check for updates

LIFE CYCLE THEORY OF THE CAPITAL STRUCTURE: EVIDENCE FROM TUNISIAN SMEs

Check for updates

iD Youssef Walid[1]

[1]Higher Institute of Management of Sousse, University of Sousse, Tunisia
Rue Abdlaaziz il Behi. BP 763, Sousse, Tunisia.
Email: walidyoussef14@yahoo.fr Tel: 0021698675858

ABSTRACT

Empirical research on the financing of small and medium-sized enterprises (SMEs) has focused mainly on theoretical approaches related to hierarchical order and, to a lesser extent, on trade-off theory. However, the financial literature has recently revealed that the life-cycle stages of SMEs influence their financial choices, which may explain why business financing evolves over time. Thus, this paper used a panel data approach to study the impact of life cycle phases on the capital structure of 70 Tunisian industrial SMEs during the period from 2013 to 2016. We found that Tunisian SMEs tended to use debt more intensively in the short term, while long-term debt was rarely used. We also found that the life cycle theory is perfectly adapted to describe the financial behavior adopted by Tunisian SMEs, which tend to use debt (regardless of maturity) during the early life cycle phases. Once SMEs age and mature, other sources of funding take over (mainly self-financing and even an IPO).

Contribution/ Originality: This study is one of very few to investigate the influence of life cycle phases on the capital structure for Tunisian SMEs. The paper's primary contribution is that each source of funding is often adapted to a specific moment in the life cycle of the SME.

1. INTRODUCTION

In most countries, small and medium-sized enterprises (SMEs)[1] represent the main pillar of the industrial fabric of any economy. Tunisia is not exempt from this last rule since the Ministry of Industry has identified (in 2016) around 12.000 companies (more than 10 employees), of which 93% belong to the SME category. These companies contribute to 67% of economic activities and provide approximately 53% of total national employment.

---

1. In Tunisia and according to the National Institute of Statistics (**NIS**), is considered an SME, any company whose workforce varies between 6 and 199 employees.

In addition, there is another definition of SME eligible for intervention by the Industrial Promotion and Decentralization Fund (**IPDF**), which defines SMEs in the

industrial and service sector as those with a total investment not exceeding 10 million dinars (including working capital).

The traditional financial literature has been very interested in financing policy and has led to two competing theories: the Trade-Off Theory and the Pecking Order Theory. However, these theories do not seem to be perfectly adapted to explain financing policy in SMEs with their own characteristics and specificities (Myers, 2001).

In fact, understanding the financial features of SMEs during the different stages of their life cycle could enable managers and financial institutions to develop appropriate policies to support the development of this category of enterprise. That is why in this paper, we will try to demonstrate that the transition from one life cycle to another is accompanied by changes in the sources of financing used by Tunisian SMEs and subsequently by changes in their level of capital structure.

In the first part of this paper, we will identify the different phases of the life cycle of a company. In the second part, we will examine the different sources of financing used by Tunisian SMEs during each phase of their life cycle. In the third part, we present the variables as well as the hypotheses, the econometric model and the methodology of the study. Finally, we will discuss the empirical results obtained with the sample of Tunisian SMEs and their interpretations.

2. THE LIFE CYCLE THEORY OF THE FIRM: THEORETICAL FRAMEWORK

Over the past decades, researchers have come up with valuable insights into the study of the capital structure of SMEs in several countries, such as: Sweden (Yazdanfar and Öhman, 2016) China (Tian *et al.*, 2015) Greece (Daskalakis *et al.*, 2014) Brazil (Forte *et al.*, 2013) Spain (Aybar-Arias *et al.*, 2012) Netherlands (Degryse *et al.*, 2012) and Ireland (Bhaird and Lucey, 2010).

As observed , it seems obvious that there is no real consensus on what influences the decision of the capital structure within the SME. At the same time, some prior research on life cycle theory has been able to determine the nature, availability and cost of the corresponding financial resources at each phase of the life cycle. Indeed, the concept that firms evolve through a financial life cycle is an old idea related by analogy to the growth of living organisms (Black, 1998).

However, these models and theories differ not only in the classification criteria used to identify each phase of the life cycle but also differ in the exact number of phases to be considered. For some authors, they propose three-phase (Anthony and Ramesh, 1992) four-phase (Miller and Friesen, 1980) or five-phase life cycle models (Dickinson, 2005; Dickinson, 2011).

Therefore, even if the authors do not agree on the temporal delimitation and the extent of each phase, a consensus seems to emerge thatdeveloping firms transition through a series of phases that overlap imperceptibly (Berger and Udell, 1998) and more recently (Gregory *et al.*, 2005).

For some authors, the evolution of a company is made as it progresses in age; for others, management practices, cash flow patterns and organizational issues need to be analyzed in order to explain how the company moves from one stage to another. In the presence of all these differences, life cycle theories and studies agreed that once the business is created, it should go through three stages: growth, maturity and decline (Rehman *et al.*, 2016).

2.1. The Start-Up Stage

During the start-up period, the company aims to create a product and a market, to gather the necessary resources and to position itself in a sustainable market niche. At this stage, management decisions are informal and the administrative system is quite simple (Kallunki and Silvola, 2008).

On the financial side, companies usually have net cash outflows as they are forced to invest in order to grow (Frielinghaus *et al.*, 2005) and at this stage, the benefits are relatively low or non-existent. According to Sammut (1996) the start-up phase begins when a company registers its first orders or makes its first sales and ends when the manager shows strategic awareness and engages an organizational transfer.

2.2. The Growth Stage

Once the company has successfully completed the start-up phase, it will attempt to use the accumulated experience and existing resources to diversify its products and access new markets. In order to achieve these objectives, the company must carry out a planned reform of its various functions (human resources, management, finance, etc.) so that the company can adapt its structure to its new size.

In terms of human resources, the company must set up a real human resources management system (skills management, remuneration and training policy). With regard to organizational activity, growth leads to the establishment of a functionally-based structure where procedures are formalized to ensure administrative efficiency (Adizes, 2004). Finally, on a financial level, when companies are developing rapidly, they have to find specific sources of financing for their investments since their demand for capital exceeds their self-financing capacity (Lemmon and Zender, 2010).

2.3. The Maturity Stage

At the maturity stage, the level of market growth is quite low, but the company still has a significant market share, with a relatively stable turnover and profitability. The company is perfectly familiar with the market conditions, which allows it to position itself optimally in relation to its suppliers and customers.

Regarding the level of indebtedness during this phase : it is found to be relatively small and stable over time, since most of the investment effort was made during the growth phase. As a result, companies prefer to use equity financing at this stage, although they are able to borrow more easily and at a lower cost (Bulan and Yan, 2010).

2.4. The Decline Stage

When the company enters the decline phase, it must put in place a general restructuring program to deal with more complex and diversified markets. If the company gives up this option, then it must expect the loss of significant market share, as well as a net decrease in profitability and liquidity. In this case, the company will have to opt for an end-of-cycle management strategy by trying to preserve the margins and, if possible, by opening micro-niches that could delay the end of the cycle.

3. FUNDING SOURCES DURING THE SMEs' LIFE CYCLE

All companies, irrespective of their size and maturity, need funds to start, maintain or expand their business. Depending on the sector in which they operate and their degree of maturity, SMEs choose a combination of debt and equity financing that will change over the years depending on funding needs.

Thus, according to Gregory et al. (2005) the different forms of financing are closely linked to the life cycle of the company. Indeed, during the start-up period, the sole source of financing available for SME managers is materialized by the owner's personal capital and public aid. Once in place, the growth phase is generally financed by bank debt or through venture capital. Finally, during the maturity phase, the objective will be to reduce financial costs and ensure more stable funding.

3.1. Funding of the Start-Up Phase

The sources of financing for an SME during its start-up period are relatively modest since the risk at this stage is high and financial investments can be difficult to secure. This is why most SMEs in this phase are financed by personal capital. Some financial instruments used by Tunisian SMEs to finance their start-up phase include:

- **Personal investment**

For young SMEs, the personal savings of entrepreneurs, their families and friends are often the most important source of financing during the start-up phase. Indeed, these companies are characterized by a high level of risk and

this is why it is extremely difficult for them to obtain loans from banks. As a result, start-up SMEs use personal funds (savings, personal property mortgage, overdraft authorized in a bank account, etc.) to set up their business.

- **Business angels**

Business Angels are generally individuals with extensive practical experience who invest in an innovative high potential company in order to generate substantial added value. They have a perfect knowledge of the business climate and also benefit from an extensive network of professional contacts. Thus, in addition to their financial support, they put at the disposal of the new entrepreneur their skills, their experiences and a part of their time.

- **Banks specializing in SME financing**

In order to boost investment growth and support private initiative, the Tunisian government has put in place mechanisms to strengthen the role of the banking system which has led to the creation of two specialized banks:

  - **The Tunisian Solidarity Bank** aims to finance small projects (total cost of investment is less than 100.000 Tunisian Dinars) for the benefit of people who do not have sufficient financial means and guarantees required by the traditional banking system.**The Small and Medium-sized Enterprise Financing Bank** aims to provide assistance and support for the creation of SMEs (100.000 < total cost of investment < 10.000.000 Tunisian Dinars) and to promote the development of those already existing.

3.2. *Funding of the Growth Phase*

Once the SME has successfully passed the start-up phase, it will need a new injection of external capital to finance its growth. However, the uncertainty that characterizes the future financial flows of SMEs coupled with a high probability of default does not make this type of clientele a preferable target for bankers. Nevertheless, during the growth phase, SMEs will resort to bank financing in the form of bank loans and government-guaranteed loan programs.

Other financing options available during this phase include inter-company loans, leasing and venture capital.

- **Bank credit**

Bank credit is the main source of finance used by the SME. However, during its inception, banks are reluctant to give credit to SMEs due to a lack of economic and financial history. Once the company consolidates its position in the market and accumulates the assets (servants as collaterals), restrictions imposed by bankers become more flexible and SMEs have easier access to bank financing.

- **Leasing**

Leasing consists of renting equipment for professional use at the disposal of an economic operator against the payment of a fee. The advantage of leasing is that it provides fast financing up to 100% of the investment, unlike bank loans. However, this type of financing is associated with relatively high cost.

- **Inter-company loans**

Also called supplier credit, it is a credit that companies agree in the context of their commercial relations (in the form of payment terms). Its main advantages are its flexibility and its low cost, which is why this type of credit is the main source of short-term financing for SMEs. However, its main limitation is materialized by the relinquishment of the borrowing SME to the benefits of the cash settlement (discounts and rebates).

- **Venture capital**

Venture capital is a method of equity financing that proposes to provide the necessary funds for the creation of SMEs or the extension of existing ones. Minority and temporary shareholdings in the company's capital are mainly remunerated by the capital gain on the sale of the shares at a later date (between five and seven years). In addition to its financial contribution, venture capital aims to improve management and organizational techniques.

3.3. Funding of the Maturity Phase

In the maturity phase, SMEs focus on reducing costs and maintaining their market share. At this point, financial resources include retained earnings as well as fundraising in the alternative financial market. The latter would allow SMEs to finance themselves at lower cost.

- **Retained earnings**

Retained earnings represent the portion of realized profits that have not been distributed to shareholders (in the form of dividends) but rather incorporated into the company's share capital in order to strengthen its equity. Indeed, as the SME becomes mature and significant investments are already made, the level of retained earnings tends to increase.

This method of financing has several non-financial advantages, such as preserving the control of existing shareholders and reducing the risk of bankruptcy.

- **The introduction to the alternative financial market**

The creation of the alternative financial market in Tunisia aims at guaranteeing SMEs new financing resources on more flexible terms (than the official stock market) while honoring their commitments (in particular banking). This type of financing is tailored to SMEs and companies with promising prospects at a certain degree of maturity. Indeed, the conditions required for access to this alternative financial market are transparency (two certified balance sheets) and good future prospects (a viable business plan).

Finally, Table 1 below summarizes the main sources of financing available for SMEs according to the phase of the life cycle that it is passing through:

Table-1. Financing sources according to the SMEs life cycle

	Stage 1: Start-up	Stage 2: Growth	Stage 3: Maturity	Stage 4: Decline
Need for external funding	High but constrained by the size of the SME	High in relation to the value of the SME	Declining as a percentage of the value of the SME	Low as projects become scarce
External funding	Owner's funds	Venture capital	Bank loans	Repayment of debt and share repurchases
	Business angels	Leasing	Retained earnings	
	BTS and BFPME	Supplier credit	Alternative financial market	
Self-financing	Often negative	Negative or Low in relation to the financing requirement	High in relation to the financing requirement	Greater than funding requirements

Source: Suggested by author based on literature review.

4. EMPIRICAL ANALYSIS

Numerous studies have attempted to prove the existence of a correlation between the sources of financing used by SMEs and their position in the life cycle. Indeed, according to Timmons and Spinelli (2004) the different sources of financing available on the market are often adapted to a specific moment in the life cycle of the company.

Therefore, our main objective would be the empirical validation of the life cycle theory of the capital structure for Tunisian SMEs in order to assert that the transition from one life cycle to another is accompanied by changes in the sources of finance used by SME and, subsequently, by changes in their capital structure.

In order to do this, we will first present the variables (dependent and independent) as well as the assumptions used for the econometric analysis. Then we will reveal the characteristics of our sample. The specification of the empirical model as well as the estimation methodology will be done in a third step, to finish with the analysis and interpretation of the results obtained.

4.1. Variables and Hypotheses of the Study

The idea that a company changes sources of financing when switching from one life cycle to another is a concept frequently encountered in the financial literature. Indeed, Rehman *et al.* (2016) classify life cycle stages using dividend payout ratio, the annual sales growth and the firm's age. Dickinson (2011) provides a detailed classification of business life cycle stages based on their cash flow patterns (operating, investing, financing). DeAngelo *et al.* (2006) used the ratio of retained earnings to equity to capture the different phases of the life cycle.

It seems therefore laborious from an empirical point of view to separate the different phases of the life cycle as well as to choose the variables that can explain the changes in the sources of financing of SMEs. Nevertheless, the study developed by Bhaird and Lucey (2010) identified the main variables used to delimit each phase of the life cycle through variables that the manager can directly control (age, size, growth opportunities).

4.1.1. Dependent Variables

Bhaird and Lucey (2010) attempted to examine a number of economic and financial aspects of the firm as well as to measure the effect of these attributes on the evolution of SMEs sources of finance and, subsequently, changes observed in their financial structure. Thus, the dependent variables that are known to influence the financial changes observed during the transition from one life cycle to another refer to the debt ratio, the level of self-financing and the existing guarantees.

However, as argued by Sogorb-Mira (2005) any analysis of the determinants of leverage based only on the level of the total debt ratio could obscure significant differences in debt maturity. Therefore, in order to clarify this issue, we focused on the effect of each independent variable on short-term and long-term debt separately.

Finally, the main dependent variables related to the life cycle of SMEs were defined as follows:

- The **short-term debt (STD)**, measured by the firm's total debt repayable within one year or less (inter-company debt, other current liabilities and bank overdrafts) divided by total assets,
- The **long-term debt (LTD)** measured by the firm's total debt repayable beyond one year (long term liabilities and medium and long-term bank loans) divided by total assets,
- **Self-financing (SELFFIN)** corresponds to the sum of net retained earnings plus depreciation, amortization and provisions, all on the total assets, and,
- **Guarantees (GAR)** measured through the ratio of tangible fixed assets (net of depreciation) to total assets.

4.1.2. Independent Variables

According to the work of Bhaird and Lucey (2010) several variables represented potential determinants that can affect the different sources of finance used by SMEs in each phase of the life cycle. We proposed the hypotheses for each of these variables as well as their impacts on the dependent variables.

- **Age of the SME**

A firm's age is an important factor in the study of SME financing decisions, especially with regard to the variation over time in the level of debt. In this respect, it should be emphasized that Serrasqueiro and Nunes (2012)

studied the influence of age on the financing decisions of Portuguese SMEs during the period of 1999-2006 and stated that the age of the company played a central role in explaining the level of debt. Thus, young SMEs have on average a higher short-term debt than their older counterparts. At the same time, older SMEs had on average higher long-term debt.

Yazdanfar and Öhman (2016) Confirmed the impact of the age of Swedish SMEs on funding sources, finding a significantly negative relationship with both total and short-term debt, while age has a positive relationship with long-term debt.

However, other studies have come to different conclusions, such as Bhaird and Lucey (2010) who analyzed the determinants of capital structure of a sample of 299 Irish SMEs. Their result confirms a significant negative relationship between the use of long-term debt and the age of the firm indicating that SMEs become increasingly reliant on internal equity as their debt is repaid.

Finally, in agreement with the results found, we formulated the following hypotheses:

H₁: The age of SMEs is negatively correlated with the use of short-term debt

H₂: The age of SMEs is positively correlated with the use of long-term debt

Yazdanfar (2012) proved, using a sample of Swedish micro-enterprises, that they tended to reduce their dependence on debts over time. This result is explained by the fact that older companies have a greater capacity to generate internal financing funds than their younger counterparts. La Rocca *et al.* (2011) examined the financing choices of 10,242 Italian non-financial small and medium-sized firms not involved in a bankruptcy process during the period of 1996-2005. The results show that, in the maturity stage, firms rebalance their capital structure by substituting debt for internal capital.

We then formulated the following hypothesis:

H₃: The age of SMEs is positively correlated with the use of self-financing

Finally, according to the empirical evidence proposed by Berger and Udell (1998) and Bhaird and Lucey (2010) it can be seen that as SMEs advance in age, they tend to guarantee debt financing through tangible fixed assets.

We formulated the following hypothesis:

H₄: The age of the SME is positively correlated with the guarantees provided to secure debt financing

- **Size of the SME**

The size of the firm was closely associated in the financial literature with its probability of failure (inverse relationship). Daskalakis *et al.* (2014) Confirmed that size is a proxy for financial robustness, and this is supported by the hypothesis that larger firms are more diversified and thus bear lower risk of facing financial distress problems.

Benkraiem and Gurau (2013) Investigated the influence of various corporate characteristics on the capital structure of French SMEs through a sample of 2,222 firms studied over a four-year period. The data analysis indicated that the size of the firm was negatively related to short-term debt and positively related to long-term debt, which confirms that the size variable seems to enhance the leverage capacity of French SMEs only for the long-term debt.

Similarly, Sánchez-Vidal and Martín-Ugedo (2012) tested whether the implications of the financial growth cycle held for a sample of Spanish SMEs. The evidence with respect to size showed that small companies tended to use more short-term financial debt than large firms, while the use of long-term debt financing was positively related to the size of the firm.

However, Yazdanfar and Öhman (2016) evidenced the same positive correlation between the size of Swedish SMEs and short-term debt, whereas it had no significant relationship with the long-term leverage. Finally, the

relationship between debt financing and firm size varied according to the maturity of the debt as shown by these two hypotheses:

H₅: *The level of short-term debt is negatively correlated with the size of the firm*

H₆: *The level of long-term debt is positively correlated with the size of the firm*

According to Bhaird and Lucey (2010) the use of collateral (in the form of tangible fixed assets) by SMEs will depend on their size. Indeed, the more important these guarantees are, the better the creditor will be protected against the risk of default. This observation lead us to test the following hypothesis:

H₇: *The size of the SME is positively correlated with the guarantees provided to secure debt financing*

Ultimately, according to the empirical evidence proposed by Bhaird and Lucey (2010) the positive and significant relationship between retained profits and firm size indicates that Irish SMEs are increasingly reliant on internal equity as their size grows and the accumulated profits are reinvested. Conversely Yazdanfar and Öhman (2016) suggested a negative and significant relationship between size and self-financing.

We formulated the following hypothesis:

H₈: *The size of the SME is positively correlated with the use of self-financing*

- **Growth opportunities**

For Benkraiem and Gurau (2013) financing growth is a process that often lasts for several years and consequently requires long-term debt. They found that the growth variable had a positive and significant coefficient relative to the long-term debt, but this coefficient was not significant in the case of short-term debt. Degryse *et al.* (2012) showed that Dutch SMEs with significant growth opportunities tended to increase their long-term debt when they required new funds, while Michaelas *et al.* (1999) found a positive effect between growth opportunities for U.K SMEs and short-term leverage.

We then formulated the following two hypotheses:

H₉: *The level of short-term debt is positively correlated with growth opportunities*

H₁₀: *The level of long-term debt is positively correlated with growth opportunities*

Extensive literature has examined the link between the growth of SMEs and the availability of internal funds. The study most closely related to our case was probably that of Saarani and Shahadan (2013) who showed that Malaysian SMEs with a relatively high growth rate tended to use the accumulated retained earnings before resorting to debt to finance their growth.

Similarly, Brown and Haynes (2009) revealed a strong and positive relationship between the level of internal funds and the probability of growth in small firms using the Federal Reserve Board's Survey of Small Business Finances (SSBF)[2].

In accordance with the last two arguments, the following hypothesis was proposed:

H₁₁: *The use of self-financing is positively correlated with growth opportunities*

Finally, high-growth firms were generally companies associated with a high level of asymmetric information. In fact, from the viewpoint of bankruptcy costs, the assets financed during the growth process would have a value of almost zero in the event of liquidation. This is why Bhaird and Lucey (2010) were led to propose the following hypothesis:

H₁₂: *The growth opportunities of the SME are negatively correlated with the guarantees provided*

---

3. The Federal Reserve Board's Survey of Small Business Finances (SSBF), is a database containing responses from non-publicly traded firms with fewer than 500 employees.

- **Sector of Activity**

Empirical findings provide strong support for the hypothesis that industry affiliation has an influence on the capital structure of SMEs. Degryse *et al.* (2012) pointed out that the life cycle of the firm was affected by the type of industry in which it operates when they investigated the capital structure of Dutch SMEs. Similarly, according to La Rocca *et al.* (2011) the company's sector of activity exerted a relevant influence on the capital structure of the Italian non-financial small and medium-sized firms.

Johnsen and McMahon (2005) proved that the type of industry seemed to have a significant influence on the financing behavior of Australian SMEs. In the same way, according to Cassar and Holmes (2003) firms belonging to a particular industry faced similar predominant circumstances and subsequently tended to adopt an analogous financing pattern.

All of these findings support the assumption that the sector of activity influences the financial choices of SMEs and, subsequently, their financial life cycle. Therefore, we chose to control the effect of the economic sector by including the following five dummy variables in the regression : Textiles and Clothing **(TC)**, Mechanical and Metallurgical **(MM)**, Leather and Footwear **(LF)**, Food and beverages **(FB)**, Building Materials, Ceramics and Glass **(BMCG).**

4.2. Data and Methodology
4.2.1. Empirical Data

In order to empirically test the life cycle theory for Tunisian SMEs, we used a database containing accounting information, balance sheets and income statements for 80 companies belonging to different sectors of the Tunisian economy (Textiles and Clothing, Mechanical and Metallurgical, Leather and Footwear etc) during the period of 2013-2016.

The data used in this search was provided exclusively by the Bureau de Mise à Niveau (BMN)[3]. All company names were anonymised for confidentiality purposes. The selection of our sample in this database required a clear definition of SME, which usually differs from one country to another and from one organization to another. In this study, we retained the definition of the National Institute of Statistics (NIS), which considers the SME as any company that employs less than 200 people.

The selected SMEs are those for which we had the balance sheet and the income statements for the entire study period. In addition, companies that belonged to the financial sector were excluded from the sample because they operated under a different funding mode.

Finally, in order to avoid insolvency problems, SMEs fully indebted up to 100% (total assets = total liabilities) were eliminated from the sample. These restrictions limited the data and the empirical analysis was ultimately carried out on a sample of 70 SMEs during the period of 2013-2016.

4.2.2. Regression Model and Methodology

Available data on Tunisian SMEs were double indexed: a first index "i" characterized the company and a second index "t" indicated the moment in time when the observation was made. They were individual time data, more commonly called panel data, enabling us to measure cross-section and time series estimates from the same body of data.

Thus, the change in the different sources of financing used for each phase of the life cycle (measured by self-financing, short-term debt and long-term debt respectively) was estimated using the linear regression model of Bhaird and Lucey (2010) as follows:

---

4. Companies eligible for this program must submit their complete financial statements for the last 3 years, certified by a chartered accountant of the Tunisian Accounting Experts.

$Y_{it} = \beta_0 + \beta_1. Age_{it} + \beta_2. SIZE_{it} + \beta_3. GROWTH_{it} + \beta_4. Sec (TC)_i + \beta_5. Sec (MM)_i + \beta_6. Sec (LF)_i + \beta_7. Sec (FB)_i + \beta_8. Sec (BMCG)_i + u_i + \varepsilon_{it}$

With:

- **Y_{it}** : The dependent variable (self-financing, short-term debt, long-term debt and collateral level),
- **Age_{it}** : The age of the firm (i) on date (t), measured by the natural logarithm of the number of years of activity,
- **$SIZE_{it}$** : The size of the firm (i) at date (t) measured by the natural logarithm[4] of the turnover,
- **$GROWTH_{it}$** : The growth opportunities of the firm (i) at date (t), measured by the ratio (Intangible Assets / Total Assets),
- **$Sec (TC)_i$** : Dichotomous dummy variable, taking the value "1" if the SME belongs to the sector "Textile and Clothing" and "0" otherwise,
- **$Sec (MM)_i$** : Dichotomous dummy variable, taking the value "1" if the SME belongs to the "Mechanical and Metallurgical" sector and "0" otherwise,
- **$Sec (LF)_i$** : Dichotomous dummy variable, taking the value "1" if the SME belongs to the sector "Leather and Footwear" and "0" otherwise,
- **$Sec (FB)_i$** : Dichotomous dummy variable, taking the value "1" if the SME belongs to the sector "Food and beverages" and "0" otherwise,
- **$Sec (BMCG)_i$** : Dichotomous dummy variable, that takes the value "1" if the SME belongs to the sector "Building Materials, Ceramics and Glass" and "0" otherwise,
- **$(\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8)$** : are coefficients to be estimated,
- **u_i** : denotes the unobservable individual specific effect that is time invariant,
- **ε_{it}**: designates a random, independent and identically distributed (i.i.d), residual error term, such as omitted variables or exogenous shocks.

The methodology adopted in this analysis included the regression of each dependent variable with respect to the explanatory variables. In order to do this, the last model was estimated using the panel's data methodology which allowed us to study the phenomena in their diversity and in their dynamism.

In this regard, it was very interesting to identify the character of the specific effect associated with each SME (an effect that does not change over time but changes from one company to another). To test whether the individual effects were correlated or not with the independent variables[5], it is essential to carry out two critical tests:

- a Chow test made it possible to check the existence of a specific effect for SMEs, and
- a Hausman test validated the exogenousity of the specific effect with respect to the explanatory variables.

Once these two tests were carried out, two situations would generally arise :

- If the firm-specific effect and the explanatory variables were independent, then the random-effects model was chosenand we applied the Generalized Least Squares (GLS) estimation to evaluate the coefficients of our model.
- If, the fixed-effect model was chosen (since the specific effect for each firm and the explanatory variables were correlated) then we had to carry out certain transformations (within) on our basic model to apply the Ordinary Least Squares method (OLS).

---

[5]. The use of the logarithmic format for the size variable not only controls the outliers in the analysis, but also would prevent the problem of Heteroskedasticity. The Heteroskedasticity problem reduces the validity and reliability of the regression analysis.

[6]. Under the **fixed effects model**, it is assumed that the specific effects are correlated with the explanatory variables; Whereas in the case of the **random effects model** it is assumed that the specific effects are orthogonal to the explanatory variables.

5. EMPIRICAL RESULTS AND INTERPRETATIONS

A preliminary study of the data in our sample allowed us to disclose interesting information concerning the sources of financing (internal and external) used by Tunisian SMEs according to their age group. The calculated values represented the arithmetic mean of each funding source, expressed as a percentage of total funding, as shown in Table 2:

Table-2. Sources of financing for SMEs by age group (in percentage).

Age of the SME Financing sources	< 5 years	5 − 10 years	11 − 15 years	> 15 years	Full sample
Internal financing in (%)	48.68	39.72	47.29	29.05	**40.25**
Short term debt in (%)	48.04	56.82	44.67	67.26	**55.5**
Long-term debt in (%)	3.28	3.46	8.04	3.69	**4.25**
Number of SMEs	**13**	**29**	**12**	**16**	**70**

Source: Author's Estimations using STATA 14 software.

The first observation was that external sources dominate the financing of Tunisian SMEs regardless of the age group considered and the average proportion of external funding varies between 52% and 71%. This result is logical since the use of external financing resources does not change the shareholding of the SME and gives the manager greater freedom in terms of operational and strategic decisions.

In addition, concerning self-financing, it was observed that it represents a significant part regardless of the age group considered (from 48% to 29%). This was explained by Timmons and Spinelli (2004) who argued that at the start-up stage, small and young companies tended to tap into the owner's personal resources and rely heavily on informal financing (provided by family and friends).

We also noted that as Tunisian SMEs advanced in age, external financing increased (52% for SMEs under the age of five years and 71% for SMEs over the age of fifteen). According to Vieira (2014) this was due to the accumulation over time of tangible assets used to secure external financing, combined with the establishment of antecedents in the industry.

Additionally, the average of total leverage for our sample reached 59,7%, which is in line with the findings of Psillaki and Daskalakis (2009) who examined the determinants of capital structure of SMEs in four European countries (Greece, France, Italy and Portugal) during the period of 1997 to 2002. They noted that the average debt ratio of Greek and Portuguese SMEs was around 59.8%.

Regarding the composition of total leverage, it seems that the Tunisian SMEs in our sample used short-term credit intensively (55.5% compared to 59.7%), while long-term debts were rarely employed (just 4.25%). Our findings showed similarities with the results presented by Sogorb-Mira (2005) which analyzed the capital structure of 6482 non-financial Spanish SMEs during the period of 1994-1998. The results of his analysis revealed that total debt represented on average about 61% of the total value of assets, divided between 9% for long-term debt and 52% for short-term debt, showing that the debt financing of the SMEs corresponded mainly to a short-term nature.

The high proportion of short-term credit among young Tunisian SMEs (less than ten years old) is probably due to the recourse of the owners to their personal assets, used as a pledge, in order to secure the loans (La Rocca *et al.*, 2011). Once SMEs have established an industry track record and information asymmetry issues dissipate, this kind of funding becomes readily available.

On the other hand, recourse to long-term debt does not seem to be the priority of Tunisian SMEs since the average proportion of this resource did not exceed 8% for all age groups considered. This is probably due to the requirement of important guarantees from creditors and the attitude of Tunisian SMEs that do not always plan to use long-term debt to optimize their capital structure (ELbekpashy and ELgiziry, 2018).

In what follows, we will analyze the results of the estimation and their interpretations for our sample, in order to affirm or not that the transition from one life cycle to another is accompanied by changes in the sources of finance for SMEs.

5.1. Regression Analysis for the « Self-Financing »

The estimation of the regression parameters will attempt to explain the causal link between the self-financing ratio of SMEs and the explanatory variables cited in our modeling. It should be noted that the previous Chow and Hausman tests, performed during the regression of the self-financing ratio in relation to the explanatory variables, confirmed the existence of specific effects and suggested the fixed effects specification.

Based on the results of the Fischer test, we admitted at the 1% level the rejection of a perfectly homogeneous panel structure and therefore our sample had individual specific effects. In addition, the specification of these effects (fixed or random), according to the Hausman test, allowed us to reject the null hypothesis % regarding the lack of correlation between the specific effects and the explanatory variables. As a result, the choice was the fixed-effects model and the ordinary least squares estimation.

The estimation of the empirical model, for our sample, using the econometric software « STATA 14 » led to the following results summarized in Table 3:

Table-3. Regression results

(SELFFIN)it = - 0,727 + (0,075). Ageit + (0,072). Sizeit − (0,082). Growthit			
(-2.96)* (2.02)**	(3,55)*	(-0,65)	
R² Within = 0,1403	F (3,207) = 11,26	Level of significance of F = 0,000*	
Hausman test : Chi2 (3) = 41,62 ; Prob > Chi2 = 0,0000*			

Source: Author's Estimations using STATA 14 software.
(*): Significance at 1%; (**): Significance at 5%.

The first observation to make about the last regression is that the self-financing of Tunisian SMEs was not influenced by sectoral considerations. In fact, the dummies variables introduced into our model, in order to capture the differences between the sectors of activity, were all rejected during the fixed effects estimation.

This result seems to contradict the conclusions of Degryse *et al.* (2012) and La Rocca *et al.* (2011) who found that funding decisions in Dutch and Italian SMEs, respectively, were strongly influenced by the sector in which they operated.

The variable of interest for our research, the age of the SME, had a positive and statistically significant effect on the level of self-financing. This constituted a strong argument in favor of the life cycle theory for Tunisian SMEs, which lead us to accept the hypothesis (H₃). This confirmed the predictions of Yazdanfar (2012) and La Rocca *et al.* (2011) who found that the more SMEs grew; the more they tended to substitute debt for self-financing.

For the size variable, it had a positive and statistically significant correlation at the 1% level with the self-financing of SMEs, in line with what was announced in hypothesis (H₈). This recalled the conclusions of Bhaird and Lucey (2010) who argued that only a large company would be able to generate significant profits in order to be able to provide enough self-financing.

Ultimately, despite the existence of a negative relationship between self-financing and growth opportunities for SMEs, this relationship was not statistically significant, leading to the rejection of the hypothesis (H₁₁) and to calling into question the results discerned by Saarani and Shahadan (2013). This was probably due to the fact that Tunisian SMEs with good growth prospects tended to favor the use of debt before drawing on their retained earnings.

5.2. Regression Analysis for the « Short-Term Debt »

In a second step, our objective was to explain the causal link between the short-term debt (S.T.D) ratio and the various empirical determinants derived from the modeling of Bhaird and Lucey (2010).

The Chow test performed during the regression of the short-term debt ratio with respect to the different explanatory variables confirmed the existence of individual specific effects. The specification of these effects according to the Hausman test, allowed us to reject the null hypothesis and subsequently, the choice was the fixed effects model.

The estimation of the empirical model, for our sample, using the econometric software « STATA 14 » led to the following results presented in Table 4:

Table-4. Regression Result.

(S.T.D)it = 1,53 − (0,035). Ageit − (0,067). Sizeit + (0,160). Growthit		
(5.85)* (-0.90) (-3,09)* (1,18)		
R² Within = 0,0891	F (3,207) = 6,75	Level of significance of F = 0,0002*
Hausman test : Chi2 (3) = 30,07 ; Prob > Chi2 = 0,0000*		

Source: Author's Estimations using STATA 14 software.
(*): Significance at 1%.

After having authenticated, at the 1% level, that the tested model was globally significant, it is important to underline that the level of the short-term debt of Tunisian SMEs was not influenced by sectoral considerations. In fact, the dummy variables introduced into the model, in order to capture the differences between the sectors, were all rejected during the fixed effects estimation.

This last result seems to contradict the conclusions of Johnsen and McMahon (2005) and Cassar and Holmes (2003) who found that the financing behavior of Australian SMEs was significantly influenced by the type of industry.

The variable of interest for our study, the age of SMEs, was negatively correlated with (S.T.D) but did not exert a statistically significant effect, which leads us to reject the hypothesis (H_1). This finding contradicted the conclusions of Serrasqueiro and Nunes (2012) and revealed that the granting of short-term debts to SMEs was not influenced by age, but that there were other factors that may explain the obtaining of this source of financing.

The main component of short-term credit was supplier credits obtained through interpersonal relationships based on trust between the owner of the SME and the suppliers. This type of informal financing did not require complicated formalities and was often obtained without any guarantee.

With respect to the size variable, we found that it had a negative and statistically significant correlation at the 1% level with (S.T.D). This lead us to adopt the hypothesis (H_5) and to confirm the conclusions of other studies on the determinants of the leverage effect of SMEs in France (Benkraiem and Gurau, 2013) and in Spain (Sánchez-Vidal and Martín-Ugedo, 2012). In fact, Tunisian SMEs tended to take on more debt in the short term in order to maintain the same ownership structure and to reduce the transaction and information costs associated with other means of financing.

Ultimately, despite the existence of a positive relationship between short-term debt and growth opportunities, this relationship was not statistically significant, which lead us to reject the hypothesis (H_9). This last resultwas similar to that of Benkraiem and Gurau (2013) who found that the variable "growth opportunities" had no significant effect on short-term debt, contrary to the results of Michaelas *et al.* (1999) which found a positive effect between the growth of British SMEs and the short-term leverage.

5.3. Regression Analysis for the « Long-Term Debt »

In order to explain the nature of the relationship between the long-term debt ratio and the different explanatory variables, we performed the Chow and Hausman tests that revealed a correlation between the specific effects and the explanatory variables. This led us to adopt the fixed effects model.

The estimation of the empirical model, for our sample, using the econometric software « STATA 14 » led to the following results as shown in Table 5:

Table-5. Regression results.

(L.T.D)it = 0,194 –	(0,039). Ageit –	(0,005). Sizeit –	(0,078). Growthit	
(2.06)**	(-2.76)*	(-0,66)	(-1,60)	
R² Within = 0,068		F (3,207) = 5,04		Level of significance of F = 0,0022*
Hausman test : Chi2 (3) = 5,20 ; Prob > Chi2 = 0,157				

Source: Author's Estimations using STATA 14 software.
(*): Significance at 1%; (**): Significance at 5%.

Firstly, it is important to underline that the long-term debt level of Tunisian SMEs was not influenced by sectoral considerations. This result corresponded to the findings of Jordan *et al.* (1998) who investigated the financial and strategic determinants of capital structure using a sample of SMEs from South East England. They claimed that industry was not as important as firm-specific aspects, since SMEs often operated in niche markets, which would reduce the impact of industry influences on capital structure.

With respect to the size variable, it would seem that the relationship was not statistically significant with the long-term debt of Tunisian SMEs, which lead us to contest the hypothesis (H_6). This last result was similar to that of Yazdanfar and Öhman (2016) who demonstrated that there was no significant relationship between the size of Swedish SMEs and the long-term leverage, unlike Sánchez-Vidal and Martín-Ugedo (2012) who found that Spanish SMEs tended to use more long-term debt as their size increased.

It was interesting to note that the age of Tunisian SMEs had a negative and significant influence at the 1% level on long-term debt, which lead us to reject the hypothesis (H_2). This last result seems to contradict the conclusions of Yazdanfar and Öhman (2016) and Serrasqueiro and Nunes (2012) who found that the oldest SMEs, in Sweden and Portugal respectively, had larger long-term debt than their younger counterparts.

However, the study conducted by Bhaird and Lucey (2010) revealed the same negative relationship between long-term debt and the age of the firm, indicating that as the SME matures and repays its old loans, it will opt for other less expensive means of financing (self-financing and even an IPO).

Finally, the variable "growth" did not seem to have a significant influence on the level of long-term debt for Tunisian SMEs, which lead us to contest the hypothesis (H_{10}). The most plausible explanation for this phenomenon is that this type of company uses other means than debt to finance their growth process.

This last result seems to contradict the findings of Benkraiem and Gurau (2013) and Degryse *et al.* (2012) who found that SMEs in France and the Netherlands, respectively, tended to increase their long-term debt when they had favorable growth opportunities.

5.4. Regression Analysis for the « Guarantees » Variable

In a last step, we will try to explain the causal link between the guarantee ratio (used as a support for the granting of external financing) and the different explanatory variables derived from the modeling of Bhaird and Lucey (2010).

The Chow and Hausman tests revealed a correlation between the specific effects and the explanatory variables, which led us to adopt the fixed effects model. The estimation of the empirical model using the econometric software STATA 14 led to the results reported in Table 6:

Table-6. Regression results

(GAR) it = 1,970 − (0,152). Ageit − (0,097). Sizeit − (0,331). Growthit		
(9.99)* (-5.12)* (-5,92)* (-3,24)*		
R² Within = 0,385	F (3,207) = 43,12	Level of significance of F = 0,000*
Hausman test : Chi2 (3) = 7,48 ; Prob > Chi2 = 0,058**		

Source: Author's Estimations using STATA 14 software.
(*): Significance at 1%.

First of all, it is interesting to emphasize the importance of the "guarantee" dimension in the financing process of Tunisian SMEs, indicating the extent of information asymmetry problems between the various stakeholders. Indeed, because of the high default costs associated with loans to SMEs, creditors often require collateral as a mandatory selection criterion.

In our case, and contrary to what was announced in the hypothesis (H_4), we found that the age of the SME is inversely related to the level of guarantee. The most plausible explanation was that, as the age of Tunisian SMEs progressed, the level of collateral required by creditors decreased due to credit history and the reduction of information asymmetry problems.

With respect to the size variable, we also found that it had a negative and significant correlation at the 1% level with the guarantees (GAR), which were contrary to what was announced through the hypothesis (H_7). This inverse relationship suggested that creditors judge small businesses primarily on the basis of the amount of collateral provided. Conversely, Tunisian bankers are much less demanding in terms of collateral with large companies and give them more benefits and facilities.

The last result is contrary to the conclusions of Bhaird and Lucey (2010) who asserted that bank financing for Tunisian SMEs depended mainly on the trust factor, whereas guarantees played only an auxiliary role in this process.

Finally, the presence of a negative and significant relationship between growth opportunities and the level of guarantees allows us to accept the hypothesis (H_{12}). This can be explained by the fact that the owners of high-growth SMEs often tend to maintain their position as principal shareholders, which may explain their decision to use internal funds or non-financial debt (corporate bonds).

Indeed, according to agency theory, SMEs with significant growth opportunities would not primarily use bank debt because they were more exposed to the problem of information asymmetry and thus to financial constraints from financial institutions. In this context, Bloch (2005) argues that financial restrictions could be even more severe for small Danish growing firms, due to credit market imperfections, confirming the assumption of credit rationing.

6. SUMMARY AND CONCLUSIONS

Empirical investigations on the capital structure of SMEs have been dominated by studies using data from developed countries. Therefore, the present study attempted to correct this deficiency by analyzing the influence of business life cycle stages (measured by firm age) on the capital structure of Tunisian SMEs.

Several studies seemed to agree that developing companies go through a series of successive phases (start-up phase, growth phase, maturity phase and a phase of decline) and that the transition from one phase of the life cycle to another is accompanied each time by changes in the sources of financing used by the SME. The advantage of this approach was to understand how the transition from one phase of the life cycle to another was accompanied by a change in the capital structure of SMEs.

In this article, we tried to demonstrate the link between the capital structure and the life cycle, through panel data estimation that was carried out on a sample of 70 Tunisian SMEs during the period of 2013-2016. This analysis shed light on several interesting observations:

First, the descriptive analysis revealed that the average debt ratio of our sample was around 59.7% (which is similar to the average debt ratio of Greek and Portuguese SMEs). With this ratio, it would seem that Tunisian

SMEs were using short-term credit more intensively (55.5%), while long-term debts were rarely employed (only 4.25%).

Secondly, we found that the self-financing variable had a significant and positive relationship with the age and size of the SME; which shows that the more the SME aged and grew, the more it was able to substitute the debt for self-financing. Similarly, the negative association between long-term debt and age showed that the borrowing requirements of Tunisian SMEs declined over time as retained earnings were accumulated.

Thirdly, empirical evidence suggested that the provision of guarantees to secure debt financing seems to follow the predictions of life cycle theory. For young and small businesses, the personal assets of the SME owner performed an important signalling role in obtaining external financing. Once the size of the SME became large, it would rely more on its fixed assets to overcome the problem of information asymmetry and to secure debt financing.

All these findings confirmed that the life cycle theory is perfectly adapted to describe the financial behavior adopted by Tunisian SMEs, which tended to use the debt (regardless of maturity) during the early stages of their life cycle. Once the SME advanced in age and matures, other sources of financing took over (mainly self-financing).

This study had the merit of developing a theoretical framework to help financial authorities as well as managers of SMEs to better understand the factors affecting the capital structure. On the one hand, this understanding would help SME managers plan adequate financing at the various stages of the company's development to reduce their cost of capital.

On the other hand, this study also had some implications for Tunisian financial decision-makers, who should recognize that SMEs are treated unfairly when granting bank loans. The challenge then is to set up financing structures adapted to their specific degree of risk to improve the availability and access to external financing for this type of enterprise.

REFERENCES

Adizes, I., 2004. Managing corporate life cycle. 2nd Edn., Santa Barbara. CA: The Adizes Institute Publishing.

Anthony, J.H. and K. Ramesh, 1992. Association between accounting performance measures and stock prices: A test of the life cycle hypothesis. Journal of Accounting and Economics, 15(2-3): 203-227.Available at: https://doi.org/10.1016/0165-4101(92)90018-w.

Aybar-Arias, C., A. Casino-Martínez and J. López-Gracia, 2012. On the adjustment speed of SMEs to their optimal capital structure. Small Business Economics, 39(4): 977-996.Available at: https://doi.org/10.1007/s11187-011-9327-6.

Benkraiem, R. and C. Gurau, 2013. How do corporate characteristics affect capital structure decisions of French SMEs?. International Journal of Entrepreneurial Behavior & Research, 19(2): 149-164.Available at: https://doi.org/10.1108/13552551311310356.

Berger, A.N. and G.F. Udell, 1998. The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. Journal of Banking & Finance, 22(6-8): 613-673.Available at: https://doi.org/10.1016/s0378-4266(98)00038-7.

Bhaird, C.M.A. and B. Lucey, 2010. Determinants of capital structure in Irish SMEs. Small Business Economics, 35(3): 357-375.Available at: https://doi.org/10.1007/s11187-008-9162-6.

Black, E.L., 1998. Life-cycle impacts on the incremental value-relevance of earnings and cash flow measures. Journal of Financial Statement Analysis, 4: 40-57.

Bloch, C., 2005. R&D investment and internal finance: The cash flow effect. Economics of Innovation and New Technology, 14(3): 213-223.Available at: https://doi.org/10.1080/1043859042000312710.

447

Brown, J.R. and G.W. Haynes, 2009. How strong is the link between internal finance and small firm growth? Evidence from the survey of small business finances. In United States Association for Small Business and Entrepreneurship. Conference Proceedings. United States Association for Small Business and Entrepreneurship. pp: 96.

Bulan, L. and Z. Yan, 2010. Firm maturity and the pecking order theory. International Journal of Business, 9(3): 179-199.Available at: http://dx.doi.org/10.2139/ssrn.1760505.

Cassar, G. and S. Holmes, 2003. Capital structure and financing of SMEs: Australian evidence. Accounting & Finance, 43(2): 123-147.Available at: https://doi.org/10.1111/1467-629x.t01-1-00085.

Daskalakis, N., N. Eriotis, E. Thanou and D. Vasiliou, 2014. Capital structure and size: New evidence across the broad spectrum of SMEs. Managerial Finance, 40(12): 1207-1222.Available at: https://doi.org/10.1108/mf-11-2013-0325.

DeAngelo, H., L. DeAngelo and R.M. Stulz, 2006. Dividend policy and the earned/contributed capital mix: A test of the life-cycle theory. Journal of Financial Economics, 81(2): 227-254.Available at: https://doi.org/10.1016/j.jfineco.2005.07.005.

Degryse, H., P. de Goeij and P. Kappert, 2012. The impact of firm and industry characteristics on small firms' capital structure. Small Business Economics, 38(4): 431-447.Available at: https://doi.org/10.1007/s11187-010-9281-8.

Dickinson, V., 2005. Firm life cycle and future profitability and growth. Working paper. School of Business. University of Wisconsin-Madison.

Dickinson, V., 2011. Cash flow patterns as a proxy for firm life cycle. The Accounting Review, 86(6): 1969-1994.Available at: https://doi.org/10.2308/accr-10130.

ELbekpashy, M.S. and K. ELgiziry, 2018. Investigating the impact of firm characteristics on capital structure of quoted and unquoted SMEs. Accounting and Finance Research, 7(1): 145-160.Available at: https://doi.org/10.5430/afr.v7n1p144.

Forte, D., L.A. Barros and W.T. Nakamura, 2013. Determinants of the capital structure of small and medium sized Brazilian enterprises. Brazilian Administration Review, 10(3): 347-369.Available at: https://doi.org/10.1590/s1807-76922013000300007.

Frielinghaus, A., B. Mostert and C. Firer, 2005. Capital structure and the firm's life stage. South African Journal of Business Management, 36(4): 9-18.Available at: https://journals.co.za/content/busman/36/4/EJC22301.

Gregory, B.T., M.W. Rutherford, S. Oswald and L. Gardiner, 2005. An empirical investigation of the growth cycle theory of small firm financing. Journal of Small Business Management, 43(4): 382-392.Available at: https://doi.org/10.1111/j.1540-627x.2005.00143.x.

Johnsen, P.C. and R.G. McMahon, 2005. Cross-industry differences in SME financing behaviour: An Australian perspective. Journal of Small Business and Enterprise Development, 12(2): 160-177.Available at: https://doi.org/10.1108/14626000510594584.

Jordan, J., J. Lowe and P. Taylor, 1998. Strategy and financial policy in UK small firms. Journal of Business Finance & Accounting, 25(1-2): 1-27.Available at: https://doi.org/10.1111/1468-5957.00176.

Kallunki, J.-P. and H. Silvola, 2008. The effect of organizational life cycle stage on the use of activity-based costing. Management Accounting Research, 19(1): 62-79.Available at: https://doi.org/10.1016/j.mar.2007.08.002.

La Rocca, M., T. La Rocca and A. Cariola, 2011. Capital structure decisions during a firm's life cycle. Small Business Economics, 37(1): 107-130.Available at: https://doi.org/10.1007/s11187-009-9229-z.

Lemmon, M.L. and J.F. Zender, 2010. Debt capacity and tests of capital structure theories. Journal of Financial and Quantitative Analysis, 45(5): 1161-1187.Available at: https://doi.org/10.1017/S0022109010000499.

Michaelas, N., F. Chittenden and P. Poutziouris, 1999. Financial policy and capital structure choice in UK SMEs: Empirical evidence from company panel data. Small Business Economics, 12(2): 113-130.

Miller, D. and P. Friesen, 1980. Archetypes of organizational transition. Administrative Science Quarterly, 25(2): 268-299.Available at: https://doi.org/10.2307/2392455.

Myers, S.C., 2001. Capital structure. Journal of Economic Perspectives, 15(2): 81-102.

Psillaki, M. and N. Daskalakis, 2009. Are the determinants of capital structure country or firm specific? Small Business Economics, 33(3): 319-333.Available at: https://doi.org/10.1007/s11187-008-9103-4.

Rehman, A.U., M. Wang and H. Yu, 2016. Dynamics of financial leverage across firm life cycle in Chinese firms: An empirical investigation using dynamic panel data model. China Finance and Economic Review, 4(1): 1-22.Available at: https://doi.org/10.1186/s40589-016-0041-z.

Saarani, A.N. and F. Shahadan, 2013. The determinant of capital structure of SMEs in Malaysia: Evidence from enterprise 50 (E50) SMEs. Asian Social Science, 9(6): 64-73.Available at: https://doi.org/10.5539/ass.v9n6p64.

Sammut, S., 1996. The small business start-up process, complexity of the management system and emergence of start-up scenarios. Proceedings of the 5th Conference of the International Association of Strategic Management.

Sánchez-Vidal, J. and J.F. Martín-Ugedo, 2012. Are the implications of the financial growth cycle confirmed for Spanish SMEs?. Journal of Business Economics and Management, 13(4): 637-665.Available at: https://doi.org/10.3846/16111699.2011.620161.

Serrasqueiro, Z. and P.M. Nunes, 2012. Is age a determinant of SMEs' financing decisions? Empirical evidence using panel data models. Entrepreneurship Theory and Practice, 36(4): 627-654.Available at: https://doi.org/10.1111/j.1540-6520.2010.00433.x.

Sogorb-Mira, F., 2005. How SME uniqueness affects capital structure: Evidence from a 1994–1998 Spanish data panel. Small Business Economics, 25(5): 447-457.Available at: https://doi.org/10.1007/s11187-004-6486-8.

Tian, L., L. Han and S. Zhang, 2015. Business life cycle and capital structure: Evidence from Chinese manufacturing firms. China & World Economy, 23(2): 22-39.Available at: https://doi.org/10.1111/cwe.12105.

Timmons, J.A. and S. Spinelli, 2004. New venture creation: Entrepreneurship for the 21st century. Boston. Massachusetts: McGraw-Hill.

Vieira, E.S., 2014. Capital structure determinants in the context of listed family firms. Journal of Economy, Business and Financing, 2(1): 12-25.

Yazdanfar, D., 2012. Agency costs theory and the financing life cycle empirical evidence from Swedish firm-level data. International Journal of Business and Globalisation, 8(2): 226-238.Available at: https://doi.org/10.1504/ijbg.2012.045397.

Yazdanfar, D. and P. Öhman, 2016. Capital structure dynamics among SMEs: Swedish empirical evidence. The Journal of Risk Finance, 17(2): 245-260.Available at: https://doi.org/10.1108/jrf-04-2015-0040.