The relation between financial flexibility and financial performance with the ratio of book value to market value in Tehran listed firms

Zahra Bouchani [1, 2], Mehrdad Ghanbari [2,3,*]

[1]Department of Accounting, Ilam Science and Research Branch, Islamic Azad University, Ilam, Iran
[2]Department of Accounting, Ilam Branch, Islamic Azad University, Ilam, Iran
[3]Department of Accounting, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran

Abstract: Development of capital markets has made significant the role of criteria of performance evaluation in reflection of firm's performance via content of current information. In this field, researchers have paid attention to competition between two categories of criteria i.e. traditional and value- based performance evaluation criteria in order to justify the performance of interested firms. In addition, flexibility plays an important role in the empowerment of managers regarding future investments. The problems of capital market have made necessary the preservation of flexibility for firms to use advantageous opportunities. The aim of this research is to study the impact of financial flexibility and financial performance on the ratio of book value to market value in Tehran listed firms. Therefore, we selected 50 firms using specific criteria. Required data has been obtained from financial statements and current information of these firms in a 5 years period from 2009 to 2013. In this research, we used advanced method of generalized momentum (GMM) and estimated generalized least squares (EGLS) method to test hypotheses. The results show that there is a positive and meaningful relationship between leverage ratio and liquidity ratio as criteria of measurement of financial flexibility and the ratio of operational cash flow as one of the criteria of measurement of financial performance. In addition, there is a negative and meaningful relationship between the rate of assets return and the ratio of book value to market value.

Key words: Financial flexibility; Financial performance; Leverage ratio; Liquidity ratio; The rate of assets return; Operational cash flow; The ratio of book value to market value

1. Introduction

Flexibility plays on important role in the empowerment of managers regarding future investments. The problems of capital market have made necessary the preservation of flexibility foe firms to use advantageous opportunities. Myers (1977) showed how threats that result from firms debt may prevent their use of profitable opportunities, even when managers and shareholders are interested in using these opportunities. Optimal acquisition of resources lead to the success of firms in the market, and firms can follow the opportunities of market successfully and enjoy the benefits of activity in the market (Scott, 2007).

1.1. Previous research

The final product of financial accounting process is to present financial information to different users including internal and external user of trade organization in the form of accounting reports. Accounting reports that are prepares and presented to provide information needs of external users of

trade organization are included in the area of financial reporting (Graham, 2009).

Financial statements constitute the main part of financial reporting process (Frank, 2012). The aim of financial statements is to present classified information regarding financial positive, financial performance and financial flexibility of trade entity. Financial statements are useful for a wide range of users to make economic decisions (Gamba, 2013).

Decision making about economic problems by users of financial statements requires the evaluation of trade entity power to provide Cash. Finally, this power determines the capacity of trade entity to perform payments including payment of salary to employees, payment to providers of goods and services, payment of financial expenses, investments, repayment of received facility and distribution of dividend to stockholders. The evaluation of generation power of cash is facilitated via concentrating on financial position, financial performance and cash flows of trade entity and using then to predict expected cash flows and assess financial flexibility (Haghighat and Bashiri, 2014).

Financial position a trade entity includes its controlled economic resources, its financial structure, the amount of cash, the ability of debts repayment, and the capacity of adaptation to changes of operational environment.

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[*] Corresponding Author.

The information of financial position is presented in balance sheet. Information of controlled economic resources of trade entity and the application of these resources in the post are useful to predict the power of trade entity for generating cash from these resources in future. Information of financial structure is useful to predict the needs of future loan and the manner of dividend distribution and future cash flows to beneficiaries in trade entity. In addition, this information is useful to predict the extent of possible success of trade entity for achieving financial facility. Information regarding liquidity and repayment ability of debts is useful to predict the power of trade entity for performing its financial commitments in due date.

"Liquidity" refers to provision of cash in near future after determining financial commitments.

"the ability of debts repayment" refers to the provision of cash for performing financial commitments, in due date and during a period that is beyond near future. Information regarding the capacity adaptation to changes of operational environmental is useful to evaluate the extent of risk, loss tolerance or gaining benefits from unexpected changes. This capacity is related to financial flexibility (Frank, 2012). Financial performance of trade entity includes return on controlled resources of trade entity.

Information of financial performance is presented in loss and profit statement and total loss and profit statement. Information of financial performance and its variability for predicting the capacity of trade entity is used to Judge about the effectiveness of potential application of additional resources by trade entity, and effective use of current resources (Harford, 2008). Financial flexibility refers to the ability of trade entity based on effective action for changing the extent and time of its cash flows so that trade entity can respond to unexpected events and opportunities. Financial statements reflect information that is useful to evaluate the flexibility of trade entity. Financial flexibility allows trade entity to enjoy unexpected opportunities of investment, and when cash flows of operation are at low level due to the unexpected decrease of demand for produced items, trade entity continues its activity (Marchika, 2010). What is life cycle of financial flexibility? Financial flexibility is defined by the stages of life cycle of a company including birth, growth and maturity. Therefore, financial flexibility is considered as a degree of capacity of a company that can implement its financial resources in the direction of reactive actions, and maximize the value of company (Myton, 2011). In birth stage, companies don't have enough cash perform their activities, and they should adopt outsourcing strategy in order to meet their financial needs. In growth stage, companies have more financial flexibility than in birth stage. Since in this stage less pressure is imposed on companies to achieve monetary markets and they require a large amount of cash to perform their activities. Therefore, they prefer to meet their financial needs via liability.

But companies have high financial flexibility during maturing stage, and use internal resources to meet their financial needs. The costs of production or services are decreased via suitable management of financing (Harford, 2008). Theoretical concepts of Iran auditing standards regarding financial flexibility include the ability of trade entity based on effective action to change the extent and time of cash flows so that trade entity can react to unexpected opportunities and events (Auditing organization, 2007).

Financial flexibility is discussed in two general forms. Some companies try to preserve their financial flexibility via liquidity maintenance policies, and some other companies adopt a debt conservative policy based on having excess capacity of debt (Frank, 2012). After general definition of financial flexibility, we discuss measurement methods of financial flexibility. There are two measurement methods for financial flexibility according to findings of Danial et al (2008):

1) Leverage ratio $\quad$ Leverage ratio= $\frac{total\ debts}{total\ assets}$

2) Liquidity ratio $\quad$ Liquidity ratio= $\frac{Cash}{total\ assets}$

Hasanlou et al (2012) conducted a research on "the tools of new management in the performance evaluation of Tehran listed firms designing a model using TOPST method and sensitivity analysis. They tried to design a model for evaluating the performance of firms using TOPSIS method and sensitivity analysis. Obtained results showed that the implementation of TOPSIS method and sensitivity analysis lead to more precise analysis of financial statements and evaluation of firms performance.

Rahmani et al (2012) conducted a research on "the impact of financial flexibility on the extent of investment and the establishment of value". The results showed that financial flexibility has a negative impact on the extent of investment. It has a significant positive impact on the establishment of value. Market considers the firms that have financial flexibility as valuable.

Haghighat and Bashiri (2011) conducted a research on "the impact of final flexibility on life cycle of firms". The results of this research showed that firms take less risks regarding financing via debt in birth stage, and they have a more balanced leverage. Firms use debt financing, and have a high leverage ratio in growth stage. Firms rely on internal resources, and have low leverage ratios in maturity stage.

Franklin and Mutasami (2011) conducted a research on "the impact of financial leverage on decisions of firm's investment". The results of this research showed that there is a meaningful positive relationship between financial leverage and investment. In addition, they found that cash flow and accumulated profit play an important role in investment decisions.

In other research, Denis (2011) showed firms that adopted debt financing policy try to return status quo by limiting dividend distribution in next year. The results of this research are associated with

theory of financing hierarchy and financial flexibility based on having excess capacity of debt and superiority of debt financial over capital financing. In addition, the results of research show the superiority of financial flexibility via debt over financial flexibility via cash preservation.

The results of Marchika and Mura's research showed that under a conservative policy of debt firms will be able to enjoy a flexible financial structure.

2. The hypotheses of research

1-First main hypothesis: there is a meaningful relationship between financial flexibility and the ratio of book value to market value.
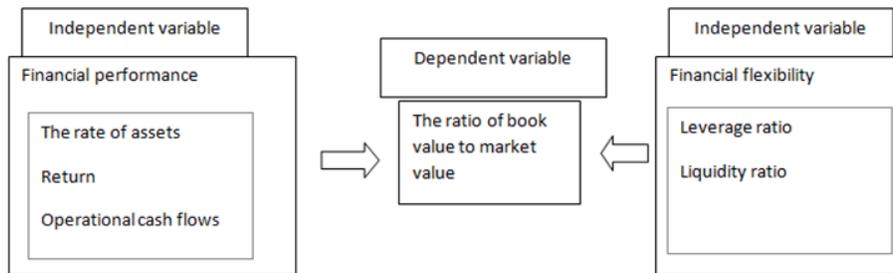
2.1. Subordinate hypotheses

1-1 there is a meaningful relationship between leverage ratio and the ratio of book value to market value.

1-2 there is a meaningful relationship between liquidity ratio and the ratio of book value to market value.

2- Second main hypothesis: there is a meaningful relationship between financial performance and the ratio of book value to market value.

2.2. Subordinate hypotheses

2-1 there is a meaningful relationship between the rate of assets return and the ratio book value to market value.

2-2 there is a meaningful relationship between operational cash flow and the ratio book value to market value.

Fig. 1: conceptual model of research (made by researcher)

3. The method of research

This research is causal in terms of relationship between variables. It is applied in terms of purpose, and is descriptive- survey in terms of method in which we use historical information of firms and statistical methods to confirm or reject hypotheses.

3.1. Statistical population and sample

In this research, statistical population includes all nonfinancial Tehran listed firms from 2009 to 2013. In this research, the number of studied sample is 50 firms. The sampling method is systematic elimination method.

3.2. The tool of collecting information

In this research, researcher used library method including the study of reliable internal and external books and articles to collect information regarding theoretical bases of research. In the next step, research used secondary information to test the variables of research. Therefore, researcher used financial statements of firms, computerized information banks, research management site and Islamic studies to collect required data of this research. Collected data is classified using Excel software, and entered Eviews software according to studied variables. Final analysis is performed by Eviews software.

3.3. Data analysis

In order to summarize data, first we calculated interested ratios using collected data for every firm and very year. All activities of summary operation were performed using Excel software.

Then, Hypotheses were tested by Eviews software. In this research, we used panel data method. This method increases statistical power of coefficients, and decreases the co linearity between variables. It leads to more efficient estimation via increasing the degree of freedom. In present research, we used two methods i.e. static panel data dynamic panel data methods to study the impact of financial flexibility and financial performance on the ratio of book value to market value of equity. In static panel data method, after conducting Hasman test and selection of fixed effects method we estimated the coefficients of model using estimated generalized least squares (EGLS) method. We estimated the coefficient of model again in the form of dynamic process and using advanced method of generalized momentum (GMM) in order to increase the reliability of obtained results.

3.4. Hypotheses test

First hypothesis test

-In first hypothesis, researcher studies the relationship between leverage ratio and the ratio of book value to market value of equity of studied firms in this research. We use the following model to test this hypothesis:

$$BM = \beta_0 + \beta_1 Leverage\ ratio + \beta_2 SIZE + \epsilon_{it}$$

Table1: analysis and descriptive statistics

Studied variable	Number of observations	mean	median	Standard deviation	maximum	minimum
Book value to market value	50	0/61	0/65	0/26	0/95	0/21
Assets return	50	0/58	0/38	0/16	0/96	0/29
Operational cash flows	50	3856954121	3125698351	1958465211	5964851250	1685947516
Leverage ratio	50	1/21	1/138	1/74	1/95	0/11
Liquidity ratio	50	0/42	0/32	0/18	0/91	0/10
Firm size	50	9/8194	8/26594	10/2951	11/269	4/561

Table 2: the results of first hypothesis test

Method of estimated generalized least squares (EGLS)			Advanced method of generalized Momentum (GMM)	
Studied independent variable	Coefficients	Meaningfulness level	Coefficients	Meaningfulness level
Constant	3/659	0/001		
Leverage ratio	0/3265	0/001	0/4251	0/001
Firm size	0/2165	0/000	0/3215	0/006
F statistics	8.2654			
Probability of F statistics	0/000			
Adjusted determination coefficient	0/62514			
Durbin- Watson test	2/012			

According to the obtained P-value (meaningfulness level), all correlation coefficients of model are meaningful, and the value of Durbin-Watson statistics i.e. 2/012 shows the lack of correlation between errors. The obtained results show that there is a positive and meaningful relationship between leverage ratio and the ratio of book value to market value of equity so that independent Variable explains 62 percent of behavior of dependent variable. Therefore, according to above results first hypothesis of research based on the existence of meaningful relationship between leverage ratio and the ratio of book value to market value of equity is confirmed.

According to the coefficient of leverage ratio variable (0.3265), this relationship is acceptable.

Second hypothesis test

In second hypothesis, researcher studies the relationship between liquidity ratio and the ratio of book value to market value of equity of Tehran listed firms.

We use the following model to test this hypothesis:

$$BM = \beta_0 + \beta_1 liqidity\ ratio + \beta_2 SIZE + \epsilon_{it}$$

Table 3: the results of second hypothesis test

Method of estimated generalized least squares (EGLS)			Advanced method of generalized Momentum (GMM)	
Studied independent variable	Coefficients	Meaningfulness level	Coefficients	Meaningfulness level
Constant	0/7859	0/00000		
Liquidity ratio	0/167	0/013	0/241	0/012
Firm size	0/0215	0/0065	-0/168	0/03
F statistics	4/6251			
Probability of F statistics	0/001			
Adjusted determination coefficient	0/3821			
Durbin- Watson test	2/10			

According to above table level, meaningfulness level of liquidity ratio is less than 0/5. Therefore, we can conclude that there is a meaningful relationship between liquidity ratio and the ratio of book value to

market value of equity of studied firms in this research.

The value of this relationship is 0/167.Adusted coefficient shows that independent variable of

liquidity ratio explains about 38 percent of behavior of dependent variable. The value of Durbin- Watson test (2/ 10) shows the lack of correlation between errors.

Third hypothesis test

3- In third hypotheses, researcher studies the relationship between the rate of assets return and the ratio of book value to market value of equity of Tehran listed firms.

We use the following model to test this hypothesis:

$$BM = \beta_0 + \beta_1 ROA_{it} + \beta_2 SIZE + \epsilon_{it}$$

Table 4: the results of third hypothesis test

Method of estimated generalized least squares (EGLS)			Advanced method of generalized Momentum (GMM)	
Studied independent variable	Coefficients	Meaningfulness level	Coefficients	Meaningfulness level
Constant	2/1652	0/00000		
The rate of assets return	-0/4561	0/000	-0/562	0/002
Firm size	0/124	0/005	0/216	0/007
F statistics	5/2164			
Probability of F statistics	0/001			
Adjusted determination coefficient	0/6921			
Durbin- Watson test	2/06			

According to the obtained results, meaningfulness level of the rate of assets return is less than 0/05. Therefore, we can conclude that there is a meaningful relationship between the rate of assets return and the ratio of book value to market value of equity of studied firms in this research. The value of this relationship is -0/4561 that shows reverse relationship between variables adjusted coefficient shows that independent variable of the rate of assets return explains about 69 percent of behavior of dependent variable. The value of Durbin- Watson test (2/06) shows the lack of correlation between errors.

Fourth hypothesis test

4- In fourth hypotheses, researcher studies the relationship between operational cash flows and the ratio of book value to market value of equity of interested firms in this research.

We use the following model to test this hypothesis:

$$BM = \beta_0 + \beta_1 COF + \beta_2 SIZE + \epsilon_{it}$$

Table 5: the results of fourth hypothesis test

Method of estimated generalized least squares (EGLS)			Advanced method of generalized Momentum (GMM)	
Studied independent variable	Coefficients	Meaningfulness level	Coefficients	Meaningfulness level
Constant	4/215	0/001		
Operational cash flows (CFO)	0/0265	0/023	0/0351	0/011
Firm size	0/021	0/016	0/0215	0/0006
F statistics	4/251			
Probability of F statistics	0/000			
Adjusted determination coefficient	0/271			
Durbin- Watson test	2/14			

According to obtained P-value (meaningfulness level), all correlation coefficients of model are meaningful.

The value of Durbin- Watson statistics i.e. 2/14 shows the lack correlation between errors. Obtained results show that the coefficient of variables of operational cash flows and firm size is positive and meaningful so that these variables explain about 27 percent of behavior of dependent variable. Therefore, fourth hypothesis of research based on the existence of meaningful relationship between operational cash flows and the ratio of book value to market value of equity is confirmed. According to the coefficient of cash flows variable (0/0265), this relationship is not very strong.

4. The results of hypotheses

4.1. The results of first subordinate hypothesis test

As noted previously, according to obtained P-value (meaningfulness level), all correlation coefficients of model are meaningful. The value of Durbin- Watson statistics (2/01) shows lack of correlation between errors. Obtained results show that there is a positive and meaningful relationship between leverage ratio and the ratio of book value to market value of equity so that independent variable explains about 62 percent of behavior of dependent variable. Therefore, first hypothesis of research based on the existence of meaningful relationship between leverage ratio and the ratio of book value to market value of equity is confirmed. According to the coefficient of leverage ratio variable (0/3265), this relationship is acceptable.

4.2. The result of second subordinate hypothesis test

In second hypothesis, researcher evaluates the relationship between liquidity ratio and the ratio of book value to market value of equity of Tehran listed firms. As noted previously, meaningfulness level of liquidity ratio is less than 0/05. Therefore, we can conclude that there is a meaningful relationship between liquidity ratio and the ratio of book value to market value of equity of studied firms in this research. The value of this relationship is 0/167.

Adjusted determination coefficient shows that independent variable of liquidity ratio explains about 38 percent of behavior of dependent variable. The value of Durbin- Watson test (2/10) shows the lack of correlation between errors.

4.3. The results of third subordinate hypothesis test

In third hypothesis, researcher evaluates the relationship between the rate of assets return and the ratio of book value market value of equity of Tehran listed firms. As noted previously, meaningfulness level of the rate assets return is less than 0/05. Therefore, we can conclude that there is a meaningful relationship between the rate of assets return and the ratio of book value to market value of equity of studied firms in this research. The value of this relationship is -0/4567 that shows the reverse relationship between variables. Adjusted determination coefficient indicates that independent variable i.e. the rate of assets return explains about 69 percent of behavior of dependent variable. The value of Durbin- Watson test (2/06) shows, the lack of correlation between errors.

4.4. The result of fourth subordinate hypothesis test

In the fourth hypothesis, researcher evaluates the relationship between operational cash flows and the ratio of book value to market value of equity of studied firms in this research. After collecting data, researcher estimated model using Eviews software. According to obtained P-value (meaningfulness level), all correlation coefficients of model are meaningful. The value of Durbin- Watson statistics (2/14) shows the lack of correlation between errors.

Obtained result show that the coefficient of variables of operational cash flows and firm size is positive and meaningful so that these variables explain about 27 percent of behavior of dependent variable. Therefore, Fourth hypothesis of research based on the existence of meaningful relationship between operational cash flows and the ratio of book value to market value of equity is confirmed. According to the coefficient of variable of cash flows (0/0265), this relationship is not very strong.

5. Conclusion

In this research, researcher evaluated the relationship between financial flexibility and financial performance with the ratio of book value to market value in Tehran listed firms. According to obtained results, we can conclude that based on the extent of transparency in capital market and current supporting, financial flexibility can result in the decrease of firm return. Financial flexibility implies losing some benefits in front of gaining other ones. For example, the maintenance of assets that are easily exchanged in the market shows financial flexibility, but this may indicate the acceptance of a return rate that is lower than rate we can gain by investment in flexibility can decrease the risks that are related to operation.

Generally, at every level of operational risk a trade organization that has high financial flexibility faces less risk than a trade organization with low financial flexibility.

Financial statements present information that is useful evaluating financial flexibility. For example, cash flow statement provides this information via reporting cash flows that result from operation and disclosing their relation with profit. This information can be useful for predicting future cash flows.

The more the net amount of future cash flows that result from operation for a trade organization, it will be more powerful to cope with unexpected changes of operational conditions.

The statements of financial performance can provide information that are useful to evaluate the power of trade organization for costs reduction when earnings decreases.

Balance sheet presents information for evaluation of financial flexibility via determining the nature of existent resources and the time and amount of current claims.

5.1. Suggestions of research

1-According to the lower risk of institutes that have higher financial flexibility, it is necessary that securities exchange's firms, institutes and organizations pay attention to this point.

2- According to the results of research, investors that want to gain higher return of their investment should consider the extent of financial flexibility of firm and the manner of financial performance in the selection of their investment. They should select firms that have reasonable flexibility.

References

Auditing organization, codification committee of auditing standards (2007), accounting standards, 160 periodicals.

Daniel, N.D.Denis, D.J.Naveen, L. (2008).Dividends, Investment, and Financial Flexibility. Drexel University Lebow College Of Business, Purdue University Krannert School OF Management Temple University Lalitha Naveen Fox School Of Business, Working Paper available at :www.ssrn.com

Denis, D. J. and Mckeon, S. B. (2011). Debt financing and financial flexibility evidence from pro-active leverage increases, SSRN Working Paper.

Frank, M. Z. and Goyal, V. K. (2012). Capital structure decisions: Which factors are reliably important, SSRN Working Paper.

Franklin John, S. and Muthusamy, K. (2011). Impact of Leverage on Firms Investment Decision. International Journal of Scientific & Engineering Research Volume 2, Issue 4, April-2011, ISSN 2229-5518.

Gamba, A. and Triantis, A. (2013). The value of financial flexibility. The Journal of Finance, 63 (5), 263-296.

Graham, J. R. (2009). The theory and practice of corporate finance: Evidence from the field. Journal of Financial Economics, 60, 187-243.

Haghighat. Hamid and Bashiri. Wahab (2011), the impact of financial (flexibility on life cycle of firms, MSC thesis, Imam khomaini international university, Qazvin).

Haghight. Hamid and Bashiri. Arash (2007), study the relationship between profit and valuable cash flows of company, management message, no. 210, pp 201-219.

Harford, J. (2008). Corporate cash reserves and acquisitions. Journal of Finance, 54, 1997-1969.

Hasanlou. Saleh, Elham. Karim, Mehrgan. Mohammad Reze and Tehrani. Reza (2012), the tools of new management for evaluating the performance of Tehran listed firms (designing a model using TOPSIS method and sensitivity analysis), First national seminar of new management science, Gholestan province, Gorgan.

Marchica, M .T. and Mura, R. (2010). On the interactions of financing and investment decisions. Managerial Finance 35 (No. 8), 691-699.

Marchica, M. T. and Mura, R. (2010). Financial flexibility, investment ability, and firm value: Evidence from firms with spare debt capacity, Financial Management. 1339-1368.

Minton, B. A. and Wruck, K. H. (2011). Financial conservatism: Evidence on capital structure from low leverage firms. Dice Center Working Paper.

-Myers, S.C. and S.M. Turnbull(1977). Capital budgeting and the capital asset pricing model: Good newsand bad news, Journal of Finance 32, 321-333.

Rahmani. Ali, Gholami. Fardin and Pakizeh. Kamran (2012), the impact of financial flexibility on the extent of investment and the establishment of value, the magazine of accounting advancement, shiraz university, VOL 4, no 2, pp53-76

Scott, William R. (2007). Financial accounting theory. pp 295-326.