Management Science Letters 9 (2019) 133–138

Contents lists available at GrowingScience

Management Science Letters

homepage: www.GrowingScience.com/msl

The impact of financial flexibility on capital structure decisions: Some empirical evidence

Mehdi Pendar[a*], Hussain Tayar[b] and Soltanali Karimeh[c]

[a]*Department of Economics, University of Tehran, Iran*
[b]*University of Karbala, Iraq*
[c]*Masters of Accounting*

C H R O N I C L E

Article history:
Received: September 19, 2018
Received in revised format: September 29, 2018
Accepted: October 14, 2018
Available online:
October 15, 2018

Keywords:
Financial flexibility
Final cash value
Data panel
Capital structure

A B S T R A C T

This paper presents an empirical investigation to study the effect of financial flexibility on capital structure decisions on selected firms listed in Tehran Stock Exchange over the period 2006-2018. The results indicate that the cash value of the previous years had no meaningful relationship with the current year's financial leverage, which suggests that flexibility in previous years could not explain the financial leverage of the coming years and financial leverage of companies changes did not occur based on the past years performance. When the ultimate value of financial flexibility is high, the impact of different variables, for example, profits, depreciation, and depreciation costs, fixed assets, etc., on leverage is of little importance, with a slight change in leverage. Companies with a high final value of financial flexibility are willing to maintain their current debt capacities, but it is significantly possible that they target deliberate or temporary deviations from their leverage ratios.

1. Introduction

Flexibility plays an important role in empowering managers to invest in the future. Problems in the capital market have made it necessary to maintain flexibility for companies to use profitable opportunities (Harris & Raviv, 1991). Choosing the optimal capital structure and different financing practices is a major concern of company executives (Welch, 2004). The appropriate capital structure in each company affects various activities. In more traditional capital structure theories such as static equilibrium theory, the company tries to choose and achieve a desirable debt ratio (Yang et al., 2010). According to this theory, the hypothesis of the optimal debt ratio of a company is determined on the basis of the balance between costs and borrowing resources (Heston et al., 1995). In other words, from the perspective of this hypothesis, the company is struggling to balance the value of tax savings and the cost of bankruptcy (Baker & Wurgler, 2002). According to Myers and Majluf (1984), companies provide specific hierarchies in providing needed financial resources. The formation of this hierarchy is the result of information asymmetry. In cases where there is no information symmetry between managers and investors, directors prefer internal finance. These theories have been criticized for lack of flexibility (DeAngelo et al., 2009).

* Corresponding author.
E-mail address: Mpendar@ut.ac.ir (M. Pendar)

doi: 10.5267/j.msl.2018.10.010

These theories ignored investment opportunities and the ability of companies to invest in and, basically, they did not pay attention to the company's life and the willingness of companies to maintain debt capacity in high-growth young companies (Hamada, 1972). Researchers have found that young and high growth companies are more likely to maintain their debt capacities and, in other words, have more flexibility in responding to emerging investment opportunities and guaranteeing company growth (Masulis, 1983). In fact, companies need to keep the company's capacity and potential for future growth, given future opportunities. In other words, executives of companies must pay attention to financial flexibility and try to have a degree of flexibility for the company and the capacity to borrow more for the company. In fact, the main problem is that some companies make their decisions, regardless of their debt capacity and future profitable opportunities (Campbell, 1987). The key question is whether managers are focusing on flexibility in their future decisions, and is this flexibility in the capital market from the point of view of the value investors? Therefore, in this research, we are going to examine the impact of flexibility on capital structure decision-making. Byoun (2007) defines financial flexibility as the degree of capacity and speed that a company can provide the resources required for defensive (payback) and aggressive (investment) responses to increase company value. Financial flexibility can be defined as the ability of companies to reallocate cash flows between bonds and shareholders over time to better match operational risk and create long-term value (Pavlov et al., 2018).

There are many definitions of capital structure. Capital structure is a combination of ordinary shares, preferred shares and related subscriptions, accrued profit and debt used by the entity to finance its assets. The financial structure represents the left side of the balance sheet. Some consider capital structure to be the same as a financial structure, but another group distinguishes between these two. The second group's argument is based on the fact that capital structure is the long-term financing sources of the company. Since current debt is spent on current affairs of the company, it does not have a significant effect on the return on equity and thus the value of the company. In the sense of the company's capital structure, long-term funds are used. Others describe the capital structure as a general claim on company assets including publicly traded securities, private investments, bank debt, business debt, lease contracts, tax liabilities, retirement benefits, deferred remuneration for managers and employees, good performing deposits, obligations related to goods and other probable debts (Myers, 1984; Titman & Wessels, 1988).

Capital structure is a combination of debt and equity, with which companies finance their assets. Companies use two sources of debt and equity to combine their capital structure. The choice between debt and equity as a source of new financing is influenced by internal and external factors that affect the structure of the company's capital. In order to determine the capital structure of companies, first of all, we need to determine the amount of new financial needs according to the financial needs of the investment, and then proceed to the type of source. The purpose of determining the structure of capital is to identify the composition of the funds in order to maximize the wealth of the shareholders or the actual owners of the company. Of course, changes in the wealth of shareholders are affected by the various factors that the composition of capital structure is one of them. If a company issues more bonds, the headline and financial leverage ratio will increase. If a company achieves a higher rate of return on loans, earnings per share will increase, otherwise, it will face earnings per share (EPS) decline.

2. The proposed study

The proposed study of this paper considers the following hypotheses,

1. There is an inverse relationship between financial flexibility (final cash value) and capital structure (financial leverage) during the current fiscal year.
2. There is a direct relationship between financial flexibility (final cash value) and capital structure (financial leverage) of the past year.
3. There is a direct relationship between the flexibility of cash (final value of cash) and the financial structure (financial leverage) two years ago.

4. There is a direct relationship between financial flexibility (final cash value) and financial structure (financial leverage) three years ago.

The proposed study of this paper uses the financial information of the stocks listed on Tehran Stock Exchange over the period 2006-2018 to collect the information on a monthly basis. The study use the Clark's (Clark, 2010) model to measure the financial flexibility as follows,

$$MVOC_c = \lambda_1 + \lambda_2 \frac{C_{i,t-1}}{M_{i,t-1}} + \lambda_3 \frac{CF_{i,t}}{TA_{i,t}} + \lambda_5 \frac{Dep_{i,t}}{TA_{i,t}} + \lambda_6 Size_{i,t} + \lambda_7 \frac{FA_{i,t}}{TA_{i,t}}, \tag{1}$$

where *MVOC* is the dependent variable and represents the final value of cash as a measure of financial flexibility. Moreover, *C* represents cash and marketable securities, *CF* denotes cash flow, *Dep* stands for depreciation of the financial assets, *Size* presents the size of the firm, which is calculated by taking the natural logarithm of the total assets, *M* is the market value of equity, *FA* is fixed assets and finally *TA* is total assets. Also, $\lambda_1, \ldots \lambda_6$ represent the coefficients, which are estimated. This model reflects the stock-holders' response in the form of unusual returns to cash fluctuations. Also we have,

$$\begin{aligned} r_{i,t} = {} & \lambda_0 + \lambda_1 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \lambda_2 \frac{C_{i,t-1}}{M_{i,t-1}} . \frac{\Delta C_{i,t}}{M_{i,t-1}} + \lambda_3 \frac{CF_{i,t}}{TA_{i,t}} . \frac{\Delta C_{i,t}}{M_{i,t-1}} + \lambda_4 MB_{i,t} . \frac{\Delta C_{i,t}}{M_{i,t-1}} + \lambda_5 \frac{Dep_{i,t}}{TA_{i,t}} . \frac{\Delta C_{i,t}}{M_{i,t-1}} + \\ & \lambda_6 Size_{i,t} . \frac{\Delta C_{i,t}}{M_{i,t-1}} + \lambda_7 \frac{FA_{i,t}}{TA_{i,t}} . \frac{\Delta C_{i,t}}{M_{i,t-1}} + \lambda_8 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \lambda_9 \frac{\Delta NA_{i,t}}{M_{i,t-1}} + \lambda_{10} \frac{\Delta I_{i,t}}{M_{i,t-1}} + \lambda_{11} \frac{\Delta D_{i,t}}{M_{i,t-1}} + \lambda_{12} \frac{C_{i,t-1}}{M_{i,t-1}} \\ & + \lambda_{13} \frac{NF_{i,t}}{M_{i,t-1}} + \lambda_{14} \frac{CF_{i,t}}{TA_{i,t}} + \lambda_{15} MB_{i,t} + \lambda_{16} \frac{Dep_{i,t}}{TA_{i,t}} + \lambda_{17} Size_{i,t} + \lambda_{18} \frac{FA_{i,t}}{TA_{i,t}} + \varepsilon_{i,t}, \end{aligned} \tag{2}$$

Faulkender and Wang (2006) used Eq. (6) for estimating the marginal value of cash. We calculate the monthly abnormal return for each month in the fiscal year and sum the 12 monthly abnormal returns to arrive at the annualized abnormal return.

The second model is not a regression model and uses the following

$$MVOC_{FW} = \beta_1 + \beta_2 \frac{C_{i,t-1}}{M_{i.t-1}} + \beta_3 L_{i,t}, \tag{3}$$

where *L* represents the leverage. In addition, we use the following

$$\begin{aligned} r_{i,t} = {} & \beta_0 + \beta_1 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \beta_2 \frac{C_{i,t-1}}{M_{i,t-1}} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \beta_3 L_{i,t} \frac{\Delta C_{i,t}}{M_{i,t-1}} + \beta_4 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \beta_5 \frac{\Delta NA_{i,t}}{M_{i,t-1}} + \\ & + \beta_6 \frac{\Delta I_{i,t}}{M_{i,t-1}} + \beta_7 \frac{\Delta D_{i,t}}{M_{i,t-1}} + \beta_8 \frac{C_{i,t-1}}{M_{i,t-1}} + \beta_9 L_{i,t} + \beta_{10} \frac{NF_{i,t}}{M_{i,t-1}} + \varepsilon_{i,t}. \end{aligned} \tag{4}$$

$$\hat{L}_{i,t} = \alpha_0 + \alpha_1 \frac{CF_{i,t}}{TA_{i,t}} + \alpha_2 MB_{i,t} + \alpha_3 \frac{Dep_{i,t}}{TA_{i,t}} + \alpha_4 Size_{i,t} + \alpha_5 \frac{FA_{i,t}}{TA_{i,t}} + \alpha_6 MVOC_{i,t} + \varepsilon_{i,t}. \tag{5}$$

Using some simplification based on what Clark (2012) described, yieds

$$\hat{L}_{i,t} = \alpha_0 + \alpha_1 \frac{CF_{i,t}}{TA_{i,t}} + \alpha_2 MB_{i,t} + \alpha_3 \frac{Dep_{i,t}}{TA_{i,t}} + \alpha_4 Size_{i,t} + \alpha_5 \frac{FA_{i,t}}{TA_{i,t}} + \varepsilon_{i,t}. \tag{6}$$

Here, we calculate the independent variables as follows,

$L_{i,t} = \frac{Total\ Debt}{Total\ Assets}$ represents the leverage and is calculated as a ratio of total debt on total assets. $\Delta C_{i,t}$ represents changes in cash and investments from one period to the next and is calculated through the difference between the cash of the current period and the previous period as follows,

$$\Delta C_{i,t} = \frac{C_{i,t} - C_{i,t-1}}{Total\ Assets}.$$

$M_{i,t-1}$ represents the market value of the company at the beginning of the period and is calculated by multiplying the price of each share by the number of its shares. $\Delta E_{i,t}$ is the change in profits from the company's interest and taxes and is calculated through the difference between the earnings before tax and interest (EBIT) of the current year and the earnings before interest and taxes of the previous year as follows,

$$\Delta E_{i,t} = \frac{E_{i,t} - E_{i,t-1}}{TotalShare}.$$

$\Delta NA_{i,t}$ represents the changes in total assets to non-cash and short-term investments and is calculated as follows.

$$\Delta NA_{i,t} = \left(Total\ Assets_{i,t} - Cash_{i,t} - marketable\ Securities_{i,t}\right) - \left(Total\ Assets_{i,t-1} - Cash_{i,t-1} - marketable\ Securities_{i,t-1}\right).$$

$\Delta I_{i,t}$ represents the financial cost and its changes over a period compared to the previous period which is calculated as follows,

$$\Delta I_{i,t} = \frac{I_{i,t} - I_{i,t-1}}{\text{Total Share}}.$$

$\Delta D_{i,t}$ represents a change in dividend yield from one period to another and is calculated as follows,

$$\Delta D_{i,t} = \frac{D_{i,t} - D_{i,t-1}}{\text{Total Share}}.$$

$NF_{i,t}$ represents the net financing of the company and will be calculated as follows,

$NF = \left(\Delta Debt_{i,t} + \Delta Equity_{i,t}\right)$.

Finally, $FA_{i,t}$ represents the total firm assets and will be divided into total assets for scaling together. For more detailed description of the variables used in this paper see Clark (2010).

In this survey, we calculate the abnormal return is based on the following model, which will be used to calculate its coefficients, namely, alpha and beta, through capital market line as follows,

$$AR_{it} = R_{it} - \left[a_i + \beta_i R_{mt}\right]. \quad (7)$$

For this purpose, we must first calculate the expected yield and use it through the market model or the so-called market line or index, which is obtained through the following model,

$$R_i = a_i + \beta_i R_m. \quad (8)$$

In this survey, we use the monthly information of the average return of the selected firms in Tehran Stock Exchange to provide R_i and R_m and using regression analysis, we have estimated a_i and β_i. Next, we use

these two parameters in Eq. (7) and estimate actual return using $Ln\left(P_{it} / P_{i(t-1)}\right)$. Moreover, to estimate the market return we use $Ln\left(I_t / I_{t-1}\right)$. Finally, we calculated *CAR* as follows,

$$CAR = \sum_{t=1}^{T} AR_t \ .$$

3. The results

In this section, we present the results of the implementation of the methods discussed earlier to examine the hypotheses of the survey.

3.1. The first hypothesis

The first hypothesis of this survey investigates whether there is an inverse relationship between financial flexibility (final cash value) and capital structure (financial leverage) during the current fiscal year. We have used two models described earlier in this survey and Table 1 demonstrates the results of two methods.

Table 1
The results of examining the first hypothesis

Model	coefficient	t-value	Sig.	Result
Clark (2010)	0.058303	2981.796	0.000	Confirmed
Faulkender, M., & Wang, R. (2006)	0.000829	4.693318	0.000	Confirmed

The first model of research indicates that there was a significant inverse relationship between the final cash value (financial flexibility) in the current year and the financial leverage (capital structure), in other words, the higher the company's cash value (corporate flexibility) the lower the debt of the company, that is, the company will have less interest in raising debt. But according to the results of this research and the sign of the coefficient and its significance in both models, it can be concluded that the final value of cash (financial flexibility) has an effect on the financial leverage (capital structure). Perhaps one of the reasons why the results of the research did not confirm the hypothesis is the investment opportunities in Iran and its economic structure, as in Iran, inflation is always much higher than the rate of concessional facilities, and firms are taking advantage of their profit because of their own inflations. Table 2 also shows the results of the testing the other hypotheses.

Table 2
The results of examining the second to fourth hypothesis

	Model	coefficient	t-value	Sig.	Result
H_2	Clark (2010)	4.01E-05	1.126544	0.2603	Not-confirmed
H_2	Faulkender, M., & Wang, R. (2006)	0.001051	2.649779	0.0082	Confirmed
H_3	Clark (2010)	4.56E-05	1.345565	0.1788	Not-confirmed
H_3	Faulkender, M., & Wang, R. (2006)	0.001008	2.596270	0.0096	Confirmed
H_4	Clark (2010)	1.84E-05	0.585954	0.5581	Not-confirmed
H_4	Faulkender, M., & Wang, R. (2006)	0.000303	1.523629	0.1280	Not-confirmed

The results of the second to fourth hypotheses of the research based on the Clark model indicate that the effect of the final value of the cash in the previous years is not significant on the current year's leverage, which suggests that flexibility in previous years cannot be a financial leverage for the coming years and corporate leverage, regardless of the company's previous years' status no matter the effect is increasing or decreasing. It can be concluded that this hypothesis is not confirmed by Clark's model. But Faulkender

and Wang's (2006) model shows that there is a meaningful and direct relationship between corporate financial flexibility in the past years and the financial leverage of the current year.

4. Conclusion

In this paper, we have presented an empirical investigation to study the effect of financial flexibility on capital structure decisions on selected firms in Tehran Stock Exchange over the period 2006-2018. The study has implemented two models to examine the hypotheses of the survey. The results have indicated that the cash value of previous years had no meaningful relationship with the current year's financial leverage, which suggests that flexibility in previous years could not describe the financial leverage of the coming years and financial leverage of companies changes did not happen based on the past years performance. When the ultimate value of financial flexibility was high, the impact of different variables, for example, profits, depreciation, and depreciation costs, fixed assets, etc., on leverage was of little importance, with a slight change in leverage.

References

Baker, M., & Wurgler, J. (2002). Market timing and capital structure. *The Journal of Finance*, *57*(1), 1-32.

Byoun, S. (2007). Financial flexibility, leverage, and firm size. *Waco, TX. January*, *3*.

Campbell, J. Y. (1987). Stock returns and the term structure. *Journal of Financial Economics*, *18*(2), 373-399.

Clark, B. J. (2010). The impact of financial flexibility on capital structure decisions: some empirical evidence.

DeAngelo, H., DeAngelo, L., & Skinner, D. J. (2009). Corporate payout policy. *Foundations and Trends® in Finance*, *3*(2–3), 95-287.

Faulkender, M., & Wang, R. (2006). Corporate financial policy and the value of cash. *The Journal of Finance*, *61*(4), 1957-1990.

Hamada, R. S. (1972). The effect of the firm's capital structure on the systematic risk of common stocks. *The journal of finance*, *27*(2), 435-452.

Harris, M., & Raviv, A. (1991). The theory of capital structure. *The Journal of Finance*, *46*(1), 297-355.

Heston, S. L., Rouwenhorst, K. G., & Wessels, R. E. (1995). The structure of international stock returns and the integration of capital markets. *Journal of Empirical Finance*, *2*(3), 173-197.

Masulis, R. W. (1983). The impact of capital structure change on firm value: Some estimates. *The Journal of Finance*, *38*(1), 107-126.

Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, *39*(3), 574-592.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187-221.

Pavlov, A., Steiner, E., & Wachter, S. (2018). REIT capital structure choices: Preparation matters. *Real Estate Economics*, *46*(1), 160-209.

Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of Finance*, *43*(1), 1-19.

Welch, I. (2004). Capital structure and stock returns. *Journal of Political Economy*, *112*(1), 106-131.

Yang, C. C., Lee, C. F., Gu, Y. X., & Lee, Y. W. (2010). Co-determination of capital structure and stock returns—A LISREL approach: An empirical test of Taiwan stock markets. *The Quarterly Review of Economics and Finance*, *50*(2), 222-233.