

The Relation between External Financing and P/E ratio in Evaluation of Financial Performance in Listed Companies in Tehran Stock Exchange

Vahid Haghghi Kakhaei Jaleh^{*}, Yousef Haghghi^{**}, Mohammad Sadegh Dehghani Rokh^{***}

^{*}Department of Accounting, Science and Research Branch, Islamic Azad University, Tabriz, Iran

^{**}Ferdowsi University of Mashhad, Mashhad, Iran

^{***}Electronic Campus, Islamic Azad University, Tehran, Iran

ABSTRACT

In order to perform beneficial projects and to achieve maximum returns as well as increase their stockholders wealth, companies use different financial resources and varied methods. These financing resources and the level of their usage are one of the affecting factors on the operational performance of companies.

In this respect, current research investigates the relation between financing via long-term debt and capital on company's financial performance. In order to evaluate company's financial performance, Price to Earnings per share ratio (P/E) has been used. By precise review of literatures two hypotheses were planned and statistical sample including 50 companies among listed companies in Tehran stock exchange were selected for an eight-year period (2000-2007).

These hypotheses were analyzed by using Pearson correlation test, two-variable regression and T and F tests. The results of tests show the financing that has been done via long-term debt and shares issue has a direct relation to P/E ratio in the following year of the financing.

KEYWORDS: External financing, Performance evaluation, Price to Earnings per share ratio.

INTRODUCTION

In large companies, financing is a common act. In order to provide necessary funds for capital charges and company operations, company's administration has various resources and varied methods of financing. Financing may be done via shares issue or debt securities, the difference of which is obvious. Some hypotheses argue that why companies select special financing methods and how such selections are reflected in the past and future performance of companies. However, vast collections of researches have investigated underlying factors and finance effects such as the relation between financing via debt securities or shares issue or future cash flows [1].

Experiential investigations of company performance in financing, concentrate on two fundamental measures; stock return and operational performance. The obtained results indicate that shares future return is meaningfully influenced by financing activities. Also there are researches concerning the relation of operational performance and financing; each of them has considered a different measure for evaluation of operational performance [4,5,6].

The main reasons of companies financing

Manager's motivation for financing can be configured into three main reasons: dept repayment, investment in new projects and atoning lack of operational cash flows [6,8,10].

Types of financing methods

In a general classification, we can classify the financing methods into two categories:

- Short-term finance
- Long-term finance [9,11]

Short-term finance: repayment of this kind of finance is less than one year. Three main resources of short-term finance are:

- Trade credits
- Bank loans
- Commercial papers [11]

Long-term finance: this kind of finance obtained through long-term resources. In other words, its payment is done in more than one year. The most important resources of long-term finance include:

- Debt securities issue

- Preferred stock issue
- Common stock issue
- Finance through accumulated profit [11]

The first three resources of long-term finance as well as short-term finance recourses are called external financing. Because they are obtain through outside of organization resources. In this research by finance we mean the kind that is provided via outside of organization.

Operational performance and its evaluation measures

Operational performance is a measure for evaluation of achievement level to organizational goals [1]. Although it may seem easy, the evaluation of efficiency and performance of companies is a complicated and difficult process and for accomplish such a difficult process, different measures are usually used. some researchers have classified the performance evaluation measures with regard to the kind of used information in its calculation and investigated subject as the following:

1. Accounting approach: in order to evaluate the performance by accounting approach, the registered information in financial statements is usually used. Evaluation measures in this approach are: Return on Assets, Return on Equity, Earning Per Share and ...
2. Financial management approach: in this approach mostly financial theories and risk and return concepts are used. The applied measures in this approach are: Return on Investment, Return Ratio and ...
3. Economic approach: in this approach economic concepts are mostly used. The company's performance in this approach is evaluated by concentrating on assets profitability power and with regard to return rate and applied capital cost rate. Evaluation measures in this approach are: Economic Value Added, Market Value Added and ...
4. Combined approach: this approach tries to use market values and information in addition to registered information in financial statements; therefore the accomplished evaluations would be more relevant. Evaluation measures in this approach include Price to Earnings ratio, Tobin's Q and ...

LITERATURE REVIEW

Heron and Lee; have investigated the effects of various shares issue methods for financing such as primary offering, secondary offering and rights offering on operational performance. They found out the companies that expose the shares regularly in primary offering have recoveries in operational performance concerning shares offering. As a whole their research shows that operational performance is largely related to the type of company's finance [7].

Caser; investigated the relation between level and kind of finance and past and future operational performance of the companies from New York exchange that had financed from 1967 to 1998. The evaluation measures for operational performance concerning finance include shares primary offering, return on assets, return on sale, the ratio of operational cash to assets and ratio of operational cash to sale. The results of the survey indicate that changes in company operational performance has a regular relation to level and kind of company's finance. This relation is negative for future changes and is positive for past changes. Also financing through shares offering is more related to performance changes in comparison to other methods of financing like long-term debt [1].

Chi et al; have investigated the operational performance changes of Chinese companies after initial public offering as well as the relation between operational performance and return of these companies. The findings showed that initial public offering causes remarkable decrease in profitability, the rate of sale growth and company's efficiency. In addition the companies that had higher return on asset previously, experienced more decrease in performance after initial public offering [3].

Cheng et al; have investigated the relation between the company's strategic system and operational performance after initial public offering in Chinese companies. The documents indicate that these companies had a better operational performance prior to initial public offering in comparison to similar industries [2].

Wang; have investigated the operational performance changes of Chinese companies after primary offering. The results of research show abrupt decrease of company's operational performance after primary offering [12]

Research hypotheses

In this research, the net balance sheet finance is defined as equal to the sum of changes in capital shares and long term debts evaluation of company's performance is done by using P/E ratio. Therefore the research hypotheses are as the following:

1. There is a relation between balance sheet finance and P/E ratio of the following year.

2. There is a relation between balance sheet finance and P/E ratio of the following 3 years.

Methodology

The method of this research is of correlation kind and its goal is of applied kind. And since it investigates the cause and effect relations between research variables, we can consider it as causative kind after occurrence. The necessary information for the literature section has been collected from specialized articles and journals that had been extracted from internet (library method). The needed data for hypotheses is collected by using annual financial statements and accompanied notes of listed companies in Tehran stock exchange.

The measurement of research variables

A. Independent variable: balance sheet finance

To evaluate the balance sheet finance, there have been two approaches: balance sheet approach and statement of cash flow approach [10].

In the balance sheet approach the net of finance is defined as sum of changes in capital and debt:

$$\Delta XFIN = \Delta EQUITY + \Delta DEBT$$

- $\Delta XFIN$ = changes in balance sheet finance
- $\Delta EQUITY$ = changes in stockholder's equity
- $\Delta DEBT$ = changes in debt

The volume of changes in stockholder's equity is equal to volume of changes in common stock capital and preferred stock capital:

$$\Delta EQUITY = \Delta CEQUITY + \Delta PEQUITY$$

- $\Delta CEQUITY$ = changes in common stock capital
- $\Delta PEQUITY$ = changes in preferred stock capital

The volume of changes in debt equals to volume of changes in long-term debts, convertible debts and changes in notes payable.

$$\Delta DEBT = \Delta IITDEBT + \Delta CVDEBT + \Delta NOTES$$

- $\Delta IITDEBT$ = changes in long-term debts
- $\Delta CVDEBT$ = changes in convertible debts (to shares)
- $\Delta NOTES$ = changes in notes payable

In this research, balance sheet approach has been used for calculation of independent variable (net balance sheet finance)¹. Therefore with regard to above approach, company's net balance sheet finance is calculated as the following formula:

$$\Delta XFIN = \Delta EQUITY + \Delta DEBT$$

- $\Delta XFIN$ = net balance sheet finance
- $\Delta EQUITY$ = changes in common stock capital
- $\Delta DEBT$ = changes in long-term debts

In order to neutralize the company's bigness and smallness effects, the finance net in each company is defined according to assets average of the company. Therefore $\Delta XFIN$ in this research is adjusted as the following:

$$\Delta XFIN = \Delta EQUITY / \text{average assets} + \Delta DEBT / \text{average assets}$$

B. Dependent variable: company's performance

In order to evaluate the company's performance, the ratio of price to earnings per share (P/E)² has been used in this research.

The necessary financial data for calculation of finance net and company's performance in this research, extracted from company's financial statements between years 2000 - 2007.

Research hypotheses test

In order to test statistical hypotheses, various statistical methods including Pearson correlation test, liner regression, model meaningfulness test (F test) and distinct regression coefficients test (T test) have been used.

The first hypothesis model investigation

"There is a relation between balance sheet finance and P/E ratio of the following year"

In order to investigate this hypothesis, we survey the following model:

¹. This approach is similarly used by Richardson & Sloan (2003) and Caser (2005).

². Price/Earnings ratio

$$P/E_{t+1} = \beta_0 + \beta_1 \Delta XFIN_{i,t} + \beta_2 P/E_{t-1} + \varepsilon$$

In other words, we investigate the following hypothesis:

- H₀: there is no relation between balance sheet finance and P/E ratio of the following year.
- H₁: there is a relation between balance sheet finance and P/E ratio of the following year.

First the regression between balance sheet finance and P/E ratio has been satisfied; the results of which are shown in the following tables.

Table 1. ANOVA test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1369.815	2	684.907	35.913	.000
Residual	896.343	47	19.071		
Total	2266.157	49			

Table 2. Coefficients

(Constant)	Un standardized Coefficients	Standardized Coefficients	t	Sig.	Un standardized Coefficients
	B	Std. Error	Beta		
XIFN	.598	1.222		.489	.627
P/E _{t-1}	28.345	5.021	.603	5.645	.000
	.199	.079	.270	2.527	.015

As it is obvious in the above table, the F-statistic=35.913 and relevant meaningfulness level (0.001>) and its comparison with significant level (5%) show the meaningfulness of the research first hypothesis regression model. In addition, with regard to t= 5.645 and the relevant meaningfulness level, the coefficient of regression model independent variable would be meaningful and due to positivity of independent variable coefficient we conclude that there is a meaningful and direct relation between balance sheet financing and the following year P/E ratio. Therefore the ultimate model of this hypothesis is as the following:

$$P/E_{t+1} = 28.345 * \Delta XFIN_{i,t} + .199 * P/E_{t-1}$$

Also according to table 3, the statistic of Durbin-Watson is about number 2 which shows lack of correlation between the components of first hypothesis regression model. In order to test relative normality of data, Kolmogorov-Smirnov test has been used. As it is show in table 3, meaningfulness level and its comparison with significant level (5%) show data normality in the regression model of the first hypothesis.

Table 3. Test results

	R square	Durbin-Watson	Kolmogorov-Smirnov				
			N	Mean	Std. Deviation	Z-statistic	Sig.
P/E _{t+1}	.604	1.80	50	10.09	6.71	1.35	.51

The investigation of second hypothesis model

"There is a relation between balance sheet finance and P/E ratio of the following 3 years"

By P/E ratio in the following 3 years, we mean the average of P/E ratio in three years after financing. In order to investigate this hypothesis we survey the following model:

$$A-P/E_{t+3} = \beta_0 + \beta_1 \Delta XFIN_{i,t} + \beta_2 P/E_{t+1} + \varepsilon$$

In other words, we investigate the following hypothesis:

- H₀: there is no relation between balance sheet finance and P/E ratio of the following 3 years.
- H₁: there is a relation between balance sheet finance and P/E ratio of the following 3 years.

First the regression between balance sheet finance and P/E ratio has been satisfied; the results of which are shown in the following tables.

Table 4. ANOVA test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	205.281	2	102.641	6.518	.003
Residual	740.165	47	15.748		
Total	945.446	49			

Table 5. Coefficients

	Un standardized Coefficients	Standardized Coefficients		t	Sig.
	B	Std. Error	Beta		
(Constant)	3.900	1.183		3.297	.002
XIFN	3.804	4.353	.123	.874	.387
P/E _{t+1}	.261	.091	.404	2.875	.006

As it is obvious in the above table, the F-statistic=6.518 and relevant meaningfulness level (0.003) and its comparison with significant level (5%) show the meaningfulness of the research second hypothesis regression model. In spite of meaningfulness of regression model regarding T-statistic = 0.874 and the relevant meaningfulness level (0.387) and its comparison with significant level (5%), we conclude that independent variable coefficient (financing) is not meaningful and as a result the mentioned hypothesis would be rejected.

Conclusion

As the results of the research first hypothesis test show, there is a meaningful and direct relation between balance sheet finance and price to earnings ratio in the next year of financing and it proves that wholly finance through long-term debts and shares issue can increase P/E ratio in the following year. But the results of the second hypothesis shows that P/E ratio in the following 3 years of financing has no relation with finance through long-term debts increase and shares issue which shows the short term effect of financing on P/E ratio.

REFERENCES

- 1- Caser, Gavin john, (2005), *External financing and firm operating performance Working paper, university of California,*
- 2- Cheng, Peng, Jean Jinghan Chen, & Xinrong Xia, (2007), *Expropriation, weak corporate Governance and post-IPO Performance: Chinese Evidence,* Advances in financial Economics, vol. 12, p:237-267.
- 3- Chi, Jing, & Carol Padgett, (2006), *operating performance and Its Relationship to market performance of Chinese Initial Public Offerings,* The Chinese Economy, Vol.39,Iss.5;p:28.
- 4- Dann, Larry Y. Ronald W. Masulis & David Mayers, (1991), *Repurchase tender offers and earnings information,* Journal Of Accounting And Economics, 14, p: 217
- 5- Hansen, Robert S., & Claire Crutchley, (1990), *Corporate earning and financing- an empirical analysis,* Journal of business, 63, p:347-371
- 6- Healy, paul M., & Krishna G. Palepu, (1990), *Earnings information conveyed by dividend initiations and omissions,* Journal of financial economics, 21, p:149-176
- 7- Heron, Randall A., & Erik lee, (2004), *A comparison of the motivation for and the information content of different types of equity offerings,* Journal of business, 77, p:605-632
- 8- Kabir, Rezaul & Peter Roosenboom, (2003), *Can the stock market anticipate future operating performance? Evidence from equity rights issues.* Journal of Corporate Finance, 9, p:93-113
- 9- Marsh, William H. (1994), *Financial Management,* South-Western College Publishing, p:362-390
- 10- Richardson, Scott A. & Richard G. Sloan, (2003), *External Financing and Future Stock Returns,* Financial Research, 58,
- 11- Ross, Stephen A. Wester Field R.W & Jaffe. J.F, (1991), *Corporate Finance,* Second edition, Princeton University Press, p 694
- 12- Wang, Changyun, (2008), *Ownership and operating performance of Chinese IPOs,* Journal of Banking & Finance, 22, p:1835-185