-0/484	0/012
Company growth rate	684	0/3418	0/3583	0/0000	2/8594	3/111	14/179
The ratio of price per share changes compared to the earnings per share	684	1/5742	0/6045	0/0618	3/5112	0/050	-0/424

**TABLE 3: THE TEST RESULTS OF CHOW AND HAUSMAN TEST MODEL (1)**

Test	Statistics	statistic value	DF	P-Value
Chow	<i>F</i>	3.4842	(529,107)	<b>0.0000</b>
Hausman	$\chi^2$	11.6549	11	0.0165

**TABLE (4): TEST RESULTS OF THE STATISTICAL ASSUMPTIONS**

Jarque-Bera statistic		Breusch-Pagan statistic		Durbin-Watson statistic	Ramsey statistic	
$\chi^2$	<i>P-Value</i>	<i>F</i>	<i>P-Value</i>	<sup>D</sup>	<i>F</i>	<i>P-Value</i>
1/6611	0/0596	6/0267	0/0000	1/96	81/9451	0/1147

TABLE (5): FIRST HYPOTHESIS TEST RESULTS USING FIXED EFFECTS

Dependent variable excess returns				
Views: 648 years - the company				
Variable	coefficient	t	P-Value	Relationship
Fixed component	-0/5157	-2/4640	0/0141	Negative
Earnings transparency	0/0051	1/2998	0/0244	Positive
Debt	-0/0133	-0/1674	0/8671	Negative
The company value	-0/1436	-2/9493	0/0033	Positive
Growth opportunities	-0/0177	-0/9113	0/3626	Negative
Systemic risk	1/3599	42/0108	0/0000	Positive
Negative stock returns Dummy variable	-0/0041	-0/4334	0/6649	Insignificant
Changes in operating cash flow	-0/0107	-0/9844	0/3254	Insignificant
Company Size	0/0572	3/0970	0/0021	Positive
Liquidity	-0/0134	-0/3825	0/7022	Insignificant
Company growth rate	0/0292	2/4500	0/0146	Positive
The ratio of price per share changes compared to the earnings per share	-0/0211	-1/4607	0/1447	Insignificant
Determining factor				0/8717
<i>F</i>				30/4648
<i>P – Value</i>				(0/0000)