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The effect of corporative leverage on earnings management in Drug industry

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Abstract

In order to mislead shareholders, the directors often manage the profit. In this survey, the impact of corporative leverage on earnings management explored. The research sample includes 313 firm-years, which had been admitted in Drug industry in Tehran Security and Exchange Organization (TSEO). The period of research implementation was selected among fiscal years 2001-2014. To measure earnings management based on accruals in this investigation, jones's was used, and to measure corporative financial leverage, total corporative liabilities have been divided by total corporate assets and properties. We found a negative relationship among financial leverage and earnings management in this research.

Keywords: Financial Leverage- Earnings Management-Drug industry

1. Introduction

The financial accounting is primarily purposed to provide useful information for investors to predict performance (ROA) of the given economic unit.

The necessity of presentation of report from earnings may be duly documented as a primary source for decision making by investors, managers, and analysts and earnings reporting by various means such as presentation of a basis for calculation of tax, as a criterion for assessment of corporative performance success, as a scale for determining rate of equity dividends, and for earnings distribution management, and also as a criterion for management of an economic corporation and other cases may contribute to economy of the community.

Likewise, determining the earnings is crucially important for an enterprise because of the corporative value, which is related to current and future position of that enterprise [3].

In order to mislead the shareholders from real economic performance (ROA) of the enterprise, the managers often manage the profit. Such a earnings management is implemented by manipulation of accounting items or alteration of actual activities and transactions and it reduces the accuracy and correctness of message- like nature of earnings and increases the risk and uncertainty from extra organizational entities and at the same time, it probably leads to information dissymmetry and reduced investment. Profit- management not only hides real performance (ROA) of the enterprise but also conceals the real trend of corporative earnings and income growth, which is useful in prediction of corporative future growth [8].

Overall, earnings management is turned into the practice in two ways: Earnings management based on accounting items and real earnings management.

But at second mode, the management may acquire their own given earnings by making operational decisions and in other words through manipulation of real activities by tending to real earnings management.

Therefore earnings management is generally implemented in two ways as follows:

I) Manipulation of real activities and transactions

II) Alteration of accruals or arbitrary items)

Definition of earnings management: In his study, Shipper (1989) expressed that earnings management might also include real activities. This type of earnings management is done through alteration of operational transactions by aiming at misleading beneficiaries.

Alteration of real activities may affect on cash flows and in some cases on accruals [4].

Definition of accruals base earnings management:

Due to flexibility (elasticity) of Accounting Generally Accepted Principles, by means of several accepted methods the management tries to manipulate the profitable accruals. Management's manipulation may improve the quality of communication of earnings by reporting the confidential information [7].

Definition of financial leverage: It is the ratio of corporate liabilities to its assets. To provide their earnings and revenue, the enterprises take loan from extraorganizational entities. Those enterprises, which employ financial leverage, may more rarely manage the earnings for which they are closely monitored by creditors.

Barito et al (2000) showed that financial leverage is positively related to implementation of earnings management. In contrast, Parkoshin et al (2003) found that there is a noticeable negative relationship among financial leverage and earnings management.

Darogh et al (1998) argue that there is a relationship among proprietorship structure and earnings management. Proprietorship structure also varies in several enterprises. The major portion of corporate shares in USA belongs to financial institutions and investment companies.

The investment companies and investors are entitled for investment in short- term horizon. But, holding companies have right for investment in long run.

They concluded that if major stockholders of a company are composed of investors in short- term horizon it is more likely that earnings management is implemented in these enterprises.

In an investigation under title of "The review on relationship among earnings smoothing and corporate insolvency in TSEO Organization", Jabarzadeh et al (2009) concluded that in order to show better financial status and performance at several stages and to maintain their own state in capital market through their available instruments, the managers of commercial units might take measures, which lead to earnings smoothing [1]. Biti et al (2002) measured the rate variance in corporate earnings by means of the rate of change in cash flow and announced that the probability of earnings management in banks with positive variation in cash flow is higher than in other banks. Decho et al (1995) maintain that they should consider parameter of change in corporate ROA so that management models to be able to have more capability for prediction [2]. With respect to the attitudes purposed above, we deal with study on effects of corporative financial leverage on types of earnings management in Iranian enterprises in this research. Accurately, the present study is intended to give answer to these questions:

What is the impact of corporative financial leverage on earnings management?

2- Methodology

2-1- Research hypotheses

With respect to findings from the previous studies and according to the purposed theoretical views in subject interpretation section based on which corporate financial leverage effects on accruals- base earnings management, it is expected that there is a significant relationship among corporative financial leverage and accruals- base earnings management. Thus, first hypothesis of this study is expressed as follows:

Hypothesis: The rate of corporative financial leverage may significantly affect on accruals- base earnings management.

2-2- Statistical population, sampling technique, and sample size

The given population in this survey includes all enterprises ad mitted by TSEO Organization since 2006 to the end of 2011 during which they could also maintain their own membership in SEO organization.

Due to heterogeneity of some members in this population, systematic omission sampling method was adapted to select sample. For this purpose, the following constraints will be considered to select statistical sample:

- Those enterprises were qualified, which they have been admitted in TSEO Organization since the beginning of year 2005.
- Fiscal career was not changed in these enterprises.
- The selected enterprises should not be brokerage and investment companies.
- Corporative stock should not have transactional lag during any year at research period.

With respect to a group of aforesaid conditions, 118 enterprises were eventually selected as sample group for this study during a six- year period.

2-3- Testing of hypothesis:

To test first hypothesis (i.e. the impact of corporative financial leverage rate on accruals- base earnings management) the following model is used:

Model (1)

AMt= α + β1 LEV + δ Σ Controlst+ εt

To test second hypothesis (i.e. the impact of corporative financial leverage rate on real earnings management), the model is utilized as follows:

Model (2

Where:

AMt: Accruals base earnings management

βوα ،δ: Regression coefficients

LEVt: Corporative financial Leverage

Suspect=0: If the enterprise is not subject of suspect for earnings management

Control variables are as follows:

They include Return of Assets (ROA), Size of Enterprise (SOE), logarithm of number of shares, and ratio of market net value of assets to book value of equity of shareholders.

2-4- Measurement of accruals- base earnings management

To measure accruals- base earnings management, arbitrary accruals are used. The following regression is employed to estimate arbitrary accruals where the residue part of regression equation (ε) represents arbitrary accruals (Jones,).

Model ()

$$TA_{it}/A_{it-1} = \alpha_1(1/A_{it-1}) + \alpha_2(\Delta REV_{it}/A_{it-1}) + \alpha_3(PPE_{it}/A_{it-1}) + \varepsilon_{it}$$

TA_{ccrt}/A_{it-1}: Difference among earnings before unusual items and the resulting cash flows from operational transactions in the current period

$Assets_{t-1}$: Sum of assets at the start of fiscal term

ΔRev: Changes in sale

2-6- Measurement of corporate financial leverage:

To measure corporate financial leverage in this study, we use ratio of total corporate liabilities to total assets of the given enterprise.

2-7- Research Findings

Based on data composed approach, multivariate regression model is employed to test research hypotheses in this investigation. Similarly, assumption of standard linear regression models has been tested at 95% level of confidence, including lack of autocorrelation, normality of research variables, reliability of variables in composed data, lack of collinearity of independent variables and equality of variance (F-test).

Document mining technique has been adapted to collect the needed data for testing the hypotheses. The necessary data were gathered from the audited financial statements in enterprises, which admitted in TSEO organization, “Tadbirpardaz” Software Inc., and internet website of “TSEO deputy of Islamic researches and development and studies” and CODAL site.

After extraction of the needed information from the aforementioned sources in this study and preparation of variables by means of Excel software and doing the necessary computations to derive the needed data for implementation of research, STATA software was used to calculate regression models by means of the collected data.

2-8- Descriptive statistics

Parameters of central tendency and dispersion are given in Tables 1, 2, and 3. The difference among minimum and maximum data represents appropriate range to use these variables. The appropriate value of standard deviation for variables indicates the suitable consolidation of the selected sample data. The little distance (difference) among mean and median for variables denotes their normal distribution.

Table (1): Descriptive statistics of data

Variable	Variable symbol	Quantity	Mean	Maximum	Minimum	Standard deviation
Financial leverage	LEV	312	.6501817	1.014259	.0413952	.1463011
earnings management	AM	312	-.1158477	-.0155857	-.4347601	.0474199
Growth	SGT	311	.1512565	1.906959	-.9735986	.339028
Return of Assets	ROA	312	.1804512	1.533567	.025309	1.533567
Size	Size	312	12.771	15.09216	9.985897	1.003788
Audit	Audit	312	.1217949	1	0	.3275741
Ratio of market value to corporative book value	QTB	312	2.023627	20.4427	.1676468	1.50435

2-9- Testing of hypothesis

With respect to application of composed data in analysis on models at this study, we initially deal with review on type of data in this survey. The question, which may be raised upon estimation of using the composed data, is that what kind of methods should be used i.e. panel data or classic technique. At first, Limer F-test is employed to recognize if our data are of classic or panel type. If panel data are used then at the second step one should make decision to select which kinds of method namely fixed or stochastic (random) methods. So for this purpose, Hausman test is adapted. Types of data for each of hypotheses and models in this study are given in Table (2):

Table (2)

Research hypotheses	F- test	Hausman Test
Hypothesis	Panel data method	fixed effects

The assumptions of the studied regression should be explored for more efficiency in studies of regression.

Table (3)

$AMt = \alpha + \beta 1\ LEV + \delta\ \Sigma\ Controls_t + \varepsilon t$			
Hypothesis I			
Variable	**Variable coefficient**	**t- statistic**	**P-value**
Intercept	-.4431583	-11.49	0.000
Financial leverage	.037211	2.12	0.035
Size	.0248291	9.58	0.000
Corporate performance (ROA)	-.029829	-1.28	0.201
Growth (GST)	.0329051	5.61	0.000
Audit	-.0287199	-3.40	0.001
QTB	-.0049627	-2.43	0.016
F-statistic probability	.02208504		
F-statistic	.03084843		
Adjusted determination coefficient value (R^2)	.33886177		

3- Conclusion

Hilly and Ahlen (1999) argue that time earnings management is implemented when managers employ their own judgment and taste in financial reporting by aiming at misleading users of financial information. Under this condition, managers take some methods in accounting system and earnings reporting that do not reflect the real economic status in the given enterprise [6].

The present study is intended to review on the impact rate of corporate financial leverage on accruals- base earnings management, real earnings management, and general level of earnings management.

In testing of first and second hypotheses, corporative financial leverage coefficient was negative and this indicated that this independent variable has negative and significant relationship with its dependent variable (accruals- base earnings management and general level of earnings management). Similarly, corporative financial leverage coefficient was negative and insignificant in third hypothesis.

In other words, results of this research showed that corporative financial leverage rate has reverse and significant relationship with accruals- base earnings management as well as general level of earnings management. This means that if corporative financial leverage is at higher level so the rate of earnings management will reduce further.

In fact, since creditors of the enterprise monitor corporative performance (ROA) and activities, with rising level of corporative financial leverage, the probability of implementation of earnings management will be reduced in the company. Preparation of correct reports from corporative earnings and regardless of any personal judgment and taste by manager may contribute the users of financial information in making more proper decisions. The results of current research are complied with the findings from studies of Parkshin (2003) and Gheysarinia et al (2013).

4. Suggestions for future studies

With implementation of any research a window opens toward a new path and continuity of that course requires conducting other researches. Thus, it is suggested to conduct the following researches:

● The review of role and impact of managers' rewards on earnings management at the enterprises, which have been admitted by TSEO Organization;

● The exploration into the effect of proprietorship structure on earnings management at the enterprises, which have been admitted by TSEO Organization;

● The study on effect of corporate financial leverage on earnings management in certain industry

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