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Assessment of the Correlation between Short-Term Debts and the Size of Company & Profitability Accepted Companies in Tehran Stock Exchange

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ABSTRACT

The current research reviews the correlation between short-term debts, the size of the companies and the profitability of the companies admitted into the Tehran SE between the years 2004 -2008. This article seeks to determine whether there is a meaningful correlation between short-term debts and the size of the company. The method used for testing the hypothesis is the Regression & Correlation Testing. We have also used the Colmogorv-Smirnov Test for reviewing the normalization of the data.
The results of this research indicate that there is a meaningful correlation between the short term debts and the size and profitability of the company.
KEY WORDS: capital market- stock market- capital structure- financial- economic profit.

INTRODUCTION

Expansion of the capital market is one of the main bases of economic development. Iran's capital market has experienced relatively great upheavals since the end of the war with Iraq which includes major fluctuations in stock dealings, major privatization of public shares via the Tehran Stock Exchange and an increase in the number of companies admitted into the Tehran SE. The importance of the role of the capital market in economic development and the effective upheavals in the Tehran SE has led to much research about the Tehran SE.

Investors have to conduct extensive research and reviews when dealing in ordinary shares. In other words, they have to consider many factors when making an investment because they intend to turn their assets into ordinary shares. If investors attempt to invest without considering certain factors, they will not receive desirable returns on their investments. This is particularly the case in countries whose stock exchanges do not have the necessary efficiency in this field. In countries which do have efficient stock exchange, there is no need for extensive reviews since the share prices are close to the innate values of the stocks. In other words, the market prices of stocks are a suitable index of the real value of the said stocks. One of the main fields of research on the stock exchange is identifying the effective factors in the profitability of the admitted companies, and one aspect of this research would be to review the correlation between short term debts and the size of the company and the profitability factor. We intend to determine this correlation between the short term debts, company size and profitability factor in our research.

Research Objectives

The main objective of this research is to evaluate the correlation between short-term debts, the size of the company and the profitability of the companies admitted into the Tehran Stock Exchange.
The next objective of this research is:

To supply the information needs of companies, directors and in the next stage, institutions connected to these companies and their shareholders to obtain a realistic picture of the future condition of these companies by being more knowledgeable about their financial activities.

Problem Statement & the Reasons for Research Topic

The importance of writings on the capital structure of the company in the economic and financial literature is well known. The countless research not only reviews the correlation of debt to company assets, but also that of the structure of debt issuance. It is interesting that there has been little attention to the correlation between a company's debt usance structure and its function.

Profit is considered amongst important data in economic decision making. The research and studies conducted for profit are amongst the most voluminous and highest effort in the history of accounting. Profits, as a guideline for payment of dividends and an evaluation tool for measuring management effectiveness, forecasting and assessing decision making, have always been used by investors, directors/managers and financial analysis.

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Generally, the theoretical financial literature does not provide a comprehensive forecast of the effect of debt usance structure on company function. New studies suggest that the debt usance structure and size of the company have a tight relation to the executive projects of the company and the temperament of the financial system. For example, Devatripoint and Maskin believe that an economy in which several small banks provide financial backing for a company (multi bank system), will see an increase in short term industrial projects. Contrary to that, economies which have long term investment projects and companies seek loans from just a few large banks (single bank system) see better growth. This research bases the new developments of the literature of the company capital structure on the role of the conditional structure of debts and the size of the company.

Research Background

Jefferson and Rawski (1994) showed that in regions where the profitability of companies outside the exchange has grown, the profitability of exchange companies has decreased.

Rithold and Shipper (1995) compared and calculated the effects of variables like sales the level, number of employees, capital supply, the level of employee education, company age and government subsidies on the profit growth of the concerned companies in Indonesia using ordinary models and concluded that between the said variables, the effect of government subsidies on the growth of industries under study has been more meaningful.

Reiser (1997) concluded that non exchange companies have caused a reduction of exchange companies' profitability. In empirical literature, Shiantarli&Sambonli (1999) reviewed the impact of company debt structure on profitability in Italy and Britain and they obtained a positive correlation between debt usance and turnover period.

Results of Komonen (2000) showed that the sales level and manpower expenses had more of an impact on manufacturing companies' profit than other variables.

Agington (2000) in America shows that company's internal resources effect the profitability but that the type of industry is irrelevant.

Clover et al. (2000) In Spain reached the conclusion that the impact of company resources on profitability is 46% for large companies, 32% for medium sized companies and 44% for small companies. Also, the impact of industry type of profitability is 8% on large companies, 11% on medium sized companies and less than 2% on smaller companies.

Ericks&Neidsen's (2003) research in Denmark showed that the impact of company resources is more of an industrial type.

Bernouts (2005) showed that between the ownership structure and company sovereignty and profitability there is a meaningful correlation.

Lin &Roue (2005) reviewed Chinese companies' profitability and concluded that there is a positive correlation between the growth of non-stock exchange companies and profitability of stock exchange cos.

Research by Kinka et al. (2005) Proved that there is a positive and meaningful correlation between the size of the European companies and ratio of profitability.

Bukhari et al. (2005) Through their research in England proved that larger companies are more stable in their profitability than smaller companies and the profitability of small companies is more subordinate to market conditions and fluctuations.

Werbick& De Baker (2006) concluded that American companies which invested in research and development had increased their future profitability. Larnis et al. (2006) Believe that the size of the Australian companies and the index of general level prices affect the profitability of companies.

Wang & Ho (2006) concluded from their research that companies who deliver products via the Internet and at the doorstep to their customers, had an increasing profitability.

Christopher Baum, Dorothy Scaffer and Alexandra Talavera (2007) compared the structure of the debt usance with company turnover in Germany and America and concluded that those German companies who relied more on short term debts had relatively higher profitability. However, no correlation was found between the Deptusance structure and profitability of the American companies, which was due to legal factors.

Karjalenin (2007) conducted a research in Australia, Canada, Germany, Finland, France, Japan, Sweden, Holland and England and concluded that between development and research expenses and current period profit there was not a meaningful correlation but, between D & R expenses and future profitability there is a positive correlation.

Research Questions

1. Is there a meaningful correlation between short term debts and company profitability?
2. Is there a meaningful correlation between size of company and profitability?

Research Hypothesis

After conducting initial studies on research and considering the above objectives and questions raised, the following hypothesis are submitted:

1. There is a meaningful correlation between short term debts and company profitability.
2. There is a meaningful correlation between size of company and company profitability.

Scope of Research

Every research needs a specific scope and amplitude so that the researcher can have enough dominance on the subject of research throughout and be able to extend the results of the samples to the society at large. This research like others has the following amplitudes:

Thematic Scope:Evaluation of the correlation between short term debts and size of the company and profitability of companies admitted into the Tehran SE.

Time Scope: The scope of this research includes all stock exchange companies between 1383 and 1387 which have submitted their financial statements to the Exchange.

Locality Scope: The locality scope of this research includes companies which have been admitted into the exchange since the beginning of 1383 and there have been dealings in their stocks.

Research Operational Variables

The variables of this current research are independent and dependent variables which are based on their correlation and bear the following classifications:

Hypothesis	Independent Variable	Dependent Variable
First	Short Term Debts	Profitability
Second	Company Size	Profitability

Short-term Debts

Short-term debts include all obligations whose payments or clearance require consumption of current assets within one year or within an operational cycle (whichever is more), or they require other current debts. Thus, the definition of current debts has a direct correlation with the definition of the current assets.

Profitability

To review, we have to compare net profit with figures which are indicative of investment. Two ratios of asset turnover and rights of ownership turnover are used to assess the overall profitability of the company.

$$\text{Assets' Turnover} = \frac{Net\ profit}{Total\ Assets}$$

$$\text{Right of Ownership Turnover} = \frac{Net\ profit}{Shareholders\ Dues}$$

Company Size

The Shareholders' dues are used as an index in this research to assess the size of the company. Therefore, the net yield of the company's assets' value (shareholders' rights) is used for their classification.

Statistical Universe

Considering that the stock exchange is the only organization in Iran that has accessible information and there are no others comprehensive centers to gather research material from, the universe of this research has been selected from amongst companies admitted into the Tehran Stock Exchange, with due consideration to the elimination method.

In order to review more closely the admitted companies' data, all the companies have been classified into 36 industry categories and the total number of companies included in the statistical universe of this research during the fiscal years between 1383 and 1387 are 60.

Volume of Sample and Sampling Method

Considering the low volume of companies in society, all existing companies in society are reviewed and tested in this research and therefore, there is no need for the process of sampling.

METHOD OF COLLECTING DATA

The data of current research are gathered by the Field Study method. The required data of the research variables are taken from the existing Policy Processing Software Data bank in the Tehran Stock Exchange Library in order to gather the balance sheet data for the concerned periods. And by referring to articles, literature and the Internet sites, the required data about the background and theoretical framework of the research was gathered, reviewed and analyzed by the (Excel) and (SPSS) software.

DATA ANALYSIS AND TEST STATISTICS

In analyzing every one of the hypothesis, the Descriptive Statistics are used and for generalizing the sample data onto the entire universe, the Deductive Method is used.

The test statistic used in this research is as follows:

1. Kolmogorov-Smirnov Test to determine that the data is normal
2. Correlation and Regression Testing
3. Hypothesis testing
4. Kolmogorov-Smirnov Test

Before implementing the test statistic of the hypothesis, the research variables have to be tested to ensure their being normal. For this purpose the Kolmogorov-Smirnov Test is used as follows:

Test Statistic Hypothesis

H0: Data have no normal distribution *H0: sig<0.05*

H1: Data have normal distribution *H1: sig≥0. 05*

Judgment Method:

If the sign is less than 0.05 the H0 hypothesis is accepted and H1 is rejected and if, the sign is greater than 0.05, the H0 hypothesis is rejected and H1 hypothesis will be accepted.

Chart 1-1 Data Normalization Test

Variable	Short-term Debt	Company Size	Assets Turnover	Ownership Turnover
Meaningful level	0.571	0.752	0.708	0.588

Results of chart 1-1 show that the meaningful level of all 3 variables is above 0.05 therefore the normality of all 3 variables is confirmed.

Analysis report of first Hypothesis

1st Hypothesis Test:

There is a meaningful correlation between short-term debts and profitability.

The first hypothesis itself divide into two sub-hypothesis:

a) There is a meaningful correlation between short-term debts and asset turnover.
b) There is a meaningful correlation between short-term debts and ownership dues.

Each one of the above sub-hypothesis is reviewed in this research.

Hypothesis (a) test:

For the hypothesis (a) the below suppositions are expressed first:

H0: There is not a meaningful correlation between short-term debts and asset turnover.

H1: There is a meaningful correlation between short-term debts and asset turnover.

Chart 1-2 Hypothesis (a) Test

Determining Coefficient	Adjusted Coefficient	Beta	Correlation Coefficient	Alpha	Meaningful Level
0.502	0.571	0.75	0.708	0.59	0.02

Considering the above chart, the following equation can be considered for hypothesis (a):

Assets Turnover 0.588 + 0.752 = Short-Term Debts

Judgment Method of Hypothesis (a):

The adjusted determining coefficient in this hypothesis is equal to 0.571, which shows that 0.571 can be defined via changes to assets turnover variable by the short-term debt variable. And also, the correlation coefficient is between the two variables 0.708 which shows a strong relation between the two variables and the meaningful level is 0.02 which confirms the connection between the two variables because it is less than 0.05. And, considering that the Beta coefficient (line gradient) is 0.752, this means that if the short-term debts of a unit change the assets turnover changes by 0.752 and considering that the line gradient is positive, there is a direct meaningful correlation between the two variables.

So we can generalize that:

Between short-term debts and asset turnover there is a meaningful correlation.

Hypothesis (b) Test
For the hypothesis (b) the below suppositions are expressed first:

H0: There is not a meaningful correlation between short-term debt and ownership dues turnover.
H1: There is a meaningful correlation between short-term debt and ownership dues turnover.

Chart 3-1 Hypothesis (b) Test

Determining Coefficient	Adjusted Coefficient	Beta	Correlation Coefficient	Alpha	Meaningful Level
0.528	0.611	0.782	0.728	0.618	0.02

Considering the above chart, the following equation can be considered for hypothesis (b):
Ownership turnover 0.618 + 0.782 = Short-term Debts

Judgment Method for Hypothesis (b):

The adjusted determining coefficient in this hypothesis is 0.611 which shows that 0.611 can be defined via the changes in ownership dues turnover variable by the short-term variable. And also, the correlation coefficient between the two variables is 0.728 which show a strong link between the two variables and the meaningful level is 0.02 which confirms the link between the two variables because is less than 0.05. Also, considering that the Beta coefficient (line gradient) is .0782, this means that if the short-term debts of a unit the ownership dues turnover changes by 0.782 and that considering that the line gradient is positive, there is a direct meaningful correlation between the two variables.
So we can generalize that:
There is a meaningful correlation between short-term debts and ownership dues turnover.
Considering the (a) & (b) hypothesis, it can be said that the 1st hypothesis is approved, so we generalize that:
There is a meaningful correlation between short-term debts and profitability.
The results of the 1st and 2nd sub-thesis correspond to research findings of Shiantarli and Samboli (1999) in Italy and Britain and Bhum, Scuffer and Talaverra (2007) in Germany.

2nd Hypothesis Test
There is a meaningful link between company size and profitability.
The second hypothesis itself, divides into two sub-thesis:
C: There is a meaningful link between company size and asset turnover.
D: There is a meaningful link between company size and ownership dues turnover.

Hypothesis (c) Test
For testing of hypothesis c we first express the below mentioned thesis:
H0: There is no meaningful link between company size and asset turnover.
H1: There is a meaningful link between company size and asset turnover.

Chart 4-1 Hypothesis (c) Test

Determining Coefficient	Adjusted Coefficient	Beta	Correlation Coefficient	Alpha	Meaningful Level
0.451	0.482	0.343	0.671	0.225	0.01

Considering the above chart, we can consider the following equation for the 2nd hypothesis"
Assets Turnover 0.225 + 0.343 = Company Size

Judgment method of Hypothesis (c):

The adjusted determining coefficient in this thesis is 0.482 which shows that 0.482 is defined by asset turnover variable changes by company size variable. And also, the correlation variable between the two variables is 0.671 which shows a strong link between the two variables and the meaningful level is 0.01 which confirms the link between the two variables because it is less than 0.05. Also, considering the Beta coefficient (line gradient) is 0.343, this means that if the company size changes by 1 unit, assets turnover changes from 0.343 and also, considering that line gradient is positive, there is a meaningful correlation between the two variables.
We can then generalize that:
There is a meaningful link between the company size and asset turnover.

Hypothesis (d) Test
For testing of hypothesis (d) we first express the below mentioned thesis:

H0: There is no meaningful link between company size and ownership dues turnover.
H1: There is a meaningful link between company size and ownership dues turnover.

Chart 1-5 Hypothesis (d) Test

Determining Coefficient	Adjusted Coefficient	Beta	Correlation Coefficient	Alpha	Meaningful Level
0.472	0.497	0.365	0.691	0.315	0.01

Considering the above chart, we can presume the below equation for hypothesis (d):
Ownership dues turnover 0.655 + 0.331 = Co. Size

Judgment Method of Hypothesis (d):

The adjusted determining coefficient in this thesis is 0.497 which shows that 0.497 is defined by ownership dues turnover variable changes by company size variable. And also, the correlation coefficient between the two variables is 0.691 which shows a strong link between the two variables and the meaningful level is 0.01 which confirms the link between the two variables because it is less than 0.05. Considering the Beta coefficient (line gradient) is 0.365, this would mean if company size alters by 1 unit the ownership dues turnover changes from 0.365 and also, considering that the line gradient is positive, there is a direct meaningful link between the two variables.

We can then generalize that:

There is a meaningful link between the company size and ownership dues turnover.

Considering the confirmation of the hypothesis (c) & (d), we can say the 2nd hypothesis have confirmed so we can generalize that:

There is a meaningful link between company size and turnover.

The results of the third and fourth sub-hypothesis correlate with the research findings of Kinka et al. (2005) In European companies and Larnis et al. (2006).

Research Limitations

This research like any other research has its limitations which include:

- The lack of updated and completed companies' financial data and in some cases, lack of mechanized and centralize data in Tehran SE Data System.
- Wide dispersal of data.
- The existence of very scarce data sources, specially, regarding companies financial data.
- The impressible nature of this research's probable results of market conditions as all exchange data-based research.

Conclusion

The conclusion is considered a final product of the scientific research in which, the researchers express their findings and probable suggestions by relying on testing their hypothesis. In this research, we considered the link between company's short-term debts and size with profitability. Data relating to hypothesis test variables were constructed out of the Tehran Stock Exchange companies' financial figures between 2004-2008 To assess a suitable model, after an overall revision of practical works and hypothesis undertaken regarding the link between short-term debts and company size and profitability, it was reviewed via the Regression & Correlation Test… The research tentative review shows there is a meaningful link between company size, short-term debts and profitability.

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