A STUDY OF ACCRUALS QUALITY ON
RISK ASSESSMENT OF SECURITIES IN IRAN

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Abstract:

In recent years, there has been increasingly debate about the impact of quality of accounting information on cost of capital or expected return of stock. The focus of these discussions is the quality of accruals. In particular, two recent papers by Francis et al (2004, 2005) were impressive articles in this Field. The two papers were shown the quality of accruals have an inverse relationship between the costs of capital, it means low quality of accruals lead to cost of capital or expected return of stock. However, Core et al (2008) showed that accruals quality developed by Francis and his colleagues were not able to explain the volatility of stocks. Consequently, accrual quality as characteristics of accounting information can help predict future stock returns. Other similar studies, in this research relation between accrual quality and risk premium companies were investigated by data relating to 73 companies during 2009 and 2010. The results of the statistical analysis and hypotheses showed that the relationship did not exist between the quality of accruals and equity risk premium and there is no significant accruals quality and equity risk premium.

Keywords: Accruals Quality, Stock Risk Premium, Information Quality, Expected return of stock,

1. Introduction

Investors cannot make decision due to the high variability in options of investment and this choice is based on risk and return. Each person invests for reaching suitable return. Investors for reaching to expected return need necessary information from various sources. Therefore, financial statement help us to be able to choose our expected rate of return and risk. Accounting profit is one of the important information. Accounting profits are recognized on an accrual basis which is usually different amounts reported net operating profit and cash from operations and accruals. Investors, creditors, managers, and other fans of financial statements use earnings as a basis for investment decisions. Since, investors seeking to earn more profit and reduce investment risk. Hence, providing information related to earnings should be confident and be able to evaluate the performance and profitability of company. Results of some studies suggest that benefit accruals and its components affect corporate risk and return.

2. Literature review

Several prior studies have highlighted the relevance of the Dechow and Dichev (DD) (2002) model as the basis for an empirical measure of the quality of a firm's overall information environment. While these studies are not all specifically relevant to the research question in this paper, they do provide evidence of the usefulness of the empirical measure provided by the DD model. Accordingly, Investment decision research has focused on empirical examination of a theoretical model developed by Lambert *et* al. (2005) of the relation between quality of accounting information and a firm's cost of capital. The Lambert *et* al. (2005) model showed that poor quality information is related to coordination between firms and investors with respect to capital investment decisions and results in increased cost of capital. Francis *et* al. (2005) examined the relation between accrual quality and costs of debt and equity. They found that investors price securities in a manner that reflects awareness of accrual quality and, as a result, poorer accrual quality is associated with higher costs of debt and equity. Biddle and Hilary (2006) reported that accrual quality relates to firm level capital efficiency because of information asymmetry. In relation to capital markets, Chen *et* al. (2007) showed that accrual quality is a priced information risk

factor in a dividend change setting. Their empirical results suggested that the market's perception of information risk changes around dividend changes. An empirical study conducted by Ashbaugh-Skaife et al. (2006) who examined whether a variety of governance attributes explain firm credit ratings. Their study incorporated the DD accrual quality measure as a proxy for the degree of a firm's financial transparency, a desirable governance characteristic. Their empirical analysis showed that the accrual quality measure was significant and positively associated with a firm's credit rating. Doyle *et* al. (2007) examined the relation between accruals quality and internal control quality for a sample of US firms. Internal control quality was determined by whether sample firms disclosed a material weakness in internal control under the requirements of the *Sarbanes-Oxley Act*. Their general finding was that firms with weak internal control over financial reporting, as indicated by disclosure of a material weakness, had lower accruals quality. Doyle *et* al. (2007) also examined the effect of the potential severity of internal control weaknesses. They classified disclosed weakness as 'account-specific', that is weakness in control over specific account balances or transaction-level processes, or 'company-level' weakness where the disclosure indicated a fundamental problem with the firm's control environment. The results showed that 'company level' weaknesses had a greater negative impact on accrual quality. This finding was explained by the account specific weaknesses being 'auditable' and therefore representing less of a threat to the reliability of the financial statements. Ashbaugh-Skaife et al. (2007) extended this study by considering whether disclosed remediation of disclosed material weakness with internal controls was associated with improved accrual quality. The results suggested that firms which remediate disclosed material weakness, as indicated by a later unqualified audit report, exhibited significant improvements in accrual quality relative to firms that failed to remediate their control problems.

Investment in stock has higher risk than other investments in other types of securities. Therefore, the expected return on the investment is higher than other investments. Investors cannot use of priority over bankruptcy liquidation is not final, but they can use premium risk. Premium risk is the excess return to compensate risk for the investors (reward of risk) and when the person accepts risk of investment that receives more return on investment. Briefly, risk premium is excess of earnings for accepting the

risk by investor and if we have higher risk, we will have higher risk premium (Harbula, 2011).

Accruals are made for the reason that revenues and costs occur at the time of receiving or paying cash often varies and it leads to the increase of accruals and earnings. Therefore, accruals quality has an impact on stock returns, according to the investors are seeking returns, they should attention to the quality of accruals in assessment of expected return and returns are adjusted according to the quality of accruals (Chan *et* al, 2006). Investor's decisions are determined based on the disclosure information, manipulation of accruals under earnings management lead to lack of transparency and integrity of financial reports. Uncertainty and ambiguity in resources can provide a negative perspective of users and increase the risk of investment. Higher risk of investment need a higher expected return to compensate for the risk accepted by the investors (Wei, 2008).

Poorer AQ is associated with larger costs of debt and equity. This result is consistent across several alternative specifications of the AQ metric. They also distinguished between accruals quality driven by economic fundamentals (innate AQ) versus management choices (discretionary AQ). Both components have significant cost of capital effects, but innate AQ effects are significantly larger than discretionary AQ effects (Francis *et* al. 2005). In addition, Accruals quality, are negatively associated with both firm underinvestment and overinvestment. The relation between financial reporting quality and underinvestment is stronger for firms facing financing constraints, consistent with the argument that financial accounting information can reduce the information asymmetry between the firm and investors. Verdi realized that the relation between financial reporting quality and investment efficiency is stronger for firms with low quality information environments (Verdi, 2006).

Sloan (1996), in his study showed that cash flow has longer effects on earnings compare to accruals and significant relationship exists between accruals and return of stock. Fama and French (1993), the relationship between accruals quality and information risk according to three factors of size, the ratio of book value to market value and risk premium of market. The results show that positive and significant correlation between accruals and accruals quality and it suggests that accrual quality is a positive risk factor. Chan *et* al (2006) examined the relation of accruals and future stock

returns. They showed that companies' higher accruals are facing with decrease of stock returns in the period after reporting of financial information. Core *et* al (2008), to examine whether accruals quality can be considered as a priced risk factor. Correlation yields with accruals quality factor and the risk factors in Fama and French's model (including market risk premium, the ratio of book value to market value and firm's size) was tested and the results indicate that accruals quality cannot be a risk of pricing and accruals quality as the risk factors cannot be effective in predicting of risk premium. Ogneva (2008), in his research investigates the relationship between stock returns and accruals quality and he concluded that the significant association exists between the quality of accruals and future stock returns. Lacina *et* al (2009) in the study showed that firms with lower accruals compare with firms with higher accruals have lower stock returns ant they concluded that firms with lower accruals have less risk. Mashrwala (2011) investigates accruals quality and return in different months of year. His research shows that the quality of the relationship between accruals and returns is stronger in January than any other month of the year and the effects of accruals quality on stock returns is observed in the first 5 days of trading in January. Lobo *et* al (2012), presented evidence that analyst coverage increases the reduce of accruals and shows that lower accruals quality provides the opportunity for analysts to use the personal information and predicting of lower accrual quality has more private information.

Gray *et* al (2009) re-examines the interplay of accruals quality, information risk and cost of capital in Australia, where a number of important institutional and regulatory differences are hypothesized to affect the relation between accruals quality and cost of capital. The results suggest that, while accruals quality affects the cost of capital for Australian firms, some salient differences exist. In contrast to findings for US firms, the costs of debt and equity for Australian firms are largely influenced by accruals quality arising from economic fundamentals (i.e., innate accrual quality) but not discretionary reporting choices (i.e., discretionary accrual quality). This finding is consistent with our predictions based on the Australian institutional and regulatory environment. In addition, using both the asset pricing tests in Francis *et* al. (2005) and Core *et* al. (2008), we provide evidence consistent with accruals quality being a priced risk factor.

3. Accruals Quality Measures

Some researches use the measure of accrual estimation error developed in Dechow and Dichev (2002) and modified in McNichols (2002) and Francis et al. (2005) as our main measure of accruals quality. This measure defines the quality of accruals as the extent to which they map into past, current, and future cash flows. We assume that this measure can capture the effect of internal control on accruals quality for two reasons. First, a large number of disclosed material weaknesses are related to specific accounts ((e.g., inventory (Ge and McVay 2005)). These specific accounts could have estimation errors that will be captured by this measure. For example, if the inventory account is overstated, the obsolete inventory will not result in cash inflows in the next period, resulting in a low correlation between the accrual and realized cash flows. Second, compared to other measures of accruals quality, the measure in Dechow and Dichev (2002) does not rely solely on earnings management or assumptions related to market efficiency (e.g., value-relevance). This measure can capture both biased "discretionary" accruals and unintentionally poorly estimated accruals, which we predict will be the result of an internal control system with material weaknesses.

3.1. Alternative Measures of Accruals Quality

To shed light on the generalizability of our results for AQ, we examine two other commonly used measures of accruals quality: (1) the absolute value of performance-adjusted abnormal accruals (Kothari *et* al. 2005), and (2) the absolute value of the residual from the modified Dechow and Dichev (2002) model. The results are qualitatively similar to those for AQ i.e., there is no annual premium in both cases, both proxies predict higher abnormal returns only in January, and the January premium in both cases is increasing in tax loss selling. Thus, our results do not appear to be specific to the modified Dechow and Dichev (2002) AQ measure, but call into question the risk status of accruals quality in general.

4. Research methodology
4.1. Hypotheses

This study examines the impact of accruals quality portfolio focuses on assessment of risk. The quality of accounting in general and accrual

quality more specifically have impact on excess of return and cost of capitals. Research in Francis *et* al (2005), suggesting that accruals quality is a priced risk factor that can explain increase of return's stock compare with free return risk. But, Core et al, (2008) criticized research of Francis and colleagues and suggest that the quality of accruals as a proxy for information risk; is not a risk priced factor. The discussions following hypothesis is formulated:

H_1: A significant relation exists between accruals and equity risk premium

The sample is included all of companies listed in Tehran Stock Exchange, which have following conditions:

1 - Their trading must not be halt over three months.

2- The entities should not change their financial periods.

3 - The Company must not be brokerage and financial institutions.

4 - The entities' availability of information is required.

Process variables and hypothesis testing:

4.2. Independent variable

Accruals quality:

In this study, measurement of accruals based on the modified model Dechow and (2002) Dichev that link current accruals to cash flows from operations in the last period, current, and future**.**

$$TCA_{j,t} = \beta_{0,j} + \beta_{1,j} CFO_{j,t-1} + \beta_{2,j} CFO_{j,t} + \beta_{3,j} CFO_{j,t+1} + \beta_{4,j} \Delta Rev_{j,t} + \beta_{5,,j} PPE_{j,t} + u_{j,t}$$

$TCA_{j,t=}$ Total current accrual is calculated by The difference between current assets except cash and current liabilities except short-term debt in between year of t and t-1. Residuals of the regression indicates accrual and standard deviation of the residuals shows a measure of accruals that higher accrual is defined as lower quality.

$$TCA = (\Delta CA - \Delta CASH) - (\Delta CL - \Delta STDEBT)$$

ΔCA: changes in current assets

$\Delta CASH$: changes in cash

ΔCL: Changes in Liabilities

$\Delta STDEBT$: Changes in short term debt

$CFO_{j\,t}$: Cash flow from operations divided by average total assets

ΔRev: change in net revenue

PPE: Gross value of property, machinery and equipment

PPE Gross value of property, machinery and equipment

4.2. Dependent Variable:

Risk Premium: Equity risk premium is calculated by Gordon's model (1962):

$RP_{it} = E\ (R_{it} - RF_t)$

RP_{it} = Risk premium in *t* year

ER_{it} = Expected rate in *t* year

RF_t = Free risk in *t* year

4.3. Control variables

A) *LEV* = Financial Leverage (Ratio of total debt to total assets).

B) *BE / ME* = Ratio of book value to market value.

C) *SIZE* = (logarithm of total assets)

5. Test research hypothesis:

In this study, the number of variables in the following regression model is used to test the hypothesis.

$$RP_t = \beta_0 + \beta_1 AQ_{it} + \beta_2 (BE/ME)_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \varepsilon_{it}$$

Before describing hypotheses testing, regression model to calculate the accruals quality studies conducted during and after the calculation of accruals quality research's hypotheses.

Table 1. Regression models for calculation of accruals quality

$$TCA_{j,t} = \beta_{0,j} + \beta_{1,j} CFO_{j,t-1} + \beta_{2,j} CFO_{j,t} + \beta_{3,j} CFO_{j,t+1} + \beta_{4,j} \Delta Rev_{j,t} + \beta_{5,j} PPE_{j,t} + u_{j,t}$$

Variables	2011			2010		
	t	Sig	β	t	Sig	β
(Constant)	4.781	0.000	303899	0.518	0.606	44846
CFO_{t-1}	0.299	0.766	0.067	-2.698	0.009	-0.507
CFO_t	1.698	0.094	0.322	-7.102	0.000	-1.292
CFO_{t+1}	-5.950	0.000	-1.921	3.950	0.000	0.935
ΔRev	8.304	0.000	0.315	5.646	0.000	0.267
PPE	-1.420	0.160	-0.131	5.364	0.000	0.618
R Square			0.913			0.972
F			241.35			461.876
Sig			0.000			0.000
Durbin-Watson			1.648			1.946

The above table shows the results of calculating the correlation between current accruals and cash flows in 2010 and 2011, past, present and future changes in income and the gross value of property, machinery and equipment.

R- Squire in 2010 shows that 97/2% of current accruals are originated from changes of the variables. In according to coefficient of cash flows in 2010 and 2011 showed a significant and negative correlation between the model and other variables.

Coefficient in 2010 shows 91/3% of current accruals is originated by changes in the variables. Moreover, cash flows and changes in income had inversely, significant associated with other variables in the model, and other variables are excluded from the model in 2011.

Furthermore, P-value is less than 5%, therefore 95% efficiency model is appropriate. Then, the accruals quality measured by using the standard deviation of the remaining items on regression model (1):

**Table 2. Testing the hypothesis of a relation between accruals quality
and Equity Risk Premium**

$RP_t = \beta_0 + \beta_1 AQ_{it} + \beta_2 (BE/ME)_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \varepsilon_{it}$												
Final			Third			Second			First			**Level**
t	Sig	β	t	Sig	β	t	Sig	β	t	Sig	β	**Variables**
9.371	0.000	1.095	-0.032	0.974	-0.036	-0.100	0.920	-0.115	-0.069	0.945	-0.081	**Constant**
									0.144	0.886	3.067	$\beta_1 AQ$
2.148	0.034	0.028	1.797	0.075	0.024	1.829	0.070	0.025	1.773	0.079	0.024	$\beta_2 BE/ME$
						0.401	0.689	0.283	0.415	0.679	0.297	$\beta_3 LEV$
			1.009	0.315	0.190	0.893	0.374	0.173	0.826	0.410	0.166	$\beta_4 SIZE$
		0.036			0.044			0.045			0.045	**R Square**
		4.613			2.816			1.918			1.432	**F**
		0.034			0.064			0.130			0.227	**Sig**

Table 1 shows the backward regression, the regression model fitted to the four quarters, with the exclusion of the least important of all variables, parameters, and other variables in the model remain excluded from the model, this table show 3.6% of the changes in premium risk is of other volatility of the other variables. The final level by eliminating of variables, the only variable affecting the level of 95% as effective variables in the model remains.

In the final stage P-value = 0.034 and is less than 5%, thus 95% efficiency model is appropriate.

The final models of the regression model will be as follow:

$$RP_t = \beta_0 + \beta_1 (BE/ME)_{it} + \varepsilon_{it}$$

Therefore, the quality of accruals and equity Risk Premium correlation exists between 95% and this will be rejected.

6. Conclusion:

Balance between risk and return on investment are the basis of investor's decisions, they are they are seeking to assessment the expected future return by reported information. Whatever the quality of the

information provided was better, uncertainty in the estimation of expected return and risk would be reduced. Accruals has essential role for assessing the stocks. In fact, accrual quality defined as near the level of cash flows generated and earnings of the company, therefore, poor accruals quality reduces the degree of closeness and increase risk of investment. The result of this study provides evidence that no relation exist between accruals quality and equity risk premium in Tehran Stock Exchange. Since accruals can manipulate quality of earnings, thus, it is expected that possible because of the ability to affect the quality of earnings, accruals are expected market react to the evidence and there is a significant relation between accruals quality and equity risk premium. Moreover, based on the results, this study is inconsistent with those studies that concluded that accruals have important role in the description and explanation of capital cost, return and risk premium. It shows that, capital market is not efficient in Iran and it is due fact that lack of knowledge about accruals accounting of investors and users about accrual quality and its components. Investors and owners do not have knowledge about accruals accounting and accruals that is accepted by the Financial Accounting Standards Board. Therefore, Financial Accounting Standards states that one objective of financial reporting is to inform present and potential investors in making rational investment decisions and in assessing the expected firm cash flows.

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