

Studying and Comparing the Relationship between Capital Structure and Earning Quality of Firms Accepted in Tehran Stock Exchange

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ABSTRACT

The main goal in this research is to study and compare the relationship between capital structure and earning quality of the firms accepted in Tehran Stock Exchange. To achieve this goal, all companies accepted in Tehran Stock Exchange which had presented their financial statements (balance sheet and income statement) and the required data during the years between 2004 and 2009 were carefully studied. On the whole and regarding the present limitations, 97 companies were selected. Then, the data related to the ratio of liabilities to assets and the ratio of performance cash flows to net profit (Pennman's earning quality model), the ratio of net performance assets at the beginning of the period over net sales (Barton-Simko's model of earning quality), and the ratio of criterion deviation of performance profit over criterion deviation of performance cash flows (Leuz's model of earning quality) were studied during a 6 year time period and the averages were collected for companies with high amounts of profit and companies with low amounts of profit and they were tested. To test the hypotheses, we used Pearson's coefficient correlation. The results of this research showed that there is a positive relationship between capital structure and earning quality in the firms, but this relationship is weak except for the Leuz's high quality earnings which are classified as average ones.

KEYWORDS: Earning Quality, Security market, Capital Structure.

1. INTRODUCTION

The investors commonly care about the profit amount. They consider profits without fluctuations or with less fluctuation to be more qualitative. In other words, they are eager to invest in those companies in which the trend of profit has more consistency. Thus, the reported profits have always been considered to be highly important as one of financial decision making criteria and financial analysts have reached a consensus that profit is a fundamental factor in their studies and judgments. Managers are strongly motivated to manage the profit. Business entities' managers try to interfere in the process of profit determination to report the profit numbers according to their desired goals [18]. In fact, by profit management we mean an artificial manipulation by the management to achieve the desired goals. Where management is present, earning quality is affected and we will focus on this issue in this paper.

Managers try to manage net profit opportunistically and they use several methods for this reason. In order to show a desirable vision of profitability, they manage the profit based on accounting principles and approaches. Managers can manipulate the profit through special accounting methods' selection and also changing the estimations. The selection and changing accepted accounting principles allow the recording of most transactions with one or several different methods. For example, we can choose one of the approaches of inventory assessment, fixed assets' depreciation method or profit identification for long-term contracts, and then change it. Management's dealing with transactions' accounting as desirable for him/her is another profit manipulation method. Activities such as sales' record timing, inventory and equipments' value reduction, repair and implementation of the equipments and the like are done according to the management's desires. Thus, an external user can not immediately discover these activities are carried out to manage the profit. Of course, annual auditing report requirement by valid auditing companies which is mainly considered to be included among the requirements of some financial resources' suppliers may force managers to confront some limitations and prohibitions in the process of profit management [15]. Thus, in companies which face significant increases in financial lever, profit manipulation occurs less. Of course, this issue is more severely observed about companies which have a high amount of free cash flows.

The previous researches' findings show that lever increase, reduces opportunistic behaviors in dealing with free cash flows for two reasons. First, the existence of liability forces the managers to have less free cash flows' access to pay the net liability and its interest and thus they cannot have investments which are not optimized. Second, companies which are supplied financially through debts should incur severe controls by the creditors. Thus, they confront limitations in investments.

In this research, we will experimentally study the relationship between financial lever (liabilities) and earning quality in firms accepted in Tehran Stock Exchange. In other words, the goal of this research is to answer this question: "Do financial lever and earning quality have a relationship?"

The main goal in this research is to study and compare the relationship between capital structure and earning quality of the firms accepted in Tehran Stock Exchange.

Below we will review the related literature and then describe our research method. In the next part, the results of analyses and finally conclusions and suggestions will be presented.

2. REVIEW OF RELATED LITERATURE: CAPITAL'S STRUCTURE

Many research projects have been carried out about the optimized structure in each of which a dimension of studying the effective factors about the structure of capital has been studied. The issue of capital's structure is one of issues considered by the financial management. Capital structure is a subject which is called minor equilibrium analysis by economists. The novel theory of capital's structure was presented in the year 1958 in a paper by Miller and Modigliani. These two researchers proved that company's financial supplying is ineffective in current value of the company regarding a set of limiting presuppositions and ignoring taxes and contracts' costs [13].

Zaiton & Tian studied the relationship between capital structure and companies' performance using 167 Jordanian companies' data during the years between 1989 and 2003 and found out there is a meaningful relationship between the ratio of short-term liabilities and total assets, the ratio of total liabilities and total assets, the ratio of long-term liabilities and total assets and the ratio of total liabilities and owners' equity regarding ROA [17].

Lee studied capital's structure and in a part of this research used return of assets (ROA) and returns of sales (ROS) as performance criteria and found out that there is a negative and agreement relationship between the performance and financial lever and the ratio of short-term liabilities. Thus, Chinese companies use short-term liabilities less [12].

Call found out, that there is a negative relationship between financial lever and the ratio of returns of assets [10]. Berger and Milbern used ROE and ROA as performance criteria for studying capital's structure, respectively [5], [14].

Capital structure variables are calculated as follows:

Total assets: total assets of the companies include the net right side items of balance-sheets of companies which involves the current assets and long-term assets and other types of assets.

Total liabilities: by total liabilities we mean total current liabilities (liabilities paid during a fiscal year) and long-term liabilities.

3. Review of related literature: Earning quality

Earning quality theory was first posed by financial analysts and stock exchange agents. They inferred that the reported profit does not show the firms' profitability as it may be imagined. They found out that analyzing financial statements of the companies is a difficult task because of several weak points in measuring accounting data. To show the profitability of the profit, in determining the value of a company, we should not solely focus on the amounts reported, but we should also consider the earning quality of the reported amounts. By earning quality we mean the potential for profit growth and growth of probable realization of future profits. In other words, the value of each share doesn't solely depend on the profit of each share in the current year, but it depends on our expectations of the future for our company and future years' profitability and assurance coefficient related to the future profitability.

There are three main viewpoints concerning earning quality assessment which study profit management in three different dimensions

The first idea concentrates on changeability of the profit which is based on the idea of the tendency among managers to smooth out the profit, because they believe that stockholders prefer the kind of profit which increases evenly. The theoretical school of thought related to this idea is relative changeability which is related to some other more qualified profits, sometimes. Leuz & et al (2003) measured profit changeability by calculating the ratio of standard deviations in performance profits with the standard deviations of performance cash flows [7]. (The low amount of this ratio is the reason for more smooth profits)

$$EQ = \frac{SD(OI)}{SD(CFO)}$$

The second idea was proposed by Barton & Simko in the year 2002, which is concentrated on profit wonder idea, and is the ratio of performance assets' net remainder at the start of the period with sales. They provided conditions in which the firms with low ratio of this idea encounter the report of wonders in the predefined profits [2].

$$EQ = \frac{NOA}{NS}$$

The third idea studied in this article is concentrated on the ratio of performance cash flows with concentrated profit. This criterion of earning quality is based on a theory which prefers cash flows which mean those more qualified profits. This simple view was proposed by Penman [16].

$EQ=CFO/NI$

Kordestani & et al studied some of the qualitative characteristics of data with capital costs in Tehran Stock Exchange. The research results show a lack of relationship between capital costs and conservativeness criterion and the quality of promissory goods [9].

Khajavi and Nazemi studied the relationship between earning quality and share yield emphasizing at the role of promissory figures. According to the research findings, the amount of companies' stock yield averages is not affected by the amount of promissory goods and the related components [8].

Bart & et al used the regression of price and stock yield on the profit to find estimation coefficients to determine the relatedness and reliability of the data related to the profit, and concluded that accounting information are reflected in the prices when they are related and reliable for the investors [3].

Baroa has studied the criteria for measuring quality of earnings, using quality characteristics of financial data included in theoretical framework of FASB. The results of studying the components of each dimension of quality of earnings showed that firms with high relatedness and high reliability of profit have higher profits, profit reaction coefficient and descriptive power of value regression than those which benefit lower relatedness and reliability of profit[4].

Chan & et al studied the relation between promissory goods (difference between profit and cash flows) and future stocks yields and showed that in firms with high amount of promissory goods in the period after financial data reporting, stock yield will decrease. An interpretation of these results is that firms with low quality of profit (i.e. firms with high promissory goods) incur a decrease in yield in the period after profit reporting, because stockholders find out about low earning quality of the firms and equilibrate the stocks' value accordingly[6].

4Research hypotheses:

- 1- There is a relationship between capital's structure and earning quality with Leuz's model.
 - 1-1) there is a relationship between capital's structure and Leuz's high quality.
 - 1-2) there is a relationship between capital's structure and Leuz's low quality.
- 2- There is a relationship between capital's structure and earning quality with Barton-Simko's model.
 - 2-1) there is a relationship between capital's structure and Barton-Simko's high quality.
 - 2-2) there is a relationship between capital's structure and Barton-Simko's low quality.
- 3- There is a relationship between capital's structure and earning quality with Penman's model.
 - 3-1) there is a relationship between capital's structure and Penman's high quality.
 - 3-2) there is a relationship between capital's structure and Penman's low quality.

5.Sample selection

Our statistic society was firms listed in Tehran Stock Exchange. First archiving method was utilized to collect data about theoretical literature and then data collection was done through financial statements of firms and other authentic sources in Tehran Stock Exchange (CDs and rdis.ir & irbourse.com sites).

Our sampling method was systematic deletion (filtering). Thus, selection requirements included:

- 1-Firms have the same financial periods and ended to esfand.
- 2-The firm's financial information for research period was gettable.
- 3-There is not any dealing stoppage more than 3 months.
- 4- Firms before year 2002 matriculate in Tehran stock exchange.
- 5-The sample is not among investing industry or brokerage or monetary and banking institutions.
- 6- The research period includes the years between 2004 and 2009.

6Test the research hypotheses

Pearson's coefficient correlation was used in order to test the research hypotheses. Before presenting the results of research hypotheses' tests, some tests such as the normality of the leftovers and normality of the variance of the leftovers were done. After the studies carried out, it was found that both conditions are realized. Also the following classifications were done regarding the contents of statistics' books and research methods to interpret coefficient correlation (r) [1], [11].

If r is higher than %90, the correlation is perfect.

If r is between %70 and %90, the correlation is high.

If r is between %40 and %70, the correlation is average.

If r is between %0 and %40, the correlation is weak.

We used SPSS and EXCEL software to do statistical tests and get the related tables, because they have many competencies to do statistical testing.

7. Findings

7.1. Descriptive statistics

Table 1, involves descriptive statistics of variables under investigation in the research process.

Table 1-Descriptive Statistics

$\alpha=0.5\%$		Std.error	Std. Deviation	mean	variable
Upper limit	Lower limit				
702/897	691/453	43/789	348/243	697/674	cs
69/5204	64/0725	1/376	15/697	66/796	Ql
18/8515	14/6917	1/05122	11/985	16/771	Qb
0/2510	0/1941	0/01438	0/1639	0/2225	Qp

According to table (1), it can be seen that the average capital's structure in our sample is 697.67, the average earning quality by using Leuz's model in our sample is %66.79, the average earning quality by using Barton-Simko's model in our sample is %16.77, and the average earning quality by using Pennman's model in our sample is %22.25.

Also regarding the assurance intervals in variables under our investigation, we can claim with %95 assurance that the ratio of liability to asset (capital's structure) in companies studied was in average amounts between 691.45 and 702.89. earning quality by using Leuz's model was reported to be an average between 64.07 and 69.25, earning quality by using Barton-Simko's model was reported to be an average between 14.69 and 18.85, and earning quality by using Pennman's model was reported to be an average between 19.41 and 25.10.

7.2 Inferential analysis of research variables

Regarding the results of table (2), and by comparing the meaningfulness level of the variables under our investigation in our sample companies, and since the level of meaningfulness is more than 0.05 and assurance level is %95 (error level of %5), the variables under investigation have a normal distribution and thus, we can use Pearson's coefficient correlation to test the hypotheses.

Table (2): the outcomes of Kolmogorov-Smirnov test for testing the variables under investigation to be normal

Qp	Qb	Ql	cs	variable
0.741	0.712	1.031	1.076	Kolmogorov-Smirnov Z
0.642	0.691	0.238	0.198	Sig

8. Testing the first hypothesis

This hypothesis states that there is a relationship between the ratio of liabilities to the assets and earning quality with Leuz's model. We studied this issue by using Pearson's coefficient correlation.

Table (3): coefficient correlation between earning quality of Leuz's model and capital's structure

		Log(assets/ liabilities)
high quality earning of Leuz's model	A: Pearson's coefficient correlation	A:0/438
	B:Significiat level(double side)	B:0/000
	C:number of companies	C:35
low quality earning of Leuz's model		A:0/287
		B:0/000
		C:62

As it is observed, the coefficient correlation between high quality earning of Leuz's model and the ratio of liabilities to the assets equals 0.438. The coefficient correlation between low quality earning of Leuz's model and the ratio of liabilities to the assets equals 0.287. And since the observed meaningfulness level is less than α , we do not have enough evidences to accept H0. In other words, we can claim with %95 assurance that there is a positive and meaningful relationship between earning quality in Leuz's model and capital's structure.

9. Testing the second hypothesis

This hypothesis states that there is a relationship between the ratio of liabilities to the assets and earning quality with Barton-Simko's model. We studied this issue by using Pearson's coefficient correlation.

Table (4): coefficient correlation between earning quality of Barton-Simko's model and capital's structure

		Log(assets/ liabilities)
high quality earning of Barton-Simko's model	A: Pearson's coefficient correlation	A:0/228
	B:Significiat level(double side)	B:0/010
	C:number of companies	C:91
low quality earning of Barton-Simko's model		A:0/141
		B:0/000
		C:6

As it is observed, the coefficient correlation between high quality earning of Barton-Simko's model and the ratio of liabilities to the assets equals 0.228. The coefficient correlation between low quality earning of Barton-Simko's model and the ratio of liabilities to the assets equals 0.141. And since the observed meaningfulness level is less than α , we do not have enough evidences to accept H0. In other words, we can claim with %95 assurance that there is a positive and meaningful relationship between earning quality in Barton-Simko's model and capital's structure.

10. Testing the third hypothesis

This hypothesis states that there is a relationship between the ratio of liabilities to the assets and earning quality with penman's model. We studied this issue by using Pearson's coefficient correlation.

Table (5): coefficient correlation between earning quality of penman's model and capital's structure

		Log(assets/ liabilities)
high quality earning of penman's model	A: Pearson's coefficient correlation	A:0/359
	B:Significiat level(double side)	B:0/000
	C:number of companies	C:83
low quality earning of penman's model	A: Pearson's coefficient correlation	A:0/081
	B:Significiat level(double side)	B:0/002
	C:number of companies	C:14

As it is observed, the coefficient correlation between high quality earning of penman's model and the ratio of liabilities to the assets equals 0.359. The coefficient correlation between low quality earning of penman's model and the ratio of liabilities to the assets equals 0.081. And since the observed meaningfulness level is less than α , we do not have enough evidences to accept H0. In other words, we can claim with %95 assurance that there is a positive and meaningful relationship between earning quality in penman's model and capital's structure.

11. DISCUSSION AND CONCLUSION

This research was carried out to study and compare the relationship between capital structure and earning quality of the 97 sample firms accepted in Tehran Stock Exchange during the years between 2004 and 2009, by using Leuz's, Barton-Simko's, and Pennman's models. The statistical method used in this research was Pearson's coefficient correlation. The results showed(table3) that in Leuz's models, earnings with high quality have an average level of correlation with the capital structure and earnings with low quality have an weak level of correlation with the capital structure.

In barton-simko's models, earnings with high quality and earnings with low quality have an weak level of correlation with the capital structure.

In penman's models, earnings with high quality and earnings with low quality have an weak level of correlation with the capital structure.

12. REFERENCES

- 1.Azar, Adel and Momeni, Mansour (2000), “Statistics and its use in management”, second volume, 4th edition, SAMT publications.
2. Barton, J. and Simko, P.J. (2002), “the balance sheet as an earnings management constraint”, *The Accounting Review*, pp. 1-27.
3. Barth M. W.Beaver and W.Landsman,(2001)," The relevance of the value relevance literature for financial accounting standard setting: Another view" , journal of accounting and economics , No.31, pp 77-104
4. Barua , A(2006) , " Using the FASB’ s qualitative characteristics in earning quality measu " , ProQuest Information and Learning Company , UMI Number : 320814.
5. Berger, Allen.(2002), Capital Structure Firm Performance: ANew Approach to Testing Agency Theory and an Application to the Banking industry.
6. chan , k , L . chan , N jegadeesh , and j . Lakonishok , (2006) . “ Earnings quality and stock returns “ , journal of business , forthcoming.
- 7.Cole, Rebel A. (2008), What Do We Know about the Capital Structure of Privately Held Firms?
- 8.Khajavi, Shokrollah and Nazemi, Amin (2005), “Studying the relationship between earning quality and stock’s yield, emphasizing at the role of promissory figures in Tehran Stock Exchange”, Accounting and Auditing studies, No. 40.

9. Kordestani, Gholamreza and Majdi, Amir (1999), "Studying some qualitative characteristics of data with capital costs", Accounting and Auditing studies, No. 48 & 85.
10. Leuz, C., Nanda, D. and Wysocki, P. (2003), "Earnings management and investor protection: an international comparison", *Journal of Financial Economics*, Vol. 69, pp. 505-27.
11. Ramezani, Khosro (2001), "*Research methods in behavioral and social sciences*", 4th edition, Fatemiyeh publications.
12. Li & Yue & Zhao. (2009), Ownership, Institutions, and Capital Structure: Evidence from China.
13. Modigliani, F., & Miller, M. (1958), The Cost of Capital, Corporation Finance and the Theory of Investment, *American Economic Review*, 261-297
14. Milboun, Faulkender & Takor. (2005), Does Corporate Performance Determin Capital Structure and Dividend Policy?
15. Odabashian, K. (2005). "The Effect of Large Leverage Increases on Opportunistic Behavior and Earnings Management", Ph.D., University of Connecticut.
16. Penman, S. (2001), *Financial Statement Analysis and Security Valuation*, McGraw-Hill/Irwin, New York, NY.
17. Tian, G.G., Zeitun, R., (2007), Capital Structure and Corporate Performance, *Australasian Accounting Business and Finance Journal*, N 4, P 40.
18. Wild, J. J. Brenstein, L. A. And Subramanyam, K. R. (2001). "*Financial Statement Analysis* , 7th, Mc Graw-Hill , p.25.