Examine the relationship between finance pattern and growth Tehran Stock Exchange companies

Reza Ahmadi[1], Jamal Barzegari Khanagha(corresponding author)[2], Ali Reza Nasser Sadrabadi[3]

[1] Department of Accounting, Yazd science and Research Branch, Islamic Azad University, Yazd, Iran.
[2] Department of Accounting, Faculty of Economic, Management and Accounting, Yazd University, Yazd, Iran.
[3] Department of Accounting, Yazd Branch, Islamic Azad University, Yazd, Iran

Abstract: Firm growth has become one of the most important themes in business and finance literature. Several arguments have been made to explain the significance of growth due to its role as a precondition for firm survival, innovation and technological change. An increase in firm growth might increase demand from it towards other sectors, which could enhance economic activity and as a result lead to growth at the macro level. This study examines the impact of financial structures on the growth in Tehran Stock Exchange. The objective of this paper is to explore whether firms' growth can be associated with patterns of financial acquisition and whether these patterns influence firms' growth differently when the source is either internal or external. In This study hypotheses were formulated and tested with panel data consisting of 186 firms from 2006 to 2011 period, this is a descriptive-regression research of field branch. The theory discussions are collected via library method and the data collected from stock exchange and report of companies. The empirical results reveal that external financial sources – short-term debt – significantly influence firm growth and this variable and growth are positively related. However Results in the total sample were weak but it was more significant in different industries; the results showed that in the automotive industries, short-term and long-term debts dad strongest relationship with growth, and conversely in Cement and ceramics industries retained profit was more important. The findings also indicate that size and age influence firm growth. The results of this research can be used by economic and financial politicians, capital market decision makers, the accepted companies in stock exchange, financial investigation institutes and individual investors.

Introduction

The importance of investment for the economical-social growth and development is so much that it is considered as a key leverage to reach development, but we should bear in mind that as much as paying attention to this category by entering a positive progression leads to economic growth and prosperity, turning a blind eye to it and heedlessness can end in an economic recession and plunging into a regression or back motion and cycle. Thus, it should be mentioned that economic growth and a rise in the common good or common touch in the long run without any attention to the investment and the existing determining factors in the investment environment and atmosphere which are influencing the investment is impossible (Abzari et al.,2007).In this situation, the financing methods and company development are among the main discourse subjects in the area of investment which the present research in parallel with this subject goes to consider and scrutinize the relationship between financing methods and the growth and development in the amount of participation in Tehran stock market and the cement industry, car industry, medicine industry, tile industry and petrochemical (chemical) industry.

Review of literature

Sina'ii et al.(2011), in a research titled as "The influence of development opportunities on the relationship between capital structure, the shared profit and the valuable ownership structure of the company, got into the consideration of the influence of development opportunities on the relationship between capital structure, shared profit, and the valuable ownership structure of the companies accepted in Tehran stock market during the span of 2002 to 2008 of Persian calendar. Before analyzing the data obtained from testing the reliability of the variables, Chow-Hausman test were used in order to determine a proper model for estimating the parameters and the influence of independent variables on dependent variables. Then, by means of mixed data and the model for fixed effects, the research hypotheses were being tested. The results of the research illustrated that there is a meaningful relationship between the capital structure or lever and the shared profit with the value of the company; and in case of any existence of growth and development opportunities, this relationship will be negative and meaningful; but without these development opportunities, the relevant relationship will be positive

and meaningful. Also, the obtained results illustrated that there is a linear and meaningful relationship between the structure of ownership and the value of the company and the growth opportunities have a meaningful influence on this relationship.

Zeinali and Mohammad Shilan(2011), in a research got into considering the similarity of the structure of capitals in the medicine industries and also went into empirical considering and investigation of the relationship between the capital structure and the size of the company, the rate of capital turn over and the revenue of each share. Findings of this research illustrated that the companies 'existing in the industrial series of pharmaceuticals during the years of (2007-2009) of Persian calendar, have similar financial structure; Also, there is a meaningful relationship between the financial structure of the above-mentioned companies and their size. On the other hand, there is a meaningful relationship between their financial structure and the rate of turn-over in the investment and the revenue out of each share. Metan et al , (2010), during a research got into investigation and consideration of the influence of the characteristics of a company or firm on its financial structure which specifies the companies accepted in Tehran stock market. The sample of this research included 132 active companies in Tehran stock market since 2002 to 2006 of Persian calendar and the method of regressive econometrics for tabular data was used. The results of this research illustrated that there is a negative and meaningful relationship between the structure of capital and the structure of assets, profiting, the expected growth, their immediate relationship, and the turnover of the assets and a positive and meaningful relationship between the structure of the company's capital with its size and the ratio of profit coverage. In this research, the ratio of total debts to the total assets is used as a leverage criterion.

Yazdanfar (2012), in a research got into considering and scrutinizing the relationship between financing patterns and the growth of a company which the results of this research illustrated that the growth of the company is too sensitive to the amount of accrued profit and this sensitivity is more than the short-term debt. Also, the results of this research illustrated that there is no meaningful relationship between the financial debts and the growth of the company. Findings of this research were indicative of this concept that the size, lifetime or history and industry are influential in the growth and development of a company as well. Time span of this research was between 2006 to2007 and its statistical universe included the companies accepted in Sweden stock market.

Ivo Welch (2011), in a research went to investigate and consider the relationship between the criterions leverage and the structural and influential variables on the structure of capital. That's why the non-financial debts are not taken into consideration and this concept is totally against the essence of leverage philosophy. The results of the research carried out by Welch illustrated that some other criterions leverage can also be used which have a stronger connection with the influential variables in the structure of capital.

Gonzalez et al.(2009), through a research titled as " Ownership and the structure of capital in Latin America", evaluates the determining factors in the structure of capital in 1168 companies in seven Latin American countries from 1996 to 2005.This research illustrated a positive relationship between the so-called leverage and the concentration of ownership. This research stated that the companies with a centralized ownership avoid issuing stocks since they do not want to lose their control and domination over the company. Thus, they are more inclined to issue their debts that this issue in turn leads to the augmentation of the leverage.

Also, Hovey (2007), turned to consider the relationship between the structure of corporate dominance and sovereignty and the capital structure among Chinese companies. Their sample consisted of 1683 Chinese companies registered in Shanghai stock market. In this research the financial leverage is considered as the dependent variable and the constituents of the shareholders' rights (i.e. the ownership of the company), which is a prominent part of corporate sovereignty is considered as the independent variables. These variables included the share of government or public sector, private sector, natural persons, and foreign investors in the rights of shareholders and the method of research was of statistical panel data.

Yasuda (2005), in a research went into the investigation of the relationship between the size and the lifetime and the behavior of the companies in Japan. The results of the research of this researcher illustrated that the size and lifetime of the company has a negative influence on the growth of the company. On the other hand, there is a positive and meaningful relationship between the growth of the company and the variable of the research and development (R&D) cost and the workforce.

Research Hypothesis

In the cement industry, there is a meaningful relationship between the amount of growth in a company and the variables of changes in the accumulated earnings, variations in the short-term debt and variations in the long-term debt.

In the car industry, there is a meaningful relationship between the amount of growth in a company and the variables of changes in the retained earnings, variations in the short-term debt and variations in the long-term debt.

Research Method

The present research in terms of purpose is an applied and descriptive research in the field of correlation-regressive researches, which is based on the real data obtained from monetary statements of companies accepted in Tehran stock market and its results will be generated to the whole statistical universe through an inductive method. The means to

collect the data is the text mining and the required data will be obtained from audited monetary statements of the companies accepted in Tehran stock market and Tadbir pardaz and Rahavard-e-Novin computer software between 2006 to 2011 of Persian calendar. In this research, concerning collecting data about the approval or rejection of the research hypothesis, field research methods are used and for collecting data about the research literature, library research method is used.

Hypothesis testing

The regression model used in this research is as follows:

$$\text{Growth (it)} = \alpha_{it} + \beta_1 Age_{it} + \beta_2 size_{it} + \beta_3 CRF_{it} + \beta_4 CSTD_{it} + \beta_5 CLTD_{it} + \varepsilon_{it}$$

Descriptive statistics

This kind of statistics merely gets into describe the statistical universe and its aim is to measure the parameters of the statistical universe. If the calculation of rates and indices of the statistical universe is carried

out by means of enumeration of its whole elements, it is called descriptive statistics. (Mo'meni & Azar, 1377, p.8).The descriptive statistics of this research is presented in Table No.1

Table 1. Descriptive statistics

	AGE	SIZE	CRF	CSTD	CLTD	GROWTH
Mean	3.436382	12.94834	252.8968	0.188998	0.544848	0.294833
Median	3.583519	12.78591	0.105647	0.138329	0.070293	0.137088
Maximum amount	4.094345	18.98675	224993.0	4.956344	54.69105	113.3897
Minimum amount	1.945910	8.702843	-121.9821	-0.863365	-1.000000	-0.912020
Standard deviation	0.450570	1.521647	7459.809	0.380384	2.697677	3.774833
Skewedness	-0.953962	0.935888	30.09788	2.952618	12.01887	29.60428
Kurtosis	3.097470	4.871392	907.2461	31.21048	205.6298	887.3536
Observations	910	910	910	910	910	910
Number of sections	185	185	185	185	185	185

The first premise test

The first premise is as follows:

Among the growth rate of a company and the variations variables of the retained earnings, alterations in the short-term debt and alterations in the long-term

debt (by controlling the variables of size, lifetime of the company, (moderator variables), in the cement industry there is a meaningful relationship. The regression model used in this hypothesis is as follows:

$$Growth_{it} = \alpha_{it} + \beta_1 Age_{it} + \beta_2 size_{it} + \beta_3 CRF_{it} + \beta_4 CSTD_{it} + \beta_5 CLTD_{it} + \epsilon$$

The statistical form of the above-mentioned hypothesis is as follows:

H_0: $\beta_3 = \beta_4 = \beta_5 = 0$

H1=at least one of the β's not be zero

H0 (null) hypothesis indicates that there is no meaningful relationship between alterations in a sales growth and the variables of CRF, CST, and CLTD have no meaningful relationship with controlling variables of Age and Size and in H1 hypothesis there is

a meaningful relationship between growth arte alterations and the independent variables. The results of tabular data test are presented in Table No.4-4.

As the results obtained from tableNo.3 illustrates, the regression model in the cement industry by a %95 in the method of fixed and mixed effects is meaningful. Since, the probability rate of the statistical value (F limer) is more than %5(the number inside the parenthesis), the hypothesis of equality in the Y-axis

amounts won't be rejected; so, the OLS method won't be rejected.

The results obtained from pattern estimation in the mixed method indicates that the coefficient of the variable size and the percentage- level changes in the accrued profit by a %95 probability is meaningful and since the sign of the variable size is negative, it has a

reverse relationship with the sales growth and because of positivity in the coefficient of accrued profit as a variable, we can learn about the direct relationship between the sales growth and the percentage-level changes in the accrued profit, so the null hypothesis (H0) by a %95 probability is rejected and H1 hypothesis is accepted.

Table (4-4): Regression model test in the cement industry

Estimation Method / Variables	Mixed method(OLS)		Fixed effects	
	B	P Value	β	P value
C	1.60*	0.028	4.04	0.44
Age	-0.005	0.92 Table (4-4): Regression model test in cement industry	-0.045	0.97
Size	-0.10*	0.05	-0.28	0.16
CRF	0.25*	0.00	0.26*	0.00
CSTD	-0.00	0.99	-0.078	0.54
CLTD	-0.011	0.41	-0.017	0.42
F model statistical value	255.4*	0.00	13.56*	0.00
Determination coefficient	0.94		0.86	
Durbin-Watson	1.49		2.09	
F-Limer test	1.38(0.19)			

*) meaningfulness with %95 certainty
*) meaningfulness with %90 certainty

The coefficient of determining this regression model in the mixed method equals %94 which indicates %94 changes in the growth rate of sales due to the independent variables. Also, the statistical value of Durbin-Watson which itself illustrates the primary level correlation among disruption particles is indicative of the lack of correlation itself.

The statistical form of the above-mentioned hypothesis is illustrated as follows:

H0: $\beta_3 = \beta_4 = \beta_5 = 0$
H1=at least one of the β's not be zero

H0 hypothesis indicates that between alterations in the growth rate and the variables of variations in CRF, CST, and CLTD by controlling the variables of Age and size there is no meaningful relationship and H1 hypothesis indicates that between growth rate alterations and the independent variables there is a meaningful relationship .The results of tabular data test in this industry is presented in table No.5.

As the results obtained from table No.5 illustrates, the regression model in the cement industry by a 95% probability in the method of fixed and mixed effects is meaningful. Since the probability rate of the statistical

The second premise test

The second premise says that among the growth rate in the company and the variables of variation in the accrued profit, variations in the short-term debt and variations in the long-term debt(by controlling the variables of size, lifetime of the company[moderator variables]) in the medicine industry there is a meaningful relationship . The regression model which is used in this hypothesis is as follows:

$$Growth_{it} = \alpha_{it} + \beta_1 Age_{it} + \beta_2 size_{it} + \beta_3 CRF_{it} + \beta_4 CSTD_{it} + \beta_5 CLTD_{it} + \epsilon$$

value F-Limer is more than 5% (the number inside the parenthesis), the hypothesis of equality in the Y-axis amounts won't be rejected; so, the OLS method won't be taken into consideration.

The results obtained from patterned estimation in the mixed way indicates that the amount or coefficient of size as a variable and the percentage level changes in the accrued profit by a 95% probability is meaningful and since the size of the variable size is negative, it has a reverse relationship with the sales growth and because of positivity in the coefficient of accrued profit as a variable, we can learn about the direct relationship between the sales growth and the percentage-level changes in the accrued level profit, so the null hypothesis(H0) by a 95% probability is rejected and H1 hypothesis is accepted.

Table 5: Regression model test in the medicine industry

Estimation Method / Variables	Mixed method(OLS)		Fixed effects	
	β	P Value	β	P value
C	-0.92*	0.00	-4.78	0.18
Age	0.09*	0.00	0.53	0.52
Size	0.06*	0.00	0.24**	0.08
CRF	0.00	0.93	-0.00	0.79
CSTD	0.20*	0.00	0.180*	0.04
CLTD	-0.041*	0.00	-0.06	0.11
F model statistical value	11.6*	0.00	2.51*	0.00
Determination coefficient	0.50		0.56	
Durbin-Watson	1.93		2.08	
F-Limer test	1.63(0.112)			

*) meaningfulness with %95 certainty
**) meaningfulness with %90 certainty

The coefficient of determining this regression model in the mixed method equals 94% which indicates 50% of changes in the growth rate of sales due to independent variables. Also, the statistical value of Durbin-Watson which itself illustrates the primary level correlation among disruption particles is indicative of the lack of correlation itself.

Consideration of the research results
As it was observed, between the results of this research and the researches carried out in the country and abroad there were paradoxes and similarities that some of them are as these items; from the point of view of the author of this research one of the main differences that was observed in the results of the hypotheses testing was the negligible determination factor which was observed in the main hypothesis(that covered the whole sample) and an excellent determination factor for some industries; this concept can be indicative of the heterogeneity in the financing methods in diverse industries. It should be mentioned that in the texture of capital and financial researches the variable of industry can be one of the main i factors influencing the financing methods and in other words this subject that companies that are working in the same industry usually have the same financial policy that this issue can be due to diverse reasons such as imitating each other, difference in size, being costly, support of the government and/or a similar structure(or other reasons).It seems that considering the relationship between the financing method and the growth of the company without paying any attention to the factor of industry can have delusive results.

From the point of view of the author of the present research several factors can influence this difference such as:
1. The factor of existence of a public economy can influence the large industries, so these industries can easily access the resources for financing and for clearing their debts.
2. The structural difference that exists in several industries such as pharmaceutical and cement industry that this factor is being ignored in the research carried out by Yazdanfar. In the pharmaceutical industry as a research-oriented industry which is based on future and research, any need to financing through debts is realized more than others; since in this section lots of investments occurs at first and the cost of research and development (R&D) is a part of it, while in the cement industry based on the structure of the market and the product which is supplied we can feel and realize a considerable difference in comparison with the pharmaceutical industry.

Recommendations of the research
Recommendations of this research are classified into two groups originating from the research results and the recommendations for the next results:

Recommendations originating from the research
The results of this research illustrates that the weak relationship among independent variables mentioned in the research and the growth of the company while our samples are from different industries and this connection if being taken into consideration in the industries separately can be justified more strongly.

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