

Corporate Debt Financing and Earnings Quality

Hashem Valipour¹ and Mehdi Moradbeygi²

Abstract

The objective of this research is to study the relationship between corporate debt financing and earnings quality and also to find the dominance of positive influence of debt or negative influence of debt on earnings quality. The research data were collected from 81 firms listed in Tehran Stock Exchange (TSE), during the years 2005-2009. For testing the hypotheses, multiple regression analysis was used.

The results show that there is a negative and meaningful relationship between debt and earnings quality. Also with respect to introduction, in low level of debt, positive influence of debt dominant to negative influence of debt, then the results show that there is a positive and meaningful relation between debt and earnings quality in the firm With low debt. Moreover, with respect to introduction, in high level of debt, negative influence of debt dominant to positive influence of debt, then the results show, there is a negative and meaningful relation between debt and earnings quality.

JEL classification numbers: G39

¹ Accounting Department, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran,
e-mail: h.valipour@gmail.com

² Master of Accounting, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran,
e-mail: moradbaygi@gmail.com

Keywords: Debt Financing, Leverage, Earning Quality, Discretionary Accruals, Nondiscretionary Accruals.

1 Introduction

Earnings quality is an issue which was created after the recent scandal of companies like Enron, Harry Scarf, etc. Earnings quality emerged as an important measure of financial health for business units and can be used in financial markets (Forougi and Ahmadi, 2010). Khajavi and Nazemi (2005) divided earnings quality into three categories: earnings persistence, levels of accruals and profit that reflect a commitment to economic transactions. Earnings persistence means that the sustainability of current earnings. More earnings persistence is the ability to retain more profits; also the earnings quality of company is higher. Generally, when we use reported earnings to help the users to take better decisions, then the quality of earnings is better.

Mostly we use the profit for the preprojected future cash flows, because accruals of accounting are a key component of profit (Gosh and Moon, 2010). When the amount of accruals is greater, then the difference between profit and cash flows is also more (Zarif Fard & Nazemi, 2004). Obviously, the quality of earnings is high when there isn't any earnings management. Also because earnings can be decomposed into cash flows and accruals, several researchers use accruals quality to draw inferences about earnings quality, and they interpret earnings quality as an increasing function of accruals quality, e.g., Dechow and Dichev (2002), Francis et al. (2003) (Monem and Farshadfar, 2007).

Moreover, in the issue of debt, institution and economic enterprises, particularly activities in the industry need to have investments to survive production and development of the activities which will be provided from financial markets. The owners of firms require cash for purchases, production, sales and also other

expenses which will be provided from different methods. One way to prepare the needs is debt financing. In a related study, Grossman and Hart (1982) considered debt as an example of a precommitment or bonding device. Debt bonds managers' act in the interest of shareholders because of the desire to avoid bankruptcy, which in turn increases market value. They also offer three reasons why self-interested managers have incentives to issue debt to increase firm value. First, managers' salaries are often dependent on firm value through incentive schemes. Second, the probability of a takeover is low for firms with high market value because acquiring firms have to pay more. A third reason is that it is easier to raise capital for managers when firm value is high, which increases the opportunities for perquisite consumption. Similarly, Jensen (1986) views debt as a disciplinary instrument. Because contractual debt payments absorb free cash flows and reduce internal cash flows available for unprofitable investments, managers are unable to invest excess cash in negative net present value projects (positive effect of debt).

On the other hand, when the debt is high, due to different conflicts of agency between creditors and managers, managers try to interfere a role in the accounting reports to reduce the likelihood of violating debt obligations and creditors, resort to the contractual agreement which are mostly based on the financial accounting department, and this, leads to the expropriation of wealth (Watts and Zimmerman, 1986). Also agreements of creditors likes contractual obligations provide protection for lender loans and restrictions for the receiver (negative effect of debt).

This interpretation can be concluded that debt also has positive and negative effects. For low debt, companies have expected to cut fewer restrictions in order to reduce violating of debt obligations. Managers are also less likely to manipulate earnings to report the quality of earnings at low level, when the risk of violating commitment is low. So for low debts, liabilities and earnings quality are positively related, or there is a preference for positive effect of debt on negative effects of debt (Gosh and Moon, 2010).

In contrast, when companies have higher debts, managers have incentives to reduce the cost of their debt by reporting the quality of earnings at high level, but creditors may use options such as higher borrowing costs and asking for the rapid repayment of debt because the cost of violating of debt in companies is high. Managers use accounting options to prevent the violation of such obligations. Thus, in high levels of debt, the debt will negatively impact between debt and earnings quality, so it can be said that the negative effect of debt overcomes the positive effect (Gosh and Moon, 2010).

Accordingly like Gosh and Moon (2010), we hypothesized that earnings quality first increases and then declines with increasing debt levels. Because there is no theory guiding us on the inflection point, we let the data inform us on the debt level when the negative influence of debt outweighs the positive influence.

2 Literature Review

Defond & Jiambalvo (1994) and Deangelo et al. (1994) investigated earnings management with contracts of debt and debt financing. Their result showed that managers use earnings management to convinced creditors (to show desirable picture of company to reduce commitment of debt contracts).

Francis et al. (2005), investigated the relation between accruals quality and the cost of debt and equity capital for large sample of firms over the period 1970-2001. They investigated whether investor price accruals quality (AQ), their proxy for the information risk associated with earnings. Their results showed that poorer AQ is associated with larger cost of debt and equity. This result is consistent across several alternative specifications of AQ metric. They also distinguish between AQ driven by economic fundamentals (innate AQ) versus management choices (discretionary AQ).

Gupta and Piage Fields (2006) examined the relation between firms' debt

maturity structures and propensity to manage earnings. They concluded that (i) firms with more current debt were more susceptible to managing earnings, (ii) this relation was stronger for firms facing debt market constraints (those without investment grade debt) and (iii) auditor characteristics such as auditor quality and tenure helped diminish this relation. Overall, their results indicated that earnings management by firms is influenced by the relative amount of short term debt used in firms' capital structures.

Goodwin et al. (2009) examined short-term debt maturity, monitoring and accruals-based earnings management. They find that short-term debt is positively associated with earnings management consistent with some prior studies and the debt hypothesis. However, when they focus on high creditworthy (investment grade) firms they find a negative relation between short-term debt and earnings management, proxied by discretionary accruals, consistent with the debt monitoring hypothesis. They also found that among high creditworthy firms, the relation between short term debt and discretionary accruals was stronger in the lesser creditworthy firms, consistent with Myers (1997) argument that lenders of short term debt provide monitoring over management.

Ghosh and Moon (2010) investigated the relationship between two extensively researched areas, debt financing and the quality of earnings. They used accruals quality as a proxy for earnings quality. They found that the relationship was positive at low levels of debt and negative at high debt levels with an inflection point around 41%.

Liu et al (2010) examined whether firms manage earnings before issuing bonds to achieve a lower cost of borrowing. They found significant income-increasing earnings management prior to bond offerings. After controlling for various bond issuer and issue characteristics, they also found that firms that managed earnings upward issue debted at a lower cost. Their results are consistent with studies that report earnings management around equity issuance. Also the results indicated that, like equity holders, bondholders failed to see through the

inflated earnings numbers in pricing new debt.

Rodriguez-peres and Van Hemmen (2010) examined the relationship between debt, diversification and earnings management. They used panel estimation techniques to calculate discretionary accruals and to produce a better understanding of the nature of the relation between debt and earnings management. They concluded that marginal increases in debt provide incentives for managers to manipulate earnings, and diversification provides the needed context for this accounting practice to be possible.

Linck et al (2011) investigated whether earnings management could ease financial constraint. And also they hypothesized that if a firm is financially constrained but has positive NPV projects, it can use earnings management to signal positive prospects, enabling it to raise capital to make the investments. They concluded that financially constrained firms have significantly higher discretionary accruals in two quarters prior to investment compared to unconstrained firms.

Kim et al. (2011) examined the relation between debt covenants slack and real earnings management. They found that the overall level of real earnings management is higher when net worth covenant slack is tighter. Moreover they found that real earnings management was higher for borrowers that experienced increases in bankruptcy risk in the previous year.

3 Purposes and Research Hypotheses

Providing financial incentives, corporates have different stakeholders; one of the important stakeholders is creditors that motivated managers to monitor and limit their work. Banks, for example, require continuous monitoring of the company through maturity period and the demand for information with high quality, to reduce loan costs (Solvin, 1990). Also with limited capital markets, corporates have incentives to hold information with high quality, to reduce the cost of borrowing (Diamond, 1991). In this paper, we want to investigate the

relation between debt financing and earnings quality and also investigate the effects between kinds of financing and earnings quality. Then the assumptions are as follows:

Hypothesis 1: There is a meaningful relationship between debt and earnings quality.

Hypothesis 2: In low debt, there is a positive and meaningful relationship between debt and earnings quality.

Hypothesis 3: In high debt, there is a negative and meaningful relationship between debt and earnings quality.

4 Research Variables

4.1 Construct for Earnings Quality

The model that will be used in this research for earnings quality is the Kothari et al. (2005) model, Also TAC is a proxy for earnings quality.

$$TAC_{i,t} / A_{i,t-1} = a_{0it} (1 / A_{i,t-1}) + a_{1it} (\Delta ADJREV_{i,t} / A_{i,t-1}) + a_{2it} (PPE_{i,t} / A_{i,t-1}) + a_{3it} (ROA_{i,t-1} / A_{i,t-1}) + \varepsilon_{i,t} \quad (1)$$

4.2 Debt Financing and Earnings Quality

For the relation between Debt Financing and Earnings Quality (Residuals), we use regression (2):

$$\text{Residuals} = \beta_0 + \beta_1 \text{Debt} + \beta_2 \text{Operating cycle} + \beta_3 \text{Size} + \beta_4 \text{Sales}_\sigma + \beta_5 \text{Cash flow}_\sigma + \beta_6 \text{Losses} + \beta_7 \text{Cost of debt} + \beta_8 \text{Z-score} + \varepsilon \quad (2)$$

Table 1: Variables Measurement

Debt	the ratio of total (long-term and short-term) debt to total assets
Operating cycle	log of the sum of days accounts receivable and days inventory outstanding
Days accounts receivable	$360/(\text{Sales}/\text{Average accounts receivable})$
Days inventory outstanding	$360/(\text{Cost of goods sold}/\text{Average inventory})$
Size	log of the average of the beginning and ending total assets
Sales $_{\sigma}$ and Cash flow $_{\sigma}$	standard deviation of sales and operating cash flows scaled by average total assets
Losses	proportion of firm-years with negative earnings from years t-4 to t
Cost of debt	interest expense deflated by average total debt
Z-score	$1.2 \times (\text{Working capital}/\text{Total assets}) + 1.4 \times (\text{Retained earnings}/\text{Total assets}) + 3.3 \times (\text{EBIT}/\text{Total assets}) + 0.6 \times (\text{Market value of equity}/\text{Total liabilities}) + (\text{Sales}/\text{Total assets})$

4.3 Low Debt Financing and Earnings Quality

Regression for the relation between Low Debt Financing and Earnings Quality is:

$$\text{Residuals} = \beta_0 + \beta_1 \text{Debt Low} + \beta_2 \text{Operating cycle} + \beta_3 \text{Size} + \beta_4 \text{Sales}_{\sigma} + \beta_5 \text{Cash flow}_{\sigma} + \beta_6 \text{Losses} + \beta_7 \text{Cost of debt} + \beta_8 \text{Z-score} + \varepsilon \quad (3)$$

Notice that we use dummy variables (1) for low debt between scopes of 0 to 50 percent and dummy variables (2) for high debt between scopes of greater than 50 percent.

4.4 High Debt Financing and Earnings Quality

For testing the last Hypothesis, we use regression (4):

$$\begin{aligned} \text{Residuals} = & \beta_0 + \beta_1 \text{Debt High} + \beta_2 \text{Operating cycle} + \beta_3 \text{Size} + \beta_4 \text{Sales}_\sigma \\ & + \beta_5 \text{Cash flow}_\sigma + \beta_6 \text{Losses} + \beta_7 \text{Cost of debt} + \beta_8 \text{Z-score} + \varepsilon \quad (4) \end{aligned}$$

5 Statistics Population and Sample

The statistics population of this research is all of the corporates in Tehran Stock Exchange. Also we use disposal method for sampling. We selected samples that had the following qualifications:

- 1) For the purpose of homogeneity of the sample, companies should not be in capital investment and financing work,
- 2) Until the end, the Company's shares must be remain in stock Exchange,
- 3) Company information should be available.

6 Research Method

This research study is based on the size of the class and the method of application is descriptive method. In this study, to collect data historical method was used. The aim of this study for correlation test is determining the correlation or lack of it, and also determining the kinds of relationship between different levels of debt. To test the research hypothesis, comparative method of T-test was selected. In this study, descriptive statistics, correlation matrices and regression analysis of the data were applied.

7 Empirical Results

To test the research hypothesis, multiple regression models was used. Before testing the research hypotheses, we used regression testing by assumptions. These assumptions include:

- A. The random variable of errors has normal distribution;
- B. The errors variances are equal;
- C. The errors are independent.

The test was conducted and suggested that the assumptions were true.

Table 2: Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Residuals	486	-2.04023	0.789039	0.055199	0.332908
Debt	486	0.07781	1.506728	0.663493	0.191433
Dummy1	486	0	1	0.27	0.446
Dummy2	486	0	1	0.73	0.442
O.cycle	486	0.44151	3.414054	2.089281	0.317947
Size	486	4.561989	7.640682	5.637159	0.594224
Sales _σ	486	0.019213	0.989279	0.193039	0.134405
CFO _σ	486	0.005737	0.694209	0.075883	0.05054
Losses	486	0	0.8	0.06091	0.151672
COST.O.D	486	0	0.15715	0.050868	0.032087
Z-score	486	-1.66981	4.05304	1.498221	0.820881

Table 2 shows the test result about descriptive statistics. This test shows that the mean of earnings quality and debt are .055 and .663.

7.1 Test of Hypothesis 1:

Table 3 shows multiple correlation coefficients after adding variables, which has increased. Also coefficient of determination is .789 that shows the relation intensity between variables; also Durbin -Watson statistic in seven-variable model is 1.783 that indicates serial correlation between variables.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
dimension0 1	.721 ^a	0.52	0.519	0.230835	
2	.797 ^b	0.636	0.634	0.201399	
3	.848 ^c	0.719	0.718	0.176895	
4	.882 ^d	0.777	0.775	0.157801	
5	.888 ^e	0.789	0.786	0.153827	1.783

a. Predictors: (Constant), Sales_σ
b. Predictors: (Constant), Sales_σ, Ocycle
c. Predictors: (Constant), Sales_σ, Ocycle, Size
d. Predictors: (Constant), Sales_σ, Ocycle, Size, Z-score
e. Predictors: (Constant), Sales_σ, Ocycle, Size, Z-score, Debt
f. Dependent Variable: Residuals

The results presented in Table 4 show test related to overall significance of independent variables coefficient. The results indicate that the coefficient of variables before and after the addition of variables, using the F statistic at confidence interval of 95% is significant.

	1	2	3	4	5
F	524.761	421.089	411.919	419.402	358.315
Sig.	.000 ^a				

a. Predictors: (Constant), Sales_σ, O.cycle, Size, Z-score, Debt
b. Dependent Variable: Residuals

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	-0.885	0.099		-8.95	0.000		
Sales _σ	-1.037	0.068	-0.419	-15.29	0.000	0.587	1.703
O.cycle	0.364	0.024	0.348	15.205	0.000	0.842	1.188
Size	0.136	0.012	0.243	11.34	0.000	0.958	1.044
Z-score	-0.152	0.012	-0.376	-12.236	0.000	0.466	2.145
DEBT	-0.24	0.047	-0.138	-5.116	0.000	0.606	1.65

a. Dependent Variable: Residuals

The final result to test the hypothesis 1 is in Table 5, and the regression equation is as bellow:

$$\text{Residuals} = -.885 - .24\text{Debt} + .364\text{Operating cycle} + .136\text{Size} - 1037\text{Sales}_{\sigma} - .152\text{Z-score} + \varepsilon$$

Hypothesis H₁ is: “There is a relation between debt financing and earnings quality” and the above table was used to test it. As what we observe in Table 5, the hypothesis H₀ at significant level of 95% is rejected (note that the value of α is larger than the sig, or $0.05 > 0.000$). In other words, there is a significant relationship between debt and earnings quality.

7.2 Test of Hypothesis 2:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
dimension0 1	.721 ^a	0.52	0.519	0.230835	
2	.797 ^b	0.636	0.634	0.201399	
3	.848 ^c	0.719	0.718	0.176895	
4	.882 ^d	0.777	0.775	0.157801	
5	.887 ^e	0.786	0.784	0.154633	1.753

a. Predictors: (Constant), Sales_σ
b. Predictors: (Constant), Sales_σ, O.cycle
c. Predictors: (Constant), Sales_σ, O.cycle, Size
d. Predictors: (Constant), Sales_σ, O.cycle, Size, Z-score
e. Predictors: (Constant), Sales_σ, O.cycle, Size, Z-score, Dummy1
f. Dependent Variable: Residuals

Table 6 shows multiple correlation coefficients after adding variables, which has increased. The coefficient of determination in this table is .786 which shows the relation between variables, also Durbin Watson statistic in fifth-variable model is 1.753 that indicates serial correlation between variables.

	1	2	3	4	5
F	524.761	421.089	411.919	419.402	353.588
Sig.	.000 ^a				

e. Predictors: (Constant), Sales_σ, O.cycle, Size, Z-score, Dummy1
f. Dependent Variable: Residuals

The results presented in Table 7 shows test related to overall significance of

independent variables coefficient. The results indicate that the coefficient of variables before and after the addition of variables, using the F statistic at confidence interval of 95% is significant.

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	-1.056	0.091		-11.565	0.000		
Sales _σ	-1.095	0.065	-0.442	-16.925	0.000	0.652	1.535
O.cycle	0.348	0.024	0.333	14.638	0.000	0.861	1.161
Size	0.138	0.012	0.246	11.455	0.000	0.962	1.039
Z-score	-0.137	0.011	-0.338	-12.238	0.000	0.582	1.717
Dummy1(L.D)	0.081	0.018	0.109	4.572	0.000	0.785	1.274

a. Dependent Variable: Residuals

The final result to test the hypothesis 2 is in Table 8, and the regression equation is in bellow:

$$\text{Residuals} = -1.056 + .81 \text{Debt Low} + .348 \text{Operating cycle} + .138 \text{Size} - 1.095 \text{Sales}_{\sigma} - .137 \text{Z-score} + \varepsilon$$

We use hypothesis H₁ in low debt, (there is positive and meaningful relation between low debt and earnings quality) and upon outcome to testing the Hypothesis 2.

According to what we observe in Table 8 at significant level of 95%, we can say that the relation between low debt and earnings quality is significant. Also the variable coefficient of low debt (.081) indicates a positive relationship, then we can say the hypothesis H₀ is rejected, in other words, at low levels of debt financing, there is a positive and significant relationship between debt and earnings quality.

7.3 Test of Hypothesis 3:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
dimension0 1	.721 ^a	0.52	0.519	0.230835	
2	.797 ^b	0.636	0.634	0.201399	
3	.848 ^c	0.719	0.718	0.176895	
4	.882 ^d	0.777	0.775	0.157801	
5	.887 ^e	0.786	0.784	0.154694	1.751

a. Predictors: (Constant), Sales_σ
b. Predictors: (Constant), Sales_σ, O.cycle
c. Predictors: (Constant), Sales_σ, O.cycle, Size
d. Predictors: (Constant), Sales_σ, O.cycle, Size, Z-score
e. Predictors: (Constant), Sales_σ, O.cycle, Size, Z-score, Dummy2
f. Dependent Variable: Residuals

Table 9 shows multiple correlation coefficient after added variables, which has increased. Also coefficient of determination is .786 that shows the relation between variables, and Durbin Watson statistic in eight-variable model is 1.751 that indicates serial correlation between variables.

	1	2	3	4	5
F	524.761	421.089	411.919	419.402	353.234
Sig.	.000 ^a				

a. Predictors: (Constant), Sales_σ, O.cycle, Size, Z-score, Dummy2
b. Dependent Variable: Residuals

The results presented in Table 10 show test related to overall significance of

independent variables coefficient. The results indicate that the coefficient of variables before and after the addition of variables, using the F statistic at confidence interval of 95% is significant.

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	-0.978	0.094		-10.364	0.000		
Sales _σ	-1.098	0.065	-0.443	-16.995	0.000	0.654	1.529
O.cycle	0.348	0.024	0.332	14.62	0.000	0.861	1.161
Size	0.138	0.012	0.247	11.504	0.000	0.964	1.037
Z-score	-0.136	0.011	-0.335	-12.231	0.000	0.592	1.688
Dummy2(H.D)	-0.081	0.018	-0.107	-4.529	0.000	0.799	1.251

a. Dependent Variable: Residuals

The Table 11 shows the final results according to the relation between debt in high levels and earnings quality, also the regression equation is as bellow:

$$\text{Residuals} = -.978 - .081 \text{Debt High} + .348 \text{Operating cycle} + .138 \text{Size} - 1.098 \text{Sales}_{\sigma} - .136 \text{Z-score} + \varepsilon$$

To test hypothesis 3, we use hypothesis H₁ (in high levels of debt, there is a negative and meaningful relation between debt and earnings quality) and the outcome of SPSS18 software. Regarding what we observe in Table 11 at significant level of 95%, we can say that the relation between high levels of debt and earnings quality is significant. Also the variable coefficient of high debt (-.081), indicates a negative relationship, then we can say the hypothesis H₀ is rejected, in other words, at High levels of debt financing; there is a negative and significant relationship between debt and earnings quality.

8 Conclusions

In this study, three similar hypotheses were proposed, for the first hypothesis, we investigated the relationship between debt financing and earnings quality and the results show that there is a significant relationship between two variables.

For the second hypothesis, we investigated the relationship between low levels of debt financing and earnings quality. The results in this hypothesis show that there is a positive and significant relationship between the two variables; therefore we can say that debt can have a positive influence on earnings quality because managers are likely to use their accounting discretion to provide private information about the firms' future prospects to lower financing costs. Also the result of this research is similar to those of several studies, like Ghosh and Moon (2010).

For the third hypothesis, we investigated the relationship between high levels of debt financing and earnings quality. The results show that there is a negative and significant relationship between the two variables. It can be concluded that firms aggressively use accruals to manage earnings to avoid covenant violations and reduce the cost of financing. Also the result of this research is similar to papers like Defond and Jiambalvo (1994), Deangelo and Sakiner (1994), Francis et al. (2005), Gupta and Piage Fields (2006), Goodwin et al. (2009), Ghosh and Moon (2010), Rodriguez-peres and Van Hemmen (2010), Linck et al. (2011) and Kim et al. (2011).

The practical implication based on research results is that firms prepare the information for debt and accruals in five years (year t to $t-4$), that users like analysts and creditors prepare proper statistical model of time series to make better decisions. We recommend researchers use other models of earnings quality like Jones, Dechow and Dechow, etc. in future studies. Also researchers can use other aspects of debt (e.g. ratio of debt to equity or ratio of interest to income).

References

- [1] S.h. Khajavi and A. Nazemi, The Relation between Earnings Quality and Stock Returns, with Emphasis on the Role of Accrual Figures in the Tehran Stock Exchange, *Iranian Accounting and Auditing Review*, **12**(40), (2005), 37-60.
- [2] A. Zariffard and A. Nazemi, The Role of Accounting Earnings and Cash Flows in Measuring the Performance of Firms Listed in Tehran Stock Exchange, *Iranian Accounting and Auditing Review*, **12**(37), (2004), 93-119.
- [3] D. Foroughi and N. Ahmadi, The Relationship between Accruals Quality and Composition of Shareholders in Firms Listed in Tehran Stock Exchange, *Iranian Journal of Accounting Research*, **2**(5), (2010), 90-103.
- [4] H. DeAngelo, L. DeAngelo and D.J. Skinner, Accounting Choice in Troubled Companies, *Journal of Accounting and Economics*, **17**(1-2), (1994), 113-125.
- [5] P.M. Dechow and I.D. Dichev, The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors, *The Accounting Review*, **77**, (2002), 35-59.
- [6] M.L. Defond and J. Jiambalvo, Debt Covenant Violation and Manipulation of Accruals, *Journal of Accounting and Economics*, **17**, (1994), 145-176.
- [7] D.W. Diamond, Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt, *Journal of Political Economy*, **99**, (1991), 689-721.
- [8] J. Francis, R. LaFond, P. Olsson and K. Schipper, The Market Pricing of Accruals Quality, *Journal of Accounting and Economics*, **39**, (2005), 295-327.
- [9] A. Ghosh and D. Moon, Corporate Debt Financing and Earnings Quality, *journal of business finance & accounting*, **37**, (2010), 538-559.
- [10] J. Goodwin, F.A. Gul and S. Fung, Short-Term Debt Maturity, Monitoring and Accruals-Based Earnings management, *www.ssrn.com*, (2009).

- [11] S.J. Grossman and O.D. Hart, *Corporate Financial Structure and Managerial Incentives*, J.J.McCall (ed.), the Economics of Information and Uncertainty, University of Chicago Press, 1982.
- [12] M. Gupta and L. Paige Fields, Debt Maturity Structure and Earnings Management, *www.ssrn.com*, (2006).
- [13] M. Jensen, The Agency Costs of Free Cash Flows, Corporate Finance and Takeovers, *American Economic Review*, **76**, (1986), 323-329.
- [14] B.H. Kim, L.L. Lisic and M. Pevezner, Debt Covenant Slack and Real Earnings Management, *www.ssrn.com*, (2011).
- [15] S.P. Kothari, A. Leone and C. Wasley, Performance Matched Discretionary Accrual Measures, *Journal of Accounting and Economics*, **39**, (2005), 163-197.
- [16] J.S. Linck, J. Netter and T. Shu, Can Earnings Management Ease Financial Constraints? Evidence from Earnings Management Prior to Investment, *www.ssrn.com*, (2011).
- [17] Y. Liu, Y. Ning and W.N. Davidson, Earnings Management Surrounding New Debt Issues, *Financial Review*, **45**(3), (2010), 659-681.
- [18] R. Monem and S.H. Farshadfar, Has Earnings Quality Declined Over Time? Australian Evidence, *www.ssrn.com*, (2007).
- [19] G. Rodriguez-Perez and S. Van Hemmen, Debt, diversification and earnings management, *www.elsilver.com*, (2010).
- [20] M.B. Slovin, M.E. Sushka and C.D. Hudson, External Monitoring and its Effect on Seasoned Common Stock Issues, *Journal of Accounting and Economics*, **12**, (1990), 397-417.
- [21] R. Watts and J. Zimmerman, *Positive Accounting Theory*, Prentice-Hall, Englewoods Cliff, New Jersey, 1986.