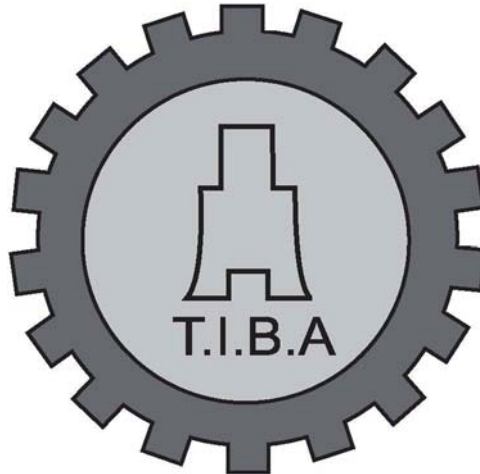




Academy of Taiwan Business Management Review

Volume 8 * Number 3 * December 2012

ISSN 1813-0534

The journal is listed in Cabell's, Ulrich's, and the Journal Rank List of Australia Research Council with ERA ID 40538. It is ranked "B" by ABDC (Australian Business Deans Council)

BOARD MEMBERS

Dr. Kent Tseng
Dr. Yi-Hsin Liu
Dr. Pao-Hsiang Lin
Dr. Wei-Hsiung Shen
Dr. Ghi-Feng Yen

EDITORIAL ADVISORY BOARD

Dr. Yi-Hsin Liu
Dr. Ali Salman Saleh
Dr. Jochen Wirtz
Dr. Chris Rowley
Dr. Robert-Leigh Compton
Dr. Wei-Hsiung Shen
Dr. Kurt April
Dr. Ghi-Feng Yen
Dr. Martin C. Kao



Impact of Accruals Quality on the Equity Risk Premium in Iran

Mahdi Salehi ,Ferdowsi University of Mashhad, Iran

Mohammad Reza Shoorvarzy and Fatemeh Sepehri, Islamic Azad University, Nyshabour, Iran

ABSTRACT

Investors believe accrual quality is defined as close of earning to the cash. Therefore, poor quality of accruals causes increased uncertainty of information and it will lead to rise of investment's risk. Thus, this study investigated relation between accruals quality and equity risk premium according to three potential factors of Fama and French (1993): 1- equity risk premium 2- size 3- rate of book value to market value. Following, 73 companies listed in Tehran Stock Exchange during 2005-2010 for hypothesis testing used time series data and two-stage cross-sectional regressions (2SCAR). The result of the study indicates that there is not significant relationship between accrual quality and equity risk premium.

Keywords:Earning Management, Investment, Accrual Quality, Equity Risk Premium, Discretionary Accrual

INTRODUCTION

This study examines the association between accrual quality and equity risk premium. Accrual quality is an issue of increasing importance to investors especially after recent financial scandals and crises. Furthermore, measuring accruals quality has developed in during decades. Literature suggests that managers will manipulate accruals opportunistically and it will lead to decline earnings quality. Scholars have defined discretionary accruals differently (DeAngelo et al. 1994; Jones 1991). Believed that higher quality accruals lead to reduce develop a measure reflecting variation of accruals that are not mapped into cash flows and uncertainty of predicting cash flows. Theoretical studies show that high accruals quality reduces cost of capital may be originated from the effect of reduced information asymmetry and reduced information uncertainty. Generally, findings indicate that reduction of information uncertainty (i.e. improved precision) reduces estimation risk and it will lead to reduces cost of capital. Some studies also suggest that better disclosure quality reduces information asymmetry, which decreases cost of capital. On the other hand, other studies argue that information asymmetry cannot be priced in a rational expectations setting and the effect of information asymmetry can be diversified away (Lambert et al., 2008; Hughes et al., 2007).

■ Accruals Quality

Accruals are used to adjust cash flows such that earnings reflect the performance of the firm. Dechow and Dichev (2002) argued that the role of accruals is to “shift or adjust the recognition of cash flows over time so that the adjusted numbers (earnings) better measure firm performance”. When a firm makes a sale, there is no difference between whether the firm gets cash at the time of in the future (adjusting for time value) or the firm gets the cash the sale from a performance standpoint. Although, there is uncertainty inherent when cash will be collected in the future because the exact amount of cash that will be collected is unknown. This uncertainty affords managers opportunities to manipulate earnings (Dechow and Dichev 2002; Healy and Wahlen 1999). Model of Dechow and Dichev (2002) assume that accruals are created in one-year reverse in the next year. As a result, the accruals (or the change in non-cash working capital) for the current period can be expressed as a linear function of current, lag, and lead cash flows.

■ Equity Risk Premium

The equity risk premium is defined as the reward that investors require to accept the uncertain outcomes associated with owning equity securities. The equity risk premium is measured as the extra return that equity holders expect to achieve over risk-free assets on average. Moreover, the equity risk premium is a key element in many costs of equity models. Fama-French three factor model all require an equity risk premium to compute a cost of equity. The higher the equity risk premium the higher the cost of equity.

LITERATURE REVIEW

Making investment decisions is based on the information that is disclosed, manipulating accruals by earnings management is led to the lack of transparency and integrity of financial reports. Thus, raise uncertainty and ambiguity in the perspective of suppliers and increase the risk of investing in the profit firms. Rising in capital risk will lead to increase risk of potential investors and eventually, higher expected rate is for compensating accepted risk. The results of the last two decades in developed countries suggests that variables such as size, rate of earnings to share price, rate of cash flow operation to price, rate of book value to equity, accrual have the most share in capital assets pricing model. Following Francis et al., (2005) innate component reflects the intrinsic features of a firm related to information uncertainty while the discretionary component represents noise or firms' opportunistic choices to either fool the market or to reveal private information (Francis et al., 2005).

Decision about investment is made by information which is disclosed, manipulating in accrual quality lead to lack of transparency and integrity of financial reports and also lead to higher risk in mind of suppliers and increases risk in profit firms. Higher risk lead to risk premium of potential investors and finally they demand for higher expected return to compensate their risk (Wei, 2008). Results of research in developed in recent decades indicate that variables like size, rate of earnings to price, rate of book value to equity, accrual and its component has the most share in explaining returns on the capital asset pricing model. These can lead to deformities market and accrual is one of factors can lead to create of deformities in risk and return (Kothari, 2001).

Fama and French (1993) investigated the relation between accruals and information risk. In time series regression, return of companies on another three factors such as: rate of book value to market value and equity risk premium. Their result shows that there is a significant and positive correlation between accruals and the three factors. Francis and et al., (2005) expressed if we have lower accrual quality, we will have higher cost of debt and capital. Following, low quality of accruals will lead to increase ambiguous information and increase of investment. Chan *et al* (2006), examined accruals related to future stock returns. They believed that companies who have higher accruals in the period following the reporting of financial reporting, they will have lower return of stock. Ogneva (2008) investigates the relationship between stock returns and accruals quality and the results show a significant association between the quality of accruals and future stock returns. Poor accrual quality firms have significantly higher returns, however, significantly lower returns during down markets. There is a significant interaction effect between the value premium and accrual quality, which only exhibits in the down markets (Chicherea et al., 2012). Yee (2006) presents an analytical model to indicate that effect of earnings quality on cost of capital cannot be significant in the absence of fundamental risk. In addition, he demonstrated that earnings quality affects the equity premium by magnifying fundamental risk. Chen et al (2008) provide empirical evidence that the pricing effect of accounting quality on the cost of capital increases with fundamental risk. These studies evoke the idea that accounting quality is associated with a firm's fundamental risk and that the pricing effect of accounting quality on the cost of capital may stem from fundamental risk and its related information risk captured by accounting quality.

Core et al., (2008) paid attention to previous research of Francis et al., and their result show that accrual quality cannot be a factor of priced risk and it indicates that accrual quality and risk factors cannot be effective factor for predicting risk premium. Gray et al., (2009) investigate accrual quality, informational risk and capital cost in Australian market. They used research of Francis et al., by accrual quality as replace of risk. The results indicate that accrual quality impact on capital cost; however, there are notable differences. In addition, accrual quality as risk factor is valuable. Mashrwala (2010) Investigated accrual quality and return in months of the year. The results show that relation between accrual and return is stronger in January and first 5 days of trading, the effect of accruals quality on stock return is observed. Lobo et al., (2012) illustrated that lower accrual quality provide opportunity of personal information for analysts and it can be concluded that low accruals quality is more specialized information.

METHODOLOGY

Based on all that has been said, we investigated the relation between accrual quality and equity risk premium. Empirical result of Biddle (1995) and Francis (2003) show that investors compare to other factor of performance have more dependent on earnings. Moreover, Fama and French (1993) illustrated that accrual quality and other factors of risk (market premium risk, size and rate of book value to market value) are important and accrual quality can be priced risk factor.

The research is inductive and correlative and is conducted on companies listed in Tehran Stock Exchange and our sample includes 73 companies which were operating in the primary market between 2005 and 2010.

- The entities should be listed before 2004.
- Date financial firms should lead to the end of March each year.
- The entities should be activated during 2005 to 2010.
- The entities should not change their financial periods.
- The entities' availability of information is required.

■ Hypotheses:

According to the research the hypotheses arise:

H1: There is a significant relationship between accrual quality and equity risk premium.

Independent Variable:

■ Accrual 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_{jt} : Cash flow from operations divided by average total assets

ΔRev : change in net revenue

PPE : Gross value of property, machinery and equipment

■ 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

■ Controlling Variables:

■ Market Factor:

$R_i - R_f$ = risk premium for company i ;

SMB = Size factor risk. Expected return of a portfolio of small stocks minus the expected return on portfolio of big stocks; and,

$$SMB = \frac{(S/L + S/M + S/H)}{3} - \frac{(B/L + B/M + B/H)}{3}$$

■ Value factor:

HML = Distress factor risk where distress is measured by book equity divided by market equity. Expected return of a portfolio of high book-to-market stocks minus the expected return of a portfolio of low book-to-market stocks

$$HML = \frac{(S/H + B/H)}{2} - \frac{(S/L + B/L)}{2}$$

The equity risk premium is one of three components in the Fama-French three factor model. These three factors include a size factor, a distress factor and a market risk factor (the equity risk premium)

S/L= Companies that are small in size and have lower ratio of book value to market value

S/M= Companies that are small in size and have middle ratio of book value to market value

S/H= Companies that are small in size and have higher ratio of book value to market value

B/L= Companies that are big in size and have lower ratio of book value to market value

B/M= Companies that are big in size and have middle ratio of book value to market value

B/H= Companies that are small in size and have higher ratio of book value to market value

■ Two-stage cross-sectional regressions (2SCSR):

Now, the study should be tested whether the accounting quality factor is a priced risk factor using a 2SCSR? Where excess returns are regressed on risk factor betas. Following asset-pricing literature, our tests examine whether AQ is a priced risk factor after controlling for the three Fama and French (1993) factors (the market risk premium ($RM - RF$), size (SMB), and book-to-market. In the first stage, we estimate multivariate betas from a single time-series regression of excess returns for a firm or a portfolio of firms ($R_{q,t} - RF_t$) on the contemporaneous returns to the Fama-French factors and the accounting quality factor:

For example, when we add the AQ factor to the Fama-French model, the multivariate betas are estimated using the following time-series regression:

$$R_{q,t} - R_{f,t} = b_0 + b_1(R_{m,t} - R_{f,t}) + b_2SMB_t + b_3HML_t + b_4AQ_{factor} + \epsilon_{q,t}$$

We compute standard errors from monthly cross-sectional regressions using the Fama and MacBeth (1973) procedure to mitigate concerns about cross-sectional dependence in the data. Because betas in the second-stage regressions are estimated betas (and not true betas), they may suffer from an error-in-variables problem:

$$R_{q,t} - R_{f,t} = \lambda_0 + \lambda_1 b_q R_{m,t} - R_{f,t} + \lambda_2 b_q SMB_t + \lambda_3 b_q HML_t + \lambda_4 b_q AQ_{factor} + \epsilon_t$$

For performing multiple regression analysis, we used backward method in SPSS. Backward method starts with a model containing all the explanatory variables and eliminates variables one by one, at each stage choosing the variable for exclusion as the one leading to the smallest decrease in the regression sum of squares. An F-type statistic is used to judge when further exclusions would represent a significant deterioration in the model.

It is noteworthy that the first stage of the model is done for each company in the specified period and after computing b_i for each company, regression coefficients are computed. Second stage is general regression model, and for hypothesis testing, we fit the general regression model. In this model λ_4 indicates the relationship between independent and dependent variables. Results of the

fitted regression model are shown in Table 1. It shows that about 9.20% of the variation in equity risk premium is explained by the model.

Table1: Summary of cross-sectional simple regression model

Model	Correlation coefficient	Coefficient of determination	Adjusted coefficient of determination
First stage	0.320	0.103	0.093
Second stage	0.320	0.102	0.095
Third stage	0.311	0.097	0.092
Final stage	0.303	0.092	0.089

Table 1 show that SPSS has fitted the regression model four times, so that in the fourth stage by eliminating no significant variables, the adjusted coefficient of determination obtained as 0.089. In the first stage all explanatory variables contributed in the model. In the second stage variable b3.HML and in the third stage variable b2.SMB was eliminated. In Table 2 results of analysis of variance, for testing that all coefficients are equal to zero, are shown. It shows that the significance level is equal to 0.000 so we conclude the fitted model is significant and we can use the independent variables in the model for predicting the risk.

$$\begin{cases} \mu_1 = \mu_2 = \dots = \mu_n \\ \mu_i \neq \mu_j \end{cases}$$

The p-value for the null hypothesis ($H_0 = 0$) which indicates the lack of any relation between the Impact of Accruals Quality on the Equity Risk Premium is less than 0.05. Therefore, the null hypothesis is rejected with a certainty of 95%. Accordingly, there is a significant relation between accruals quality and equity risk premium.

Table 2: Coefficients

Factor	d.f	R- square	Mean sum of squares	F-value	Sig
Regression	1	1214.908	1214.908	36.629	0.000
Error	363	12039.367	33.168		
Total	364	13254.775			

Table 3: Portfolio time-series regressions

Primary model	Coefficient	Sig	T-value	Standard Error
Intercept	0.876	0.004	2.891	0.303
$b_1.R_M - R_F$	0.288	0.000	6.114	0.047
$b_2.SMB$	0.059	0.177	1.354	0.044
$b_3.HML$	-0.007	0.768	-0.295	0.025
$b_4.AQ_{factor}$	0.032	0.097	1.665	0.019

T-test was used for independent groups in order to test the equality of average and the following results were obtained:

$$(R_q - R_f) = 0.876 + 0.288 (b_q.R_m - R_f) + 0.059 (b_q.SMB) - 0.007 (b_q.HML) + 0.032 (b_q.AQ_{factor}) + (\epsilon)$$

Table 4. Coefficient in final model

Final Model	Coefficient	T- value	Std. Error	Sig
Intercept	0.845	2.8	0.302	0.005
$R_M - R_F$	0.247	6.052	0.041	0.000

The following model is proposed to predict and provide future researchers:

$$R_q - R_f = 0.845 + 0.247 \times (R_M - R_F) + \epsilon$$

The aim of this study investigates relation of accrual quality and equity risk premium. After calculating accrual quality by standard deviation of residual of regression (1) during 2005-2010. Finally, the null hypothesis is rejected with a certainty of 95%. Accordingly, there is a significant relation between accrual quality and equity risk premium

CONCLUSION

The main objective of this research was investigating the impact of accrual quality on equity risk premium in regarding to three controlling factors: Market risk premium, size and ratio of book value to market value. However, accrual quality is the main factor for evaluating the quality of accruals and the other factors are used for reaching final results. Due to manipulation of accruals quality may affect earnings, thus, by increasing accrual, earnings will drop and shareholders may react by increasing risk premium. Hence, it is expected, there is a significant relationship between risk premium and accrual. Investors and other capital market players, such as analysts, evaluators, and makers require the information to make the right investment decisions. Furthermore, their main source of information is financial reporting and quality of accruals is measure of financial reporting. Investors and other groups' above mentioned using accounting information to estimate the risk and return and results of this study indicates that investors do not pay attention to accounting information as one of the main sources of risk. Accordingly, there is a significant relation between accruals quality and equity risk premium.

The results of this study is consistent of Core and et al., (2008) they used the quality of accruals as a proxy for information risk which is not priced and can not only affect the premium risk of company. On the other hand, the result of the study is inconsistent by studies of Francis et al (2005) and Fama and French (1993), they suggested that accruals quality is a priced risk factor and it can be

explained by increase of stock return relative to risk-free rate of return. In addition, there is positive and significant correlation between factors of accrual quality.

REFERENCES

- Biddle, G., G. Seow, and A. Siegel, (1995), "Relative versus incremental information content", *Contemporary Accounting Research*, Vol. 12, pp.1-23.
- Chan, K., L. Chan, N. Jegadeesh, and J. Lakonishok, (2006), "Earnings quality and stock returns", *Journal of Business*, 79(3), pp. 1041-1082.
- Chichernea, D., Holder, A., Wei, J (2012), "Connecting the dots: the accruals quality premium vs the value premium", *Managerial Finance*, Vol. 38(12):1106-1133
- Core, J., W. Guay, and R. Verdi, (2008), "Is accruals quality a priced risk factor?", *Journal of Accounting and Economics*, 47, pp. 2-22.
- DeAngelo, H, L. DeAngelo, and D. J. Skinner. (1994). "Accounting Choice in Troubled Companies". *Journal of Accounting and Economics* 17: 113-143.
- Dechow, p., and I. Dichev, (2002), "The quality of accrual estimation errors", *The Accounting Review*, 77, pp. 35-59.
- Fama, E. F., and K. R. French, (1993), "Common risk factors in returns stock and bonds", *Journal of Financial Economics*, 33, pp. 3-56.
- Francis, J., and L. Vincent, (2003), "The relative and incremental explanatory power of earning and alternative performance measure for returns", *Accounting Research*, 20, pp. 121-164.
- Francis, J., P. Lafond, P. Olsson, and K. Schipper, (2005), "The market pricing of accruals quality", *Journal of Accounting and Economics*, 39, pp. 259-327.
- Gordon, M (1962): *The Investment, Financing, and Valuation of the Corporation*. Irwin, Homewood, IL.
- Gray, p., P. Koh, and Y. Tong, (2009), "Accruals quality information risk and cost of capital: Evidence from Australia", *Journal of Business Finance and Accounting*, 36, pp. 51-72.
- Healy, P. M., and J. M. Wahlen. (1999). "A Review of the Earnings Management Literature and Its Implications for Standard Setting". *Accounting Horizons* 13 (4):365-383.
- Hughes, J. S., L. Jing, and J. Liu. (2007). "Information Asymmetry, Diversification, and Cost of Capital". *Accounting Review* 82 (3):705-729.
- Jones, J, (1991), "Earnings Management during Import Relief Investigation", *Journal of Accounting Research*, Vol 29 (2): 193-228
- Kothari, s., (2001), "Capital market research in accounting", *Journal of Accounting and Economics*, 31, pp.105-231.
- Lambert, R., C. Leuz, and R. E. Verrecchia. (2007). "Information Asymmetry, Information Precision, and the Cost of Capital", *Working Paper*, University of Pennsylvania.
- Lobo, G. J., M. Song, and M. Stanford, (2012), "Accruals quality and analyst coverage", *Journal of Banking and Finance*, 36, pp. 497-508.
- Mashrwal, C. A., (2010), "The pricing of accruals quality: January vs. the rest of the year ", Available at: <http://www.ssrn.com>.
- Ogneva, M., (2008), "Accruals quality and expected returns: the importance of controlling for cash flow shocks" *Working paper*, Stanford University.
- Wei, K. C. J., and F. Xie, (2008), "Accruals capital investments and stock returns", *Financial Analysts Journal*, 64, pp. 34-44.