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Drivers of the Target Financial Leverage and Speed of Adjustment in Small and Medium-Sized Companies at Different Stages of Life Cycle

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KEYWORDS

Capital Structure,
Target Leverage,
Life Cycle,
Speed of Adjustment,
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ABSTRACT

According to the results of recent studies, the main causes of companies' failure are inadequate and inappropriate financing. Therefore, one of the key tasks of financial managers is to determine the best combination of the company's financial resources, or in other words, the target financial leverage. On the other hand, growth cycles are very useful for analyzing business cycles in countries that have experienced severe recessions and booms, such as Iran. The purpose of this study is to investigate the drivers of the target financial leverage and the speed of adjustment of financial leverage at different Stages of the life cycle. The statistical population is small and medium-sized companies active in Tehran Stock Exchange. For this purpose, 112 companies were selected by systematic elimination sampling method between 2015 to 2020 and Eviews 9 software was used. The results indicate that for firms in the growth and maturing stages of their lifecycle, profitability, firm size, and tangible assets are stronger positive drivers for target leverage and when the company One stage of the life cycle goes to the next, the company slows down its gap with the target lever, and the speed of adjusting the optimal structure is reduced.

Introduction

The financial management literature suggests that decisions about capital structure must be in line with the value creation for the company. In order to maximize the value of the company, it is necessary

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to decide on the best investments, their combination, and financing (Al-Dawood et al., 2015). Therefore, one of the major concerns of financial managers is to determine the optimal combination of capital structure, which requires optimal utilization of financial resources and yielding a return in proportion to the risk. In the case of small and medium-sized companies (SMEs), the lack of capital and lack of access to financial resources are among the biggest problems faced by these companies. SMEs play a key role in creating employment, providing the right platform for innovation and exploiting small funds. In addition to the employment, the presence of some SMEs in the corporate supply chain cannot be ignored (Qasemian, 2014). Given the importance of these companies in Iran and the financial barriers that eventually led to their weakening performance, it is necessary to address the issue of optimal capital structure of SMEs in Iran and other countries.

There are different definitions for the structure of capital. Each of these definitions refers to a specific aspect of financing methods. Cooper (1983) views capital structure as "the ratio of older (higher-rated) long-term securities to the sum of related investments". Hussey (1999) describes the capital structure as "the balance between liabilities and assets, the nature of assets and the composition of corporate borrowing". Also, Belkouyi (2002) introduces the capital structure as a general claim on corporate assets. According to Oino and Ukaegbu (2015), a firm's capital structure explains the financing of its activities using a combination of liability and equity in order to optimize the value of the company. Various theories and models have been presented for capital structure that are classified into two parts. The first is traditional theories, including capital asset pricing model (CAPM), securities market line (SML), net operating income model (NOI), net income model (NI), traditional approach, and Modigliani-Miller theorem (MM). The second is modern theories, including pecking order theory and trade-off theory (Rahnamai Roudposhti & Salehi, 2010). Pecking order theory is one of the theories related to the choice between debt and equity in the capital structure and is based on information asymmetry between management and the external investor of a company. In trade-off theory (Myers, 1984), it is assumed that there is an optimal or target financial leverage ratio and the market considers any deviation from this ratio (either increasing or decreasing) to be undesirable. This optimal financial leverage can be identified by trading off between the costs and returns on the extra debt. The company always strives to improve its performance using the optimal capital structure, in which case the speed of capital structure adjustment is raised. According to Huang and Ritter (2009), the speed of adjustment can be the most important issue in studying capital structure. Speed of Adjustment (SOA) is premised upon the fact that firms have a target capital structure for the next year and strive to achieve this target; the rate at which it attempts to achieve this target is called SOA. The SOA concept has been successfully applied to evaluate the financing decisions of firms. But most, if not all, of the existing studies in the literature are from the US or the developed world context, which cannot be generalized to emerging markets (Supra et al., 2016).

Numerous studies have attempted to identify drivers of target financial leverage and the speed of adjustment of optimal capital structure among firms. These studies include several factors, such as cash flow (Dufour et al., 2018), firm characteristics in terms of level of growth and profitability (Fitzgerald & Ryan, 2018), the behavior of firm-specific characteristics and macroeconomic variables (Kaloudis & Tsolis, 2018; Daskalakis et al., 2017), tax deposits and corporate governance factors (Bilen & Kalash, 2020; Buvanendra, 2018), profitability, firm size, tangible assets, liquidity, asset utilization ratio, and business risk (Kythreotis et al., 2018; Castro et al., 2016; M'ng et al., 2017) as

drivers of target financial leverage and factors influencing changes in the speed of adjustment of optimal capital structure. Another determinant of the speed of adjustment of capital structure is the corporate life cycle (Castro et al., 2016). Corporate life cycle theory states that corporate life, like living things, is driven by a set of anticipated patterns of development, and that the resources, capabilities, strategies, structures, and functions of firms are significantly different depending on the stages of development (Quinn & Cameron, 1983). However, understanding the nature and essence of the life cycle can help to optimize the use of valuable resources and accelerate the adjustment of optimal capital structure, thereby making the company perform better than competitors at the same stage of its life (Adizes, 1979). But so far, few studies at national and international level have examined the relationship between business cycle and corporate capital structure (Hackbarth et al., 2006; Drobetz et al., 2006).

On the other hand, although there have been in-depth studies in the field of capital structure and several theoretical models have been presented to describe the pattern of corporate capital structure over the past four decades, the literature review shows that the studies are mainly focused on explaining capital structure and its adjustment speed in large companies. Therefore, the results of these studies are not suitable for SMEs and the determinants of capital structure in SMEs are not compatible with predicted capital structure in large companies. Research on capital structure, especially in Iran, has focused more on large companies, and so far little research has been done on SMEs (Aghaee et al., 2014). Thus, given the importance of such companies in Iranian developing economy, there is a lack of comprehensive research that separately examines the factors affecting the capital structure and speed of adjustment in these companies. Therefore, since the present study also examines the relationship between business cycle and capital structure and adjustment speed with target leverage at the level of SMEs listed in Tehran Stock Exchange, it may provide a new perspective on investment and stock issues. Based on the explanations provided, the main questions in this study are: What are the drivers of target leverage in SMEs listed in Tehran Stock Exchange? Is the speed of optimal structure adjustment different at different stages of the life cycle?

Literature review and research hypothesis

Financing and investing are two important areas of decision making in a company. When it comes to financing decisions, the manager is trying to determine the best combination of financing or capital structure for his organization (Damodaran, 2001).

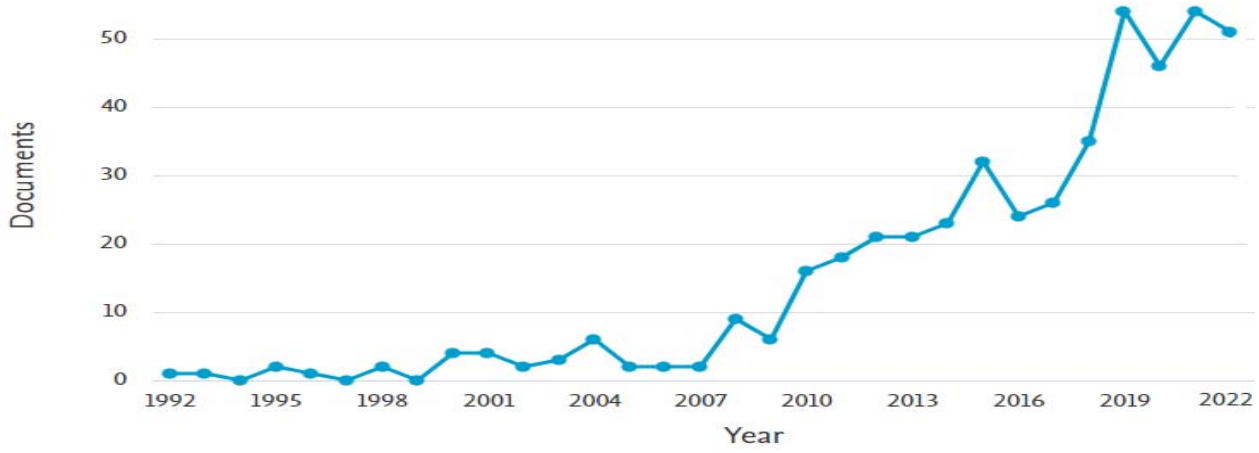
The optimum capital structure is the best possible combination of the proportions of debt and equity. A firm should select the best mix of debt in a capital structure due to the tax advantages of interest as a tax allowable cost. Contrariwise, if firms become over leveraged, this can lead to financial distress. In the corporate system of an organization, corporate financing decisions are of crucial importance. Any decisions made by a corporate board can impact financial leverage policy. For the successful operation of a company, there is a need for well-defined and articulated policies and procedures (Kijkasiwat et al., 2022). Before presenting the results of previous studies in the field of the examined concept, i.e. "financial leverage" and "capital structure" and review related theories, in order to identify the current trend and status of this issue, the results of bibliometric analysis are presented in a scientific and research way. Bibliometric analysis helps to describe the data in the form of major contributions between authors and countries, the most cited countries, the

most prolific authors and the most influential journals in the field of study are determined (Chen et al., 2010).

Figure 1 shows the graph of the number of articles published during different years. As can be seen in Figure 1, since 1992, the writing of articles in the field of "financial leverage" and "capital structure" has been started, and until 2010, several articles have been published in this field every year, and since 2010, 16 articles have been published. Little by little, this issue has received the attention of researchers and the trend of publishing articles has increased.

Figure 1.

The number of articles published during different years in the field of financial leverage and capital structure



Figures 2 and 3 show authors and countries with the most articles in this field. Based on the results, Salehi has published 4 articles and the United States of America has published the most articles in this field with 74 articles.

Figure 2.

The authors with the most articles in the field of financial leverage and capital structure

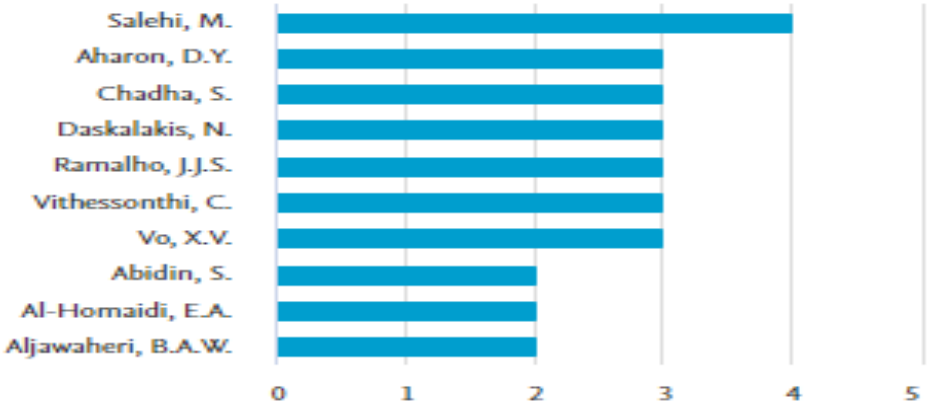


Figure 3.

The Countries with the most articles in the field of financial leverage and capital structure

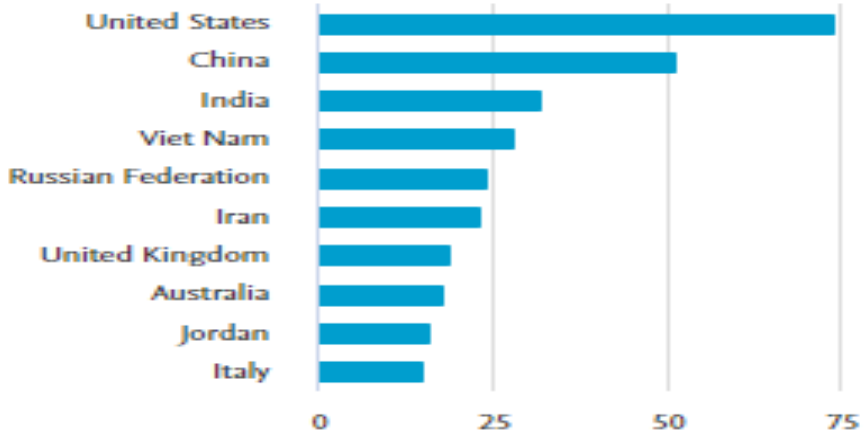
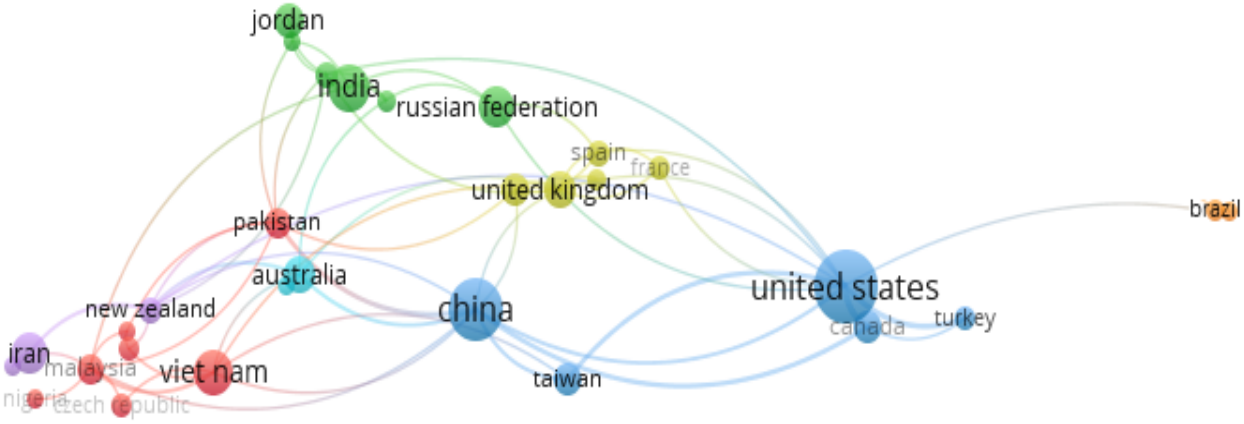


Figure 4 shows the co-authorship network of authors from different countries with the most participation in the field of "Financial Leverage" and "Capital Structure". The United States of America has cooperated the most with Canada and then with Turkey.

Figure 4.

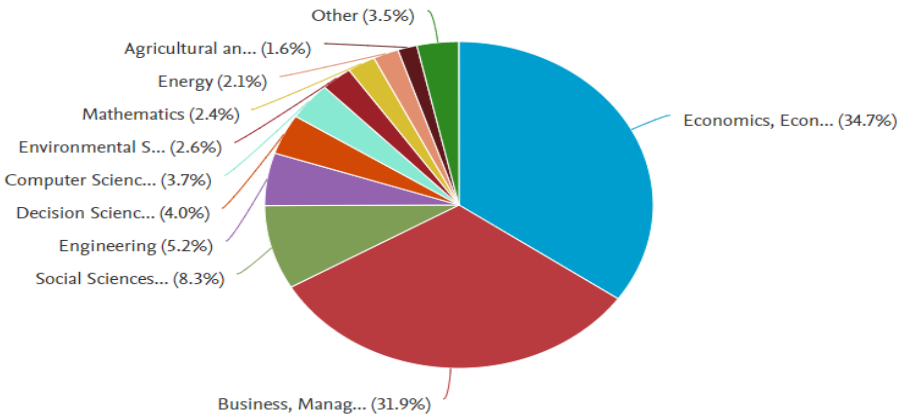
Co-authored network of authors from different countries with the most participation in the field of financial leverage and capital structure



As can be seen in Figure 5, the review of research literature in the field of "financial leverage" and "capital structure" has been mainly focused in the fields of “Economics, Econometrics and Finance” and then “Business, Management and Accounting”.

Figure 5.

Analysis of research literature in the field of financial leverage and capital structure based on publication in scientific fields



The theoretical models of capital structure (trade-off, agency cost, and pecking order) are shown (Bae et al., 2017; Bae et al., 2018) to be generalizable to the types of debt that firms use in their leverage decisions and along the extensive and intensive margins (Ramalho & da Silva, 2009). According to Myers and Majluf (1984), trade-off theory assumes that capital structure is optimal. This structure is accessible through a combination of different financing sources that balance the costs and benefits of debt financing. In the static trade-off model, there are four general forecasts based on bankruptcy costs, agency theory, taxes, and financing costs. According to bankruptcy cost forecasts, the expected bankruptcy costs will increase with the decrease in the profitability of a company and this will drive companies toward financial leverage. Also, the greater the volatility of a company's profitability, the greater the expected bankruptcy costs. Therefore, such companies use less debt to finance and strive to use the optimal capital structure to improve their performance. Investing in fixed assets may reduce the cost of creating or increasing the amount of debt, since added fixed assets are used to finance debt as a pledge. In addition to Long and Malitz (1983), Sheel (1994), and Tang and Jang (2007) inferred the positive effect of fixed asset investment on corporate financial leverage. In contrast to arguments for a direct relationship between fixed asset investment and financial leverage, other arguments also consider this relationship to be reverse. For example, regarding the relationship between the operating leverage that is determined with the degree of fixed assets of the firm and the financial leverage, it is argued that the presence of fixed assets increases the volatility (fluctuation) of the firm's future earnings. Thus, it can be assumed that there is a negative relationship between operational leverage and financial leverage (Tavakolnia et al., 2014). Therefore, there is a direct relationship between the financial leverage and the objectivity of assets. According to the trade-off theory, since larger companies are more dispersed, they are less likely to go bankrupt and therefore, have a lower debt cost. Consequently, larger companies are expected to have more financial leverage (Kashani Pour & Momeni Yansari, 2012). Therefore, a significant relationship is expected between company size and capital structure. Firm size is an important factor that conditions the speed of adjustment of the financial ratios towards the objective (Maté et al., 2018). Results of a study by Oino and Ukaegbu (2015) showed that there is a significant inverse relationship between corporate profitability and financial leverage, and the speed of adjustment of

Nigerian firms is 47% faster than that of developed countries. Mwangi et al. (2014) showed that financial leverage has a significant and inverse effect on Kythreotis et al. (2018) indicate that there are significant differences in the factors affecting capital structure in Iran and Australia. Profitability, firm size, tangible assets, liquidity, asset utilization ratio and business risk are all factors affecting adjustment speed.

Management lifecycle theory provides guidelines and diagnostic tools for evaluating company transition from one step to the next using several parameters. Recent studies in the field of financial economics and accounting (Deangelo et al., 2006, Dickinson, 2011) have also found that lifecycle stages play an important role in understanding the financial performance of companies. In line with the potential use of the financial structure for higher-than-expected signaling of anticipated future performance, drivers associated with enhancing expected returns - such as profitability, firm size, or tangible assets - are more strongly related to future values and diverge from present values. Accordingly, when a company moves from one lifecycle stage to another, profitability, firm size, or tangible assets are factors explaining optimal financial leverage (Castro et al., 2016). Based on the explanations provided, the first research hypothesis can be expressed as follows:

H_1: As firms grow and mature, profitability, size and tangibles become stronger positive drivers of the target leverage.

Hackbarth et al. (2006) and Drobetz et al. (2006) have linked the speed of capital structure adjustment to economic cycles. The explanation is that the speed of adjustment during periods of economic boom is faster than periods of recession because of low interest rates and the very low risk of bankruptcy. As such, lower transaction costs for financing and lower bankruptcy costs during the firm's maturity period lead to the assumption that the speed of adjustment of capital structure will increase for firms in the maturity stage of life. Under the conditions of transition from the introduction stage to the growth stage and from the growth stage to the maturity stage, the company provides information about its previous status while the company managers need financing for the next period. Information asymmetry is related to risk fluctuations, profitability, and cash flows. Thus, the cost of transactions resulting from this information asymmetry for companies transitioning from growth to maturity is higher than for companies transitioning from growth to maturity (for the sake of recognition and credibility). Therefore, it can be claimed that as the company moves from one lifecycle stage to the next, the speed of adjustment of capital structure is lower and the speed of adjustment of capital structure in companies moving from growth to maturity is greater than companies that are moving from the introduction stage to the growth stage. The results of the study of Anna et al. (2015) showed positive bilateral relationships between leverage, profitability, and ownership concentration in the maturity period of 2007, but the negative bilateral relationship between these variables across all other periods. The results of Utami and Inanga (2012) showed that both growth and mature companies follow the pecking order theory. However, their results showed that the pecking order theory explains the financial model of growth firms better than that of mature ones. Based on the explanations provided, the second research hypothesis can be expressed as follows:

H_2: During the year in which firms change to the subse-quent stage, the speed of adjustment is lower than for firms remaining in the same stage.

Materials and research model design

The target population of this study is all SMEs listed in Tehran Stock Exchange for a period of six years from 2015 to 2020. SMEs are business units that are much lower in size than large companies in terms of size. Usually, the classification of such units is based on the four main indicators of number of employees of the company, total net assets of the company, sales volume of the company, and the amount of investment of the company (Aghaee et al., 2014). In the present study, in order to exclude large companies from the research, first the logarithm of the sum of the annual sales of all companies in 2016 was taken and they were sorted in a descending order (small to large). Then, the whole companies were classified into three segments of small companies, medium companies, and large companies. Then, by eliminating the large companies, research has been carried out on SMEs. Finally, the research sample was selected by systematic elimination sampling method and considering exclusion criteria. For this purpose, the fiscal year of the companies should end by March and should not be excluded from the list of companies listed in Tehran Stock Exchange during the period under consideration. The required information of each company should be available over the study period. Also, they should not be among investment firms, banks and monetary and credit institutions. Finally, these companies must have been accepted in Tehran Stock Exchange before 2015. After applying the constraints, the remaining 112 companies were considered for collecting and analyzing the research data.

As mentioned, two categories of independent and dependent variables were used to develop the conceptual model of the research. In this study, the stages of life cycle, profitability, size of company and tangible assets are considered as independent variables and target financial leverage as dependent variable. In order to measure the target financial leverage, the optimal leverage for the following year, which can be calculated according to Equation 2, was used. The net profit to asset ratio was used to measure profitability, the natural logarithm of the assets was used to measure firm size, fixed tangible asset to total asset ratio was used to measure the firm's assets tangibility, and the ratio of market value to book value of equity was used to measure growth opportunities. In this study, according to the study of Castro et al. (2016), companies are divided into five categories: "introduction", "growth", "maturity", "instability" and "decline". To this end, if the firm's operating cash flow is negative, its investment cash flow is negative, and its financing cash flow is positive, the company is in the introduction stage. If its operating cash flow is positive, its investment cash flow is negative, and its financing cash flow is positive, the company is in the growth stage. If the firm's operating cash flow is positive, its investment cash flow is negative, and its financing cash flow is negative, the company is in the maturity stage. If the firm's operating cash flow is negative, its investment cash flow is positive, and its financing cash flow is greater or equal and smaller or equal to zero, the company is in the decline stage. Finally, we have identified companies that are not in any of these groups as being in a state of instability.

The financial statements and notes of the companies listed in Tehran Stock Exchange for a six-year period from 2015 to 2020 were reviewed. The information needed to formulate the theoretical foundation and background of the research was gathered using library studies and field method. The necessary data were collected by viewing the financial statements and notes on the Stock Exchange website, the Codal site, and Tadbir Pardaz software.

In the present study, Castro et al. (2016) study framework is used to test the research hypotheses; therefore, the following model is used to test the first hypothesis of the present study according to Castro et al. (2016):

$$Dit = \beta 0 + \beta 1\ PROFit + \beta 2\ SIZEit + \beta 3\ TANGit + \beta 4\ GROWTHit + \varepsilon it \quad (1)$$

After estimating the first research hypothesis at the data generality level, the estimated coefficients β1, β2, β3 and β4 are used at each company-year level. It should be noted that the model of the first research hypothesis is estimated using all the data. During this estimation, the coefficients β1, β2, β3 and β4 are obtained. Then, these coefficients are used to calculate the optimal amount of financial leverage for the coming year:

$$D^*it+1 = \beta'1\ PROFit + \beta'2\ SIZEit + \beta'3\ TANGit + \beta'4\ GROWTHit \quad (2)$$

It is emphasized that the optimal amount of financial leverage is calculated for the coming year using this model and hence, the dependent variable is the optimal financial leverage for the coming year (D*it+1). As such, the level of optimal financial leverage of company i in year t+1 is calculated by the above equation, which can actually be considered as the target financial leverage. The following model is then used to identify the speed of adjustment of corporate capital structure according to the study of Castro et al. (2016):

$$(D^*it+1-Dit) = \beta 0 + \beta 1\ (Dit+1-Dit) + \beta 2\ PROFit + \beta 3\ SIZEit + \beta 4\ TANGit + \beta 5\ GROWTHit + \varepsilon it \quad (3)$$

To test the validity of the first hypothesis, the above model (number three) is estimated once at the level of the whole companies under investigation and once at the level of the companies in the growth and maturity stages of the lifecycle. The validity of hypotheses is examined by comparing the coefficients β2, β3 and β4 in the two groups of companies. It should be noted that the coefficients β2, β3 and β4 are expected to be positive and significant in both groups under study, but their values are higher at the level of companies in the growth and maturity stages of the lifecycle.

• To test the validity of the second hypothesis, model number three is estimated once at the level of the whole companies under investigation and once at the level of firms that have moved from one lifecycle stage to the next lifecycle stage. The validity of the second hypothesis is examined by comparing coefficient β1 in the two groups of companies. It should be noted that the β1 coefficient is expected to be positive and significant in both groups, but its value is lower at the level of firms that have moved from one lifecycle step to the next.

It should be noted that in the above equations, D financial leverage, PROF profitability, SIZE corporate size, TANG corporate asset availability, MOWN major ownership, INOWN institutional ownership, PROA corporate earnings before tax, GROWTH corporate growth and the indices i and t represent company and year, respectively. Generalized least squares method was used to estimate the regression equations in order to eliminate the heterogeneity between the model equation errors. The estimation of the hypotheses testing model was performed using Eviews 9 statistical software.

Results

Descriptive statistics

Table 1 presents the descriptive analysis of variables, including mean and standard deviation, and also Pearson's correlation coefficient for checking the default non-linearity of variables.

Table 1.

Descriptive analysis of research variables

Variables	Mean	SD	1	2	3	4	5
1. Financial leverage	0.58**	0.19	1				
2. Coming year optimal financial leverage	0.44**	0.13	0.21	1			
3. Profitability	0.12	0.12	0.28*	0.36*	1		
4. Firm size	0.48**	0.44**	0.05	0.14	0.09	1	
5. Assets' tangibility	0.25*	0.17	0.12	0.49	0.005	0.03	1
6.Growth opportunities	0.23*	0.59**	0.09	0.16	0.29*	0.08	0.00

N= 672; * and ** mean significant at 5% and 1%, respectively

According to the results of Table 1, there was no correlation greater than 0.8 between any of the variables, indicating lack of co-linearity among research variables.

Empirical results

The normality of the residuals of the regression model is one of the regression assumptions that shows the validity of the regression tests. Due to the limitations of Kolmogorov-Smirnov test in hybrid regression models, the normality of the distribution of research variables was investigated using the Jarque-Bera test. According to the results, because the significance level is less than 0.05, the distribution of the dependent variable is not normal. It should be noted that when the sample size is large enough, the deviation from the assumption of normality and its consequences is usually negligible. Given the central limit theorem, it can be seen that even in the absence of normality, the test statistics will asymptotically follow appropriate distributions. Therefore, the lack of justification of this hypothesis is negligible.

In order to estimate the coefficients of the research models, Chow test and F-Limer statistics were used to determine the combination data method and to detect their homogeneity or heterogeneity. The necessity of using fixed or random effects method has also been investigated by applying the Hausman test. Table 3 shows the results obtained for the Chow and Hausman test. The Chow test results show that the probability obtained for the F statistic is less than 5%, so the data are used as a panel to test the models. The level of significance of the Hausman test for all indices is less than 0.05, so the fixed effects model should be used to estimate the coefficients of the model.

Table 2 shows the results obtained to investigate the impact of profitability, firm size, and tangible assets on target financial leverage and speed of adjustment of the optimal structure in the life cycle stages.

Table 2.

Results of the research hypotheses testing

$RET_{i,t} = \beta_0 + \beta_1 DEC\_PROF_{i,t} + \beta_2 MOP_{i,t} + \beta_3 DEC\_PROF*MOP_{i,t} + \varepsilon_{i,t}$

Variables	Overall	Growth and maturity stage	Change stage
Fixed	0.39**	0.75**	0.36**
	(12.56)	(8.95)	(3.27)
Difference of financial leverage for this year with coming year	0.18**	0.47**	0.15**
	(7.12)	(6.98)	(2.68)
Profitability	0.31**	0.39**	0.04
	(8.54)	(4.30)	(0.41)
Firm size	0.03**	0.05*	0.03**
	(15.09)	(2.56)	(3.42)
Assets' tangibility	0.14**	0.15**	0.23**
	(4.29)	(2.83)	(3.47)
Growth opportunities	0.04**	0.01	0.03**
	(2.61)	(1.73)	(4.16)
F-statistics	61.88	17.24	9.694
F-statistics probability	0.000	0.000	0.000
Coefficient of determination	0.95	0.62	0.42
Adjusted coefficient of determination	0.94	0.61	0.39
Durbin-Watson statistics	2.17	2.04	1.71

* and ** mean significant at 5% and 1%, respectively. (Terms in parentheses indicate t-student statistics).

As can be seen in Table 2, the t-statistic of the variables of profitability, firm size, and tangible assets at the level of firms in the growth and maturity stages of lifecycle (4.3, 2.56, and 2.83, respectively), and the level of total companies under study (8.54, 15.09 and 4.29, respectively) is greater than ±1.965 and its significance level is less than 0.05. This indicates the significance of this variable in the model. Therefore, the coefficients β_2, β_3 and β_4 of profitability, firm size, and tangible assets in both groups were positive and significant, but their values at the level of firms in the growth and maturity stages of lifecycle (0.39, 0.05, 0.15, respectively) were greater than the coefficients β_2, β_3 and β_4 related to the variables of profitability, firm size, and tangible assets at the level of total firms under investigation (0.31, 0.03, 14.0, respectively). Thus the first research hypothesis based on "As firms grow and mature, profitability, size and tangibles become stronger positive drivers of the target leverage" confirmed.

Also, as can be seen in Table 4, the t statistic for the optimal future financial leverage variable both at the level of the total firms under review (7.12) and at the level of firms that have moved from one stage of lifecycle to another (2.68) is greater than 9 1.965 and its significance level is less than 0.05. This indicates the significance of this variable in the model. Therefore, β2 coefficients of optimal future financial leverage were positive and significant in both groups, but their values at the level of firms moving from one stage to another (0.15) were greater than their value at the level of total firms under investigation (0.18). Thus the second research hypothesis based on "During the year in which firms change to the subsequent stage, the speed of adjustment is lower than for firms remaining in the same stage" confirmed.

The adjusted coefficient of determination at the level of total firms under study is 0.94, meaning that 94% of the dependent variable changes are explained by independent variables. In practice, these values are significant. This index shows the severity of the relationship between variables. Statistical value and significance level of F indicate significance of test models. Durbin-Watson is also in the range of 1.5-2.5, meaning that there is no autocorrelation problem.

Conclusion

Inappropriate capital structure of any company, and especially SMEs, which are mostly non-governmental and often face problems in obtaining external funding due to ownership and size issues, affects all areas of activity and can lead to issues, such as inefficiencies in product marketing, ineffectiveness, and inability to properly employ human resources and the like. The main purpose of this study is to investigate drivers of target financial leverage and the speed of adjustment of capital structure at different stages of lifecycle. According to the study of Castro et al. (2016), to measure the target financial leverage, the optimal financial leverage criterion has been used for the coming year, and for the life cycle of the company, five stages of "introduction", "growth", "maturity", " instability" and "decline" are considered. The results indicate that for firms in the growth and maturing stages of their lifecycle, profitability, firm size and tangible assets are stronger positive drivers for target leverage and when the company One stage of the life cycle goes to the next, the company slows down its gap with the target lever, and the speed of adjusting the optimal structure is reduced.

According to the results of the first hypothesis, profitability, firm size, and tangible assets for SMEs that are in the growth and maturing stages of life cycle are stronger positive drivers of the target leverage. To justify the result of this hypothesis, it can be said that since the effective use of tax shields can reduce the cost of financing transactions and bankruptcy costs, the trade-off theory is expected to be more applicable in mature firms. This means that higher target leverage and higher debt levels are considered for these companies. As such, for firms in the growth and maturing stages of their lifecycle, profitability, firm size, and tangible assets will be stronger positive drivers for target financial leverage (Castro et al., 2016). Oino and Ukaegbu (2015) showed that there is a significant inverse relationship between profitability and financial leverage of companies. High-profit companies are more likely to internally finance investment projects than low-profit companies. Accordingly, there is a negative relationship between profitability and debt-to-asset ratio, i.e. the financial leverage of a company. Also, considering the company lifecycle theory that there is more financial leverage in growing and declining companies than mature companies, the results of this hypothesis indicate that this relationship is negative in growing and declining companies. Since growth companies are using more leverage to finance their planned investments due to problems with their underrepresentation as well as liquidity problems, and given the negative relationship between financial leverage and profitability, this can lead to a decline in company profitability. The results are in line with the results of the studies of Kythreotis et al. (2018), Castro et al. (2016), Anna et al. (2015), Utami and Inanga (2012), and Drobetz et al. (2006).

According to the results of the second hypothesis, during the year in which firms change to the subsequent stage, the speed of adjustment is lower than for firms remaining in the same stage. To justify the result of this hypothesis, it can be said that companies that move from one lifecycle stage

to the next suffer from high levels of information asymmetry between company executives and financial markets that impose higher transaction costs on the company. Therefore, it can be claimed that during the year that the company moves from one lifecycle stage to the next, the speed of adjustment of the optimal capital structure is lower. Also, the speed of adjustment of the optimal capital structure in the companies moving from growth to maturity is higher than companies moving from the introduction stage to the growth stage. The results are in line with the results of Castro et al. (2016), Yan (2010), and Hosseini Sarani et al. (2017).

Based on the results of the first hypothesis, SMEs are suggested to use more internal resources at lower levels of profitability because external resources are expensive and non-debt tax shields (such as depreciation) can adequately generate tax benefits for such companies. Companies with high levels of profitability will also benefit from debt-related benefits, such as tax savings, increased production and profit in their capital structure. Also, considering the result of the first hypothesis, which indicated a positive relationship between financial leverage and the size of SMEs, it is suggested to set the stage for these companies to gain access to more resources through debt creation for achieving their objectives by reducing discrimination by lenders since SMEs play a significant role in the economic development of countries. Also, medium size companies should be able to use borrowing as one of the financing methods because medium-sized companies enjoy greater diversity and are less likely to go bankrupt and the expected low cost of bankruptcy enables these companies to borrow at a lower cost. Since the second hypothesis of this research was considered with regard to the lifecycle and the results indicated the impact of this variable on the relationship between the variables under study, all capital market actors, decision makers, financial analysts and potential and actual investors of stock exchange are recommended to pay great attention to company lifecycle in analyzing the investment plans of financial assets and securities for the evaluation of companies, the amount of risk, timing and their investments with different and heterogeneous levels of profitability. This is because considering this important factor leads to the selection of the optimal investment portfolio with minimum risk and maximum return. In addition, it is suggested to consider these features in business analyses and various technical or fundamental analysis tools. It can also be said that the different stages of the lifecycle can well describe and explain the economic characteristics of a company that is happening or will occur, so the management of SMEs must make the right decision in each step using management mechanisms.

Future research is suggested to examine the impact of the firm's life cycle on the explanatory power of economic performance measures, such as economic value added, market value added, residual economic profit, earnings management, earnings quality, conservatism, and explanatory power of return on capital at different stages of a company's life cycle and compare the results. It is also suggested to investigate the impact of macroeconomic variables and political factors on the relationship between capital structure and corporate ownership. Researchers are also recommended to replicate this research by considering companies not listed in Tehran stock exchange for a longer period of time in order to have more generalizable results.

The present study had some limitations. One of the limitations is that the variables are influenced by the rate of inflation, which was assumed to be the same for all firms and observations, while this may not be the case. Therefore, this factor can influence the classification of companies into stages of the life cycle and the results of the research. In this research, it was assumed that investors and

capital markets use the variables of firm operating cash flow, investment cash flow, and financing cash flow in order to classify companies into the life cycle of the firm, and consider the importance of each of these variables to be the same, while that may not be the case. Selected companies in the sample constitute a limited volume of companies listed in the Tehran Stock Exchange; therefore, caution should be exercised in generalizing the results to the business units currently listed in the Stock Exchange. Lack of access to some of the company information required has led to a restriction on the time period chosen for the study. The effect of regulatory mechanisms, such as legal framework, ownership structure, and independent audit on the results was not controlled and management motives were not considered at different stages. However, the researcher believes that these limitations do not significantly affect the validity and reliability of the research results.

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