

## Company's Indebtedness Trends in Small and Medium Sized Firms within the Company Systems Theory

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### Abstract

*The objective of this research is to verify the impact of a series of company's variables particularly representative in the literature review – on the debts degree in small and medium sized companies, which influence the debts degree. Our empirical survey has been contextualized to the company's systems theory (Ferrero, 1968) and permits to identify a series of variables which affect the company's indebtedness. We referred to Giacosa (2015) as a framework, which identified some company's variables which impact on the company's indebtedness. Our sample consists of small and medium sized companies, that are unlisted and that belong to the most representative sectors of Italian economy: manufacture; trade; construction; transporting and storage; professional, scientific and technical activities; ICT; administrative and support service activities; agriculture, forestry and fishing, utilities, real estate activities and accommodation, food and beverage. It emerged that the impact of a series of variables on the indebtedness has to be understood not as simple cause effect relationship: these relationship unites them, and creates a circuit of concatenation between variables, which influences on the company's indebtedness.*

**Keywords:** company's indebtedness; debts degree; small and medium companies; company's growth

### 1. Introduction

A number of studies have concerned the company's financial structure, starting from the Modigliani and Miller, creating numerous theories. A financial structure of those companies constitutes an important factor that has an impact on both business continuity and the growth. As a result, SMEs require external resources to seize the growth opportunities, because the resources generated internally are not sufficient to conduct operational activities and investments aimed at business growth. This results in the necessity to observe the relation between debt and invested capital and investigate what are its main determinants. The current study's objective is to understand what are the determinants of the company's financial structure, thus contributing to expanding of the literature regarding the study of SME's financial structure. The current research was developed using as a framework the studies of Giacosa (2015) and Broccardo et al. (2016), where some variables have been introduced that influence the company's financial structure. The sample is composed of small and medium sized enterprises that operate in manufacturing sector in Italy. The structure of current research is as follows. In the second paragraph, the analysis of the literature has been introduced, regarding the variety of variables that have important influence on the level of indebtedness. The third section represents the methodology used. Fourth paragraph contains the description of the results, which is followed by their discussion. Finally, the conclusions and implications of the current research have been outlined, along with its limitations

## 2. Literature

In recent years, the issue of financial structure of small and medium sized companies has been in the spotlight of numerous scholars, most of whom has investigated the capital structure of English SMEs (Van der Wijst and Thurik, 1993; Chittenden et al., 1996; Hamilton and Fox, 1998; Jordan et al., 1998; Michaelas et al., 1999; Hall et al., 2000). Most of those surveys is aimed at investigating the applicability of the theories developed in the contest of large enterprises to small and medium sized ones, using multivariate analysis (Michaelas et al. 1999; Chittenden et al. 1996; Hall et al. 2004; Sogorb Mira 2005; Esperança et al. 2003; Fu et al. 2002; Cassar and Holmes 2003; Heyman et al, 2008; Giacosa, 2015; Broccardo et al., 2016). Particularly, in the current research we have investigated a number of variables, which are particularly representative in the literature (Giacosa, 2015; Broccardo et al., 2016):

- Company's growth;
- Ability to repay financial debts;
- Company's financial situation;
- Turnover ratio;
- Company's age;
- Company's size;
- Intangible assets ratio;
- Economic sector to which company belongs.

### **The company's growth**

Cressy and Olofsson (1997) state that the growing companies require external financial resources, as the owners are unwilling to financing by a risk capital to avoid losing of the company's control, and therefore they prefer to recourse to the debt. Bhaird and Lucey (2010) agree that the growing companies imply a high level of indebtedness, demonstrating that the growth has an impact especially on level of medium/long term debt.

### **The ability to repay financial debts**

It is worth mentioning the importance of the company's ability of repayment financial debts using financial resources generated by its core activity (Broccardo et al 2016; Ferrero et al., 2006; Giacosa, 2011, 2012, 2015); Giacosa and Mazzoleni, 2012). The indicator represents a measure of the company risk (ECB, 2014).

### **The financial situation**

It should be expanded about the analysis of the company's financial situation in order to provide as comprehensive overview as possible. With this regard, it seems essential to investigate the companies' solvency, that is their ability to possess resources that permit them to repay financial commitments in timely manner (Ferrero et al., 2006; Value, 2001).

### **The turnover ratio**

The companies with lower turnover have recorded higher level of indebtedness (Confindustria, 2007; Partner Equity Markets, 2009). In particular, level of financial debts is higher in case of medium sized enterprises in comparison with the large companies (in terms of turnover), as the trade receivables' collection allowed them to obtain financial resources.

### **The company's age**

Mature companies have the possibility to rely on financial resources generated internally and therefore require lesser external financial resources (López Gracia and Sogorb Mira, 2008) as opposed to young companies whose cash flows are low or even negative and in order to support own activity they require financial debt. Other authors indicate that the company's age is not relevant in the determination of the level of indebtedness (Chittenden et al. (1996).

### **The company's size**

Titman and Wessels 1988 claim that large companies provide more certainty than the SMEs, making an investment in large companies less risky than in case of small and medium sized companies. However, large companies generate greater internal resources in comparison with small/medium sized ones, reducing the incentive of resorting to debt (Giacosa et al., 2016). In this context (Kon and Storey, 2003), Black et al. (1996), Berger and Udell (1990) state that bank loans addressed to small and medium sized companies are collateralised loans.

### The intangible assets ratio

Ratio of intangible assets over invested capital can be discussed from different points of view. High intangible asset ratio should reduce level of indebtedness (Titman and Wessels (1988), Fama and French (2002), and Graham and Harvey (2001)). While Sogorb Mira (2005) finds a negative relationship between short term debts and intangible assets ratio, Michaelas et al. (1999) reports a positive relationship between them.

### The economic sectors

Strategical sectors can also receive government incentives that can determine more or less strong recourse to debt comparing to other sectors (Bhaird and Lucey, 2010). Cassar and Holmes (2003) state that the companies from the same sector, operating in the same surrounding and facing the same problems, tend to financing on the same way. Weston and Brigham came to conclusion that there are some differences between the sectors characterized by different rate of growth and the traditional sectors and these based on recent activities.

## 3. Methodology

### 3.1 The sample

The sample consists of small and medium sized active companies (using the definition of small and medium sized companies in accordance with European Union Recommendation n.361 from 2003), that are unlisted and that belong to the most representative sectors of Italian economy. In order to choose the companies the Aida Bureau Van Dijk database has been used (as it provides all necessary economic financial data on over one million Italian companies) regarding the Ateco's economic activities adopted by ISTAT. Finally, the sample on which our analysis has been conducted consists of 12,175 Italian companies.

### 3.2 The method

As specified before, the aim of the following research is to examine the impact of a series of company's variables considered to be particular representative in the literature – on the SME's financial structure operating in different sectors, which affect the debt degree. In this context, our framework is represented by Giacosa (2015), which identified some company's variables which impact on its financial structure. In addition, our research is complementary to Broccardo et al.,2016): it assessed a series of variable which impact on the SME's financial structure operating in the manufacturing sector (which is a representative sector for Italian economy) and how these variables identified as its determinants contribute to recourse to short , medium or long term debt. For this purpose, we have introduced the following RQ:

#### **RQ: which determinants have the greatest impact on the company's debt?**

Using the econometric software Gretl, OLS model has been developed regarding the case studies of the sample's companies and eliminating outliers that could compromise the importance of the results.

The OLS model is described as follows:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n + \varepsilon$$

where:

$y$  = it represents the variables in the observation

$\alpha$  = it is the constant of the model

$\beta_i$  = it represents the regression coefficient for the variable  $x_i$

$x_i$  = it represents the  $n^{\text{th}}$  independent variable

$\varepsilon$  = it represents the end of an error, called alternatively "residue error"

$n$  = it represents the number of variables contained in the model

As possible dependent variables (that is Y) have been identified: the relation between total debt and invested capital, relation between short term debt and invested capital and relation between medium and long term debt and invested capital. The inclusion of dummy variables on the sectors in our model permits to assess the impact of economic sectors on the company's financial structure. This variable assumes value of 1 for some sectors and value of 0 for other sectors. Accuracy of the model has been checked with reference to R correct framework, that explains which part of the phenomenon is clarify by the variables introduced in our model.

#### 4. Findings and discussion

The findings have been identified by observing the following aspects: The presence of some differences between several economic sectors. To reach this purpose the descriptive statistics (average and standard deviation) for each sector are illustrated (table 1) The presence of the relationships between the explanatory variables included in the model.

**Table 1 –Average and standard deviation of the variables for each economic sector**

Sectors	Manufacture		Trade		Construction		Transporting and storage		Professional, scientific and technical activities		ICT	
	Average	Std D.	Average	Std D.	Average	Std D.	Average	Std D.	Average	Std D.	Average	Std D.
NFP/EBITDA	1,62	2,58	2,36	3,07	1,62	3,01	0,73	1,74	0,50	2,21	0,44	1,95
CFA	1,95	1,01	1,98	1,22	2,11	1,45	1,62	1,03	2,93	2,80	2,84	2,70
Age	3,30	0,50	3,11	0,58	3,17	0,58	3,14	0,60	2,97	0,60	3,03	0,55
CAGR PV	0,03	0,08	0,21	0,19	0,10	0,30	0,19	0,21	0,11	0,23	0,06	0,24
CAGR TA	0,03	0,07	0,03	0,09	0,01	0,14	0,02	0,11	0,04	0,17	0,04	0,14
Intangible Assets/TA	0,02	0,03	0,03	0,05	0,02	0,06	0,02	0,02	0,04	0,07	0,08	0,10
Sales/TA	1,13	0,37	1,77	0,81	0,93	0,41	1,67	0,75	1,34	0,61	1,23	0,53
Size	7,13	0,24	7,09	0,26	7,04	0,25	7,08	0,26	7,06	0,25	7,08	0,26
CAGR Employees	0,02	0,10	0,04	0,25	0,00	0,10	0,05	0,42	0,04	0,13	0,03	0,14
Debts/TA	0,64	0,17	0,76	0,17	0,78	0,16	0,77	0,19	0,77	0,18	0,76	0,17
STD/TA	0,48	0,15	0,62	0,19	0,63	0,18	0,62	0,19	0,62	0,21	0,59	0,18
LTD/TA	0,16	0,09	0,13	0,10	0,15	0,11	0,15	0,11	0,14	0,12	0,17	0,11
Sectors	Agriculture, forestry and fishing		Utilities		Real Estate Activities		Accommodation, food and beverage		Administrative and support service activities			
Variables	Average	Std D.	Average	Std D.	Average	Average	Average	Std D.	Average	Std D.		
NFP/EBITDA	3,71	4,40	0,97	1,68	3,71	3,71	1,34	2,54	0,35	2,48		
CFA	1,11	0,49	1,33	0,56	1,11	1,11	1,01	0,37	2,35	2,09		
Age	3,50	0,68	3,06	0,47	3,50	3,50	3,26	0,59	3,02	0,54		
CAGR PV	0,02	0,33	0,01	0,27	0,02	0,02	0,09	0,46	0,19	0,24		
CAGR TA	0,02	0,08	0,01	0,10	0,02	0,02	0,01	0,07	0,04	0,15		
Intangible Assets/TA	0,01	0,01	0,02	0,02	0,01	0,01	0,06	0,08	0,04	0,07		
Sales/TA	1,21	0,77	1,15	0,55	1,21	1,21	1,27	0,87	1,81	1,03		
Size	7,11	0,25	7,09	0,24	7,11	7,11	7,01	0,25	7,08	0,27		
CAGR Employees	0,02	0,11	0,02	0,07	0,02	0,02	0,01	0,09	0,03	0,11		
Debts/TA	0,76	0,17	0,74	0,18	0,76	0,76	0,66	0,24	0,77	0,18		
STD/TA	0,60	0,21	0,54	0,20	0,60	0,60	0,41	0,24	0,64	0,20		
LTD/TA	0,16	0,12	0,20	0,16	0,16	0,16	0,25	0,19	0,13	0,11		

NFP/EBITDA: companies' net financial position over EBITDA; CFA: (covering fixed assets): degree of covering fixed assets with medium/long term sources of funding; Age: age of the company; CAGR PV: company's growth in terms of production value; CAGR TA: company's growth in terms of total assets; Sales/TA: sales over total assets of the company; Intangible Assets/TA: comparison between intangible assets over total assets; CAGR Employees: growth in terms of employees; Size: company's size; Debts/TA: Impact of debts on total assets; STD/TA: Impact of short term debts on total assets; LTD/TA: Impact of long term debts on total assets

It emerges that the average for the sectors of the variable DEBTS/TA is different for the manufacture, real estate activities and accommodation, food and beverage, while in case of other sectors the values are substantially similar.

Some aspects of observation emerged from the analysis of the results. The mature companies recourse in a greater extent to medium/long term debts and in a lesser extent to short term debt (Broccardo et al., 2016). Such an evidence can result from multiple factors such as the need to gain market shares and troubles with access to medium/long term bank debt (Van der Wijst and Thurik, 1993; Chittenden et al., 1996). In particular, the newly created companies often use competitive prices and long collecting days to gain market shares, what in the first years of operating activity results in having small or even negative cash flow or gain, leading to recourse to short term debt to meet current requirements.

### **6. Conclusions, implications and limitations**

Present research allowed to deepen the impact of a series of variables used in previous studies (Giacosa, 2015; Broccardo et al., 2016) on short and medium/long term debt. Moreover, it is possible to investigate the impact of the sector variable on general indebtedness and in particular on indebtedness in short and medium long time. There is a relation between variables introduced by the literature, that permits to present the level of indebtedness. In addition, the newly created companies meet barriers because their relations with banks are still in the early stage and as a result, they have to recourse to the short term debt (Kon and Storey, 2003; Black et al. (1996); Berger and Udell, 1990). On the other hand, the mature companies can count on greater financial sources due to both a greater cash flows generated internally and developed relations with banks. While resources generated internally permit to finance current operating activities, the external resources obtained from bank institutions enable them to finance their projects.

The present research differs from the previous one in the following aspects: theoretical aspects: the effects of our survey regard the management and the ownership. In fact, the introduced model permits to assess the results of wide range of decisions that concern certain corporate variables about the level of the company's debt; empirical aspects: the accuracy of developed model regarding the systemic theory has been investigated. It is necessary to point out some limitations that characterize current research: regarding the sample: it is composed only by Italian companies that belong to several sectors. Consequently, it would be interesting to compare the topic in another context to highlight the impact of the "country system" variable and to give their specificities that characterize each country; regarding the methodology: in our model we don't consider the qualitative variables, that could explain better the level of indebtedness.

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