

Firms Use of Financial Leverage: Evidence from Italy

Prof. **Francesco Campanella** (Corresponding author)
Department of Economics, University of Campania L. Vanvitelli,
Corso Gran Priorato di Malta, Capua, 81043, Caserta, ITALY
E-mail: francesco.campanella@unicampania.it

Dr. **Luana Serino**
Department of Economics, University of Campania L. Vanvitelli,
Corso Gran Priorato di Malta, Capua, 81043, Caserta, ITALY
E-mail: luana.serino@unicampania.it

Abstract: In Italy, businesses are widely recognized as a main source of economic growth and for the creation of jobs. This growth is very much dependent on access to external financial resources, but the access to external capital is also a critical issue. Some prior research has suggested that different structural elements of a company and governance characteristics are correlated with their financial leverage. However, to the best of our knowledge, few studies focus on gender governance in Italy. For this reason, our study contributes to advancing gender research in Italy. Our paper seeks to extend the findings of Coleman and Cohn (2000) regarding the association between corporate characteristics (both in terms of structure and governance) and financial leverage. Our sample consists of data collected from 2016 balance sheets and income statements of 578 Italian firms. Our study demonstrates the association between corporate characteristics and financial leverage. In summary, we are left with the following results: the age, size, organizational form, and profitability are correlated with the financial leverage; therefore, the corporate debt level is not correlated with the gender ownership. Additional analysis of differences in riskiness between male- and women-led companies would be desirable but remains an interesting matter for future research.

Keywords: Corporate structure; Financial leverage; Firms; Gender; Governance

JEL Classification: G19, G32, G41

1. Introduction

Small firms are widely recognized as a principal source of economic growth and creation of jobs in Italy. Furthermore, this growth is very much dependent on access to external financial resources, mainly bank ones.

Some prior research has suggested that different structural elements of a company are correlated with the company debt level. In this sense, the corporate performance may also represent an element of correlation with the business debt level (Maganelli *et al.*, 2016). Another stream of literature investigates the relation between gender governance and financial leverage (Moro *et al.*, 2017). Several studies found that female firms are less likely to assume bank loans than male

counterparts. However, to the best of our knowledge, few studies focus on gender governance in Italy. For this reason, our study contributes to advancing gender research in Italy.

The purpose of our study is to identify the factors (structural and governance) that contribute to the level of business debt. Our paper intends to provide evidence of the relationship between corporate elements and the financial leverage from two perspectives: one related to structural characteristics of a company (age, organizational form, sector, size,) and corporate performance, and the other related to the gender ownership (man-owned or woman-owned firm). In other words, our research question is: “*What firm factors are correlated with leverage ratio?*”.

In particular, our paper seeks to extend the findings of Coleman and Cohn (2000) regarding the association between business characteristics (both in terms of structure and governance) and financial leverage in Italy. Italy is a good candidate for this study because of its key financial structure features: the modest development of the stock and private bond markets and the absence of a commercial paper market (Angeloni *et al.*,1995).

The remainder of the paper is organized in four sections as follows. Section 2 is a brief discussion of literature related to the theme and presentation of our hypotheses. In Section 3, we describe the dataset and the variables used in this study. Section 4 presents the empirical results, while in Section 5 we discuss our findings.

2. Literature Review

Myers (1984) alludes to a pecking order theory of finance stating how firms choose additional resource in times of need. First, businesses prefer to use internally generated funds in the form of retained earnings. When outside funds are necessary, firms first prefer bank resources in the form of loans, but will use costlier external equity only as a last resort and rarely.

The evidence suggests that in a bank-centered country, like Italy, that the banking system discharges its important role of lender to a real and enterprise economy. Thus, Italy is an ideal candidate for testing a research question regarding the factors that may be correlated with the leverage ratio because of a bank-centered financial structure and a sizeable trade debt (Forestieri, 2014). From a financial structure perspective, countries may have a bank-based or market-based system. The financial structure of Italy is profoundly different from that of the United Kingdom (Schiantarelli & Sembenelli, 1999). In the UK, as in the United States, publicly issued financial instruments represent important external source. majority of Italy, the financial structure is characterized by bond markets that are much less developed and by a greater reliance on a banking system that provides funds to firms and private individuals (Accornero *et al.*, 2017). Italy, Germany, and Japan are considered bank-based because banks play the main leading role to private economy (Demirgüç-Kunt & Huizinga, 2000).

According Gill *et al.*(2011), an optimal capital structure comprises some debt and it is a “best” debt ratio for the firm, which in turn, minimizes the cost of capital and reduce the chances of bankruptcy. The findings of the study conducted by Cuong and Thi (2012) showed that the optimal debt ratio (total debt to total assets ratio) should not exceed 59.27% as a higher debt ratio is related to business value. Since capital structure is linked to corporate sustainability (Shubita & Maroof-Alsawalhah,2012), it is important to find the important factors that are correlated with firms’

financial leverage. Thus, the matter of capital structure cannot be ignored because it is important for the long-term survivability of the firm.

Prior research documents demonstrated that the both structural and governance characteristics of the firms are correlated with their level of indebtedness.

A study conducted by Schwartz and Van Tassel (1950) is among the earliest works that confirm the negative relationship that exists between size and leverage.

Unlike larger and publicly held companies, small firms have no opportunity to turn to the bond market because of high cost of registering and issuing securities. According to this stream of literature (Berger & Udell, 1995; Cooley & Quandrini, 2001; Faulkender *et al.*, 2006), smaller firms, even if paying fewer dividends, do fall back heavily on bank debts for two reasons. Firstly, they invest more than larger firms and secondly larger firms have more access to equity funding than smaller firms. However, the thesis about the negative relationship between size and leverage is combated by other researchers that support a positive relationship. Furthermore, small businesses are often young and lack the necessary track record in terms of profit indexes to qualify them for debt finance. Another argument suggests that a negative relationship between leverage and firm size is related to transparency and disclosure. Coleman (2000) research results showed that young and new firms are significantly less likely to have a higher debt level because they suffer from a liability of newness (Stinchcombe, 1965). Among the factors that have been used to support the positive relationship between size and leverage the concept of diversification is include (Shumway, 2001). Indeed, larger firms are more diversified, but many small businesses are in service industries that lack valuable assets which could be used as collateral.

The sector of activity may also be correlated with the level of financial leverage taken by a firm. According to literature (Carter & Shaw, 2006; Riding & Swift, 1990; Kammoun & Triki, 2016), businesses that operate in the service sector are less likely to have a high level of external loans because the principal resource is the human capital of the owner. Vice versa, firms that operate in industries that are highly capital intensive, such as manufacturing, transportation, and construction, may be more likely to use external resources (Marlow & Patton, 2005; Sharma, 2006).

Regarding performance, and according to some researchers (Binks & Ennew, 1996; Cole & Mehran, 2009), more profitable firms have higher debt levels because they are more attractive to financial institutions. According to Jensen (1986), profitable firms signal quality by leveraging up, resulting in a positive relation between profitability and leverage. This agrees with research provided by Modigliani and Miller (1963).

In contrast to the above view, another stream of literature has found a negative relationship between profitability and leverage (Coleman, 2007; Myers, 2001; Negash, 2015). According to Berger and Udell (1995), profitable firms may be more likely to self-finance with retained earnings rather than asking external capital. Thus, less profitable firms tend to take on more debt because they cannot finance themselves. Additionally, a few of studies have found that the organizational form is also correlated to firm' level of indebtedness, due to limited or unlimited liability in the event of firm' default (Blanchflower *et al.*, 2003; Cavalluzzo *et al.*, 2002). This distinction may encourage the corporations to take greater risk-taking and willingness to assume higher level of business debt. From the corporate governance perspective, different studies found that women-owned businesses are less likely to use bank loans than those owned by men (Cesaroni, 2010; Calcagnini & Lenti, 2007). Researches have proposed different theories to explain why women

entrepreneurs may use less debt than men. According to one theory, there may be a gender discrimination, caused by biases and stereotypes, that place women at a disadvantage (Alesina and Giuliano, 2010). This way of thinking is reflected in a “taste-based discrimination” in credit markets, pioneered by Becker (1957). Women are not seen as successful businesswomen and entrepreneurs, and this conducts a credit crunch towards them (Tarantola & Magliocco, 2007).

A recent strand of behavioral research (Cesaroni, 2010; Coleman & Robb, 2009; Croson & Gneezy, 2009; Treichel & Scott, 2006) stated that the differences in the level of leverage between male and female businesses is the consequence of differences related to motivations and behavioral aspects that are typical of women. Thus, a risk aversion is seen as women’s aversion to assume the burden to repay their corporate debt (Guiso *et al.*, 2013; Lozzi & Mistrulli, 2014). A third explanation states that women enterprises are not levered because they do not need to ask for bank loans. This is because women-led firms tend to be smaller and more heavily concentrated in less intensive capital sectors (Coleman, 2000; Riding & Swift, 1990).

Table 1 shows the summary of the findings of previous literature about the link between corporate structure and governance on leverage.

Table 1. Previous findings on the link between structure, governance and financial leverage

Literature	Main empirical findings
Beck <i>et al.</i> , 2008; Beck and Demirguc-Kunt, 2006; Berger and Udell, 1995; Cassar, 2004; Cole and Wolken, 1995; Cole <i>et al.</i> , 1996; Cooley and Quadrini, 2001; Faulkender <i>et al.</i> , 2006; Petersen and Rajan, 1994	These articles state a negative relationship between size and financial leverage. Thus, smaller firms are more likely to have high debt levels.
Coleman, 2000; Hyytinen and Pajarinen, 2005; Rajan and Zingales, 1995	The authors support the positive relationship between size and leverage. Accordingly, larger firms tend to have higher debt ratio than smaller firms.
Carter and Shaw, 2006; Marlow and Patton, 2005; Riding and Swift, 1990; Sharma, 2006	Articles present that businesses operating in service industry are less likely to have high debt level.
Angelini <i>et al.</i> 1998; Berger and Udell, 1995; Coleman, 2000 Moro <i>et al.</i> , 2017; Petersen and Rajan, 1994	It is stated that new and young firms tend to have lower debt ratios than older ones.
Blanchflower <i>et al.</i> , 2003; Cavalluzzo <i>et al.</i> , 2002	Authors noted that corporations are more likely to have higher debt levels than proprietorship and partnership companies.
Berger and Udell, 1995; Binks and Ennew, 1996; Coleman and Cohn, 2000; Robb <i>et al.</i> , 2009; Ruland and Zhou, 2005	There is a positive relationship between leverage and profitability. More profitable firms have higher debt levels.
Coleman, 2007; Negash, 2015; Myers, 2001	More profitable firms have lower leverage ratios.
Bellucci <i>et al.</i> , 2010; Calcagnini and Lenti, 2007; Cesaroni; 2010; Coleman and Robb, 2009	Women-led firms are more likely to have higher debt ratios than male counterparts.

Consistent with Antoniou *et al.* (2008), we calculate book financial leverage, defined as the ratio of book value of total financial debt divided by total assets (TD/TA). In literature, a firm's performance is measured in a number of ways, both through accounting based and capital market-based measures (Al-Hares & Saleem, 2017).

According to Huang and Song (2005), the best performance proxies are profitability (ROS, ROA, and ROE) and among them, ROS is a flow measure and is less sensitive to inflation and accounting conventions. Therefore, our final performance proxy is ROS index.

By looking at the relationship of corporate characteristics, performance, and level of financial debt we want to investigate these hypotheses:

Hp1: Firm's age is correlated with the debt level;

Hp2: Debt level is different whether the firms are a corporation or a partnership;

Hp3: The industry activity is correlated with debt level;

Hp4: Debt level is different whether the firms are small or large;

Hp5: Return of Sales (our proxy to measure the performance of business sales) is correlated with the debt level.

Furthermore, we want to analyze whether ownership characteristic may affect the debt level. So, we formalize the following hypothesis:

Hp6: Debt level is different whether the firms are male-owned or women-owned.

3. Data and Methodology

Data for this research were extracted from Aida Bureau Van Dijk. Our sample set consists of 578 Italian firms. We collected data from balance sheets and income statements for 2016. Regarding the methodology, hypotheses demonstration was carried out using a linear analysis regression (OLS). This empirical research is not intended to highlight the change in the correlation between firm's structure and governance and the leverage caused by systemic risk events over time. Indeed, our research wants to only highlight the existence, or not, of a correlation in a given time. This methodological approach is used in other similar works (Coleman, 2000; Coleman, 2002; Coleman & Cohn, 1999; Gill *et al.*, 2009; Gill *et al.*, 2011; Shubita & Maroof-Alsawalhah, 2012). We used Stata 15. The proxy variables were selected from previous empirical studies (Cole & Wolken, 1995; Coleman, 2007; Coleman & Carsky, 1999; Coleman & Cohn, 1999; Binks and Ennew, 1996; Orser, *et al.*, 2000).

The relationship between age and financial leverage is studied by Angelini *et al.* (1998), Berger and Udell (1995), Coleman (2002) Moro *et al.* (2017), and Petersen and Rajan (1994). The relationship between the organizational form and the financial leverage is investigated by Blanchflower *et al.* (2003) and Cavalluzzo *et al.* (2002), while the correlation between the industry and the financial leverage is shown by Bradley *et al.* (1984), Carter and Shaw (2006), Marlow and

Patton (2005), Riding and Swift (1990), and Sharma (2006). Several scholars (Beck & Demircug-Kunt, 2006; Beck *et al.*, 2008; Berger & Udell, 1995; Cassar, 2004; Cole & Wolken, 1995; Cole *et al.*, 1996; Cooley & Quandrini, 2001; Faulkender *et al.*, 2006; Petersen & Rajan, 1994; Rajan & Zingales, 1995) have been interested in the relationship between firm size and the degree of financial leverage; while the correlation between the performance and financial leverage use is investigated by Berger and Udell (1995), Binks and Ennew (1996), Coleman and Cohn (2000), Coleman (2002), Negash (2001), Myers (2001), Robb *et al.* (2009), and Ruland and Zhou (2005). Finally, the correlation between women- firms on the credit access is empirically studied by a growing number of scholars such as Arzu and Mantovani (2016), Calcagnini and Lenti (2007), Cesaroni (2010), Coleman (2000), and Moro *et al.* (2017).

As our paper seeks to extend Coleman and Cohn (1999) findings regarding the association between business characteristics (both in terms of structure and governance) and financial leverage in Italy, using a set of selected proxy variables which includes six factors: Age, Organizational Form, Industry, Size, Return of Sales, and Female.

The regression model took the following form:

$$D/V = \alpha + \beta_1 age + \beta_2 org_form + \beta_3 industry + \beta_4 size + \beta_5 ROS + \beta_6 gender$$

The dependent variable, D/V , represents the ratio to total debt to total assets.

The independent variables are the following:

Age: the number of years a firm has been in existence (in log). Based on literature, there are different keys to understanding the meaning of the age of a company. In management literature, the age of a company is a proxy of the skills and ability of a company to stay on the market. Thus, businesses that are less established and are in a startup phase are considered riskier than older ones because they have not established a track record that proves their capability to survive (Angelini *et al.*, 1998; Berger and Udell, 1995). Instead, in the financial literature, the age variable can take on a different meaning. Young and new firms are less likely to have higher debt levels due to a lack of a trusting relationship with the lender which is developed over time (Coleman, 2000; Moro *et al.*, 2017; Petersen & Rajan, 1994). Accordingly, we assume that the older the firm is the higher the financial leverage is. Indeed, the oldest firm is considered more bankable because it has a consistent financial track record (Berger & Black, 2011).

Organizational Form: this variable is constructed as a dummy. It is set at 1 if the firm is a partnership or a proprietorship and 0 if it is a corporation. This variable represents organizational form and it is used to determine whether businesses have adopted the corporate form which has an advantage in terms of access to credit compared to partnerships or proprietorships. According to the literature (Blanchflower, 2003; Osteryoung *et al.*, 1997), corporation firms tend to be more leveraged due to limited liability in the event of default. Based on these concepts, we think that financial leverage is lower in partnership or proprietorship firms because they involve greater financial risk.

Industry: this variable is coded as a dichotomous variable. It is equal to 1 if the firm operates in the service business; or 0 otherwise. According to literature, businesses operating in mining, manufacturing, and construction sectors are more likely to use external capital than firms operating in the service industry (Marlow & Patton, 2005; Sharma, 2006). This is because service businesses do not assets that can be used as physical collateral associated with the firm, as the principal

resource is the human capital of the owner and their assets are mainly intangible (Bradley *et al.*, 1984; Carter & Shaw, 2006; Coleman, 2000). In accordance with the literature, we expect that the sector of activity is correlated with the financial leverage.

Size: log of 2016 employees. In the literature, the results about the correlation between size and financial leverage are mixed. According to some studies (Beck *et al.*, 2008), small firms tend to have higher degree of financial leverage for two main reasons: first, because of high cost of registering and issuing securities related to the bond market, and second, smaller firms have less access to equity funding than larger firms. According to other researchers, small businesses are often young and lack the necessary track record in terms of financial indexes that proves their capability to honor their future obligations (Berger & Udell, 2011; Coleman, 2007). However, we think that bigger the size, the higher the financial debt ratio.

ROS: net income 2016/sales 2016. This variable is a measure of a firm's profitability. However, also on the theme of relationship between profitability and leverage, the empirical results are inconclusive. Some studies (Berger & Udell, 1995; Coleman, 2004; Negash, 2015) argue that profitable firms are more likely to self-finance rather than asking for loans. However, some researchers (Binks & Ennew, 1996; Coleman & Cohn, 1999) show that more profitable firms have higher debt levels because they are more attractive to the banking system; we hypothesize that the higher ROS index, the higher the financial leverage.

Gender: this variable is included in order to capture gender differences in financial structure. We use it as a governance variable and it is coded as dichotomous. Gender equals 1 if the firm is woman-owned and 0 if otherwise. In our conceptualization, based on important empirical studies (Alesina & Giuliano, 2010; Arzu & Mantovani, 2016; Moro *et al.*, 2017; Tarantola & Magliocco, 2007), we assume that female firms suffer from a taste-based discrimination in credit markets (Becker, 1957).

The following section shows the results obtained by the methodology applied.

4. Empirical Results

Before commenting on the regression analysis and answering the hypothesis of research, it is necessary to make some considerations regarding the correlation analysis between the variables distributed normally using the Pearson indices correlation matrix (Table 2). Table 2 shows that many variables in 2016 are significantly correlated, but Pearson's indices are not high.

Table 2. Pearson correlation

Variable	TD/TA	Age	Org Form	Industry	Size	ROS	Gender
TD/TA	1						
Age	0.194***	1					
Org Form	-0.186***	-0.013	1				
Industry	-0.072*	-0.049	0.006	1			
Size	0.126***	0.051	0.240***	-0.200***	1		
ROS	-0.117**	-0.035	-0.005	0.050	-0.063	1	
Gender	-0.099**	-0.080*	-0.303***	0.456***	-0.457***	0.069*	1

Note: ***, **, and * indicate that correlation is significant at the 0.01, 0.05, and 0.10 level, respectively.

To investigate the relationship between the variables under investigation and provide responses to the research hypotheses, a linear regression analysis was performed. However, before running the data regression analysis, we practiced the VIF and tolerance tests in order to ensure the absence of multicollinearity (Table 3). The aforementioned tests were all statistically significant (Hair, Black, Babin, & Anderson, 2010).

Table 3. VIF and tolerance tests

Variable	VIF	Tolerance
<i>Gender</i>	1.68	0.60
<i>Industry</i>	1.30	0.77
<i>Size</i>	1.29	0.78
<i>Org Form</i>	1.15	0.87
<i>ROS</i>	1.01	0.99
<i>Age</i>	1.01	0.99
Means	1.24	0.84

Table 3 shows a VIF coefficient equal to 1.24 and a tolerance coefficient equal to 0.84. These tests fulfill the condition of multicollinearity of independent variables. Linear regression analysis focused on dependent and independent variables in regard to corporate element (in terms of structure and ownership) and debt level. The results of regression analysis are presented in Table 4.

The statistical results show that the variable Age is positively correlated with the debt level. Thus, the older the company the higher level of debt. The variable Org Form that represents the business form chosen by the company is negatively correlated with the level of debt. For this reason, if the firm assumes the partnership form its level of debt is lower than a corporation firm.

Table 4. Linear Regression Analysis 2016 (Coefficient and t-value)

Summary of regression	Y= TD/TA	Coefficient and t-value
Number of obs., N = 578	<i>Constant</i>	14.26 (3.17)***
	<i>Age</i>	0.215 (4.38)***
R ² = 0.12	<i>Org Form</i>	-14.94 (-5.80)***
	<i>Industry</i>	0.719 (0.31)
F-Test = 12.41***	<i>Size</i>	4.544 (2.83)***
	<i>Ros</i>	-0.617 (-2.48)**
	<i>Gender</i>	-5.124(-1.99)**

Note: *** and ** indicate the t-value is significant at the 0.01 and 0.05 levels, respectively.

Moreover, the variable Industry is not correlated with the dependent variable. We do not find consistent support for industry as a variable that is correlated with the use of leverage. This means that the sector of activity is not correlated with the degree of bank debt of a company. The variable Size is positively correlated with debt level. Thus, the larger the company the higher level of debt. ROS index, proxy of corporate performance, is negatively correlated with the ratio debt/total assets. Thus, more profitable firms (ROS) are less likely to have higher level of bank debts. The gender variable is negatively correlated with the dependent variable. This statistical association means that

the ownership characteristics of a firm is linked to its level of debt. In other words, if a firm is a woman-led firm, the level of indebtedness decreases. The empirical results show that many structural elements and the corporate ownership of a firm are correlated with its level of bank debt.

The interpretation of our empirical result is discussed further below.

5. Discussion and Conclusions

Considering the final statistical results deducted from the regression analysis, we have found that some structural characteristics are correlated with the propensity of a company to borrow loans. Therefore, the business ownership gender is related to the debt level. Particularly, Hypothesis 1 is supported. Considering the result, we note that firm age exhibits a direct relationship with debt level. The older the firm is the higher its bank debt level. Consistent with a significant stream of literature (Angelini *et al.*, 1998; Berger & Udell, 1995; Coleman, 2000; Moro *et al.*, 2017; Petersen & Rajan, 1994), we find new and young firms tend to have a low debt ratio compared to the older ones. According to Berger and Black (2011), businesses that are less established are affected by a higher level of information asymmetry and are considered riskier than older ones since they have not established a track record that proves their capability to survive and honor their future obligations. Thus, this result is consistent with what is defined as liability of newness (Coleman, 2000).

Hypothesis 2 is supported. Consistent with Blanchflower *et al.* (2003) and Cavalluzzo *et al.* (2002), we support a statistical relationship between the organizational form of a company and its leverage ratio. The firm that assumes the corporation form tends to have a higher level of debt than a partnership company. According to the literature, corporation firms have the advantage of limited liability and thus they are more likely to assume bank loans than other firms (partnership or proprietorship) in which the owners and the partners respond personally, with their fund, in the event of bankruptcy.

Regarding the Hypothesis 3, it is not supported. Indeed, in our empirical results the industry of activity does not seem to be related to the business debt level. It should be noted that the findings of this paper are inconsistent with the findings of those studies which indicate a significant relationship between industry of activity and leverage (Bradley *et al.*, 1984; Carter & Shaw, 2006; Marlow & Patton, 2005; Riding & Swift, 1990; Sharma, 2006). Indeed, we find no evidence to support the notion that the business sector is linked to the leverage ratio.

About Hypothesis 4, it is supported. According to the literature, corporate size seems to be one of the most important determinants of financial leverage. The larger a firm is, the greater the level of debt. The findings of this study lend some support to the findings of those studies that claimed a positive relationship between size and leverage (e.g. Beck and Demirguc-Kunt, 2006; Beck *et al.*, 2008; Cassar, 2004; Cole & Wolken, 1995; Cole *et al.*, 1996). Thus, our paper contradicts the results of those studies that showed a positive relationship between the two variables (Berger & Udell, 1995; Cooley & Quandrini, 2001; Faulkender *et al.*, 2006; Rajan & Zingales, 1995). There are different factors that may explain this relationship. According to Pandey (2004), large companies have higher capacity to pay off their loans, have higher collateral values, and are more diversified than smaller firms. The diversification involves a lower risk of default or bankruptcy (Shumway, 2001). Then, large companies are mostly listed and have higher degree of hard and

quantifiable information (Fama & Jensen, 1983; Rajan & Zingales, 1995; Udell, 2008). On the contrary, from the banking point of view, smaller firms are opaque about the disclosure, and characterized by soft information that is difficult to be quantified.

Regarding the Hypothesis 5, it is supported. Corporate performance is significantly and negatively associated with the debt level of a company. About the performance, this study lends some support to the findings of those works that found a negative relationship between profitability and leverage ratio (Coleman, 2007; Negash, 2015; Myers, 2001), disassociating itself from those studies that stated a positive relationship (Berger & Udell, 1995; Binks & Ennew, 1996; Coleman & Cohn, 1999; Robb *et al.*, 2009; Ruland & Zhou, 2005). This result means that profitable firms tend to self-finance with retained earnings as opposed to asking bank loans. This is consistent with the Myers' theory (1984).

In regard to Hypothesis 6, it is supported. Despite the study conducted by Coleman and Cohn (1999) the gender governance is correlated with the corporate debt level. Thus, women-led firms are less likely to assume bank loans than male counterparts. Many factors may be linked to this ratio, but the debate is still controversial. Indeed, the greater difficulties that women experience in accessing credit, compared to men, may be caused by a taste-based discrimination (e.g. bias towards women), structural features of female firms that make them less attractive for the banking system, or even the risk and debt aversion typical in women. Therefore, our empirical results are consistent with an important stream of gender studies (e.g. Bellucci *et al.*, 2010; Calcagnini & Lenti, 2008; Cesaroni, 2010; Coleman & Robb, 2009) that found evidence that women-led firms are less likely to assume corporate debt. In particular, additional analysis of differences in riskiness between male- and women- led companies would be desirable but remains an interesting matter for future research.

In summary, we are left with the following results: the age, size, organizational form, and profitability are correlated with the financial leverage; therefore, the corporate debt level is not correlated with the gender ownership, but the reason is not investigated in this research.

However, a limitation of this research is that the dataset covers a single year. An opportunity for further research would be to improve the extant literature regarding the use of financial leverage in the businesses using a larger dataset, that may cover a long-term time horizon.

References

- [1] Accornero, M., Russo, P. F., Guazzarotti, G., & Nigro, V. (2018). "Missing investors in the Italian corporate bond market", (Banca D'Italia Working Paper 450). [Online] Retrieved from <https://www.bancaditalia.it/pubblicazioni/qef/20180450/index.html?com.dotmarketing.htmlpage.language=1>.
- [2] Alesina, A., & Giuliano, P. (2010). "The power of the family", *Journal of Economic Growth*, 15(2): 93-125.
- [3] Al-Hares, O. M., & Saleem, K. (2017). "Islamic banks financial performance and implications of Basel III standards in the GCC: An empirical analysis" *Review of Economics & Finance*, 7(1): 80-97.
- [4] Angelini, P., Di Salvo, R., & Ferri, G. (1998). "Availability and cost of credit for small businesses: Customer relationships and credit cooperatives", *Journal of Banking & Finance*, 22(6-8): 925-954 .

- [5] Angeloni, I., Buttiglione, L., Ferri, G., & Gaiotti, E. (1995). "The credit channel of monetary policy across heterogeneous banks: The case of Italy", *Temi di discussione del servizio studi-Banca d' Italia*.
- [6] Antoniou, A., Guney, Y., & Paudyal, K. (2008). "The determinants of capital structure: Capital market-oriented versus bank-oriented institutions", *Journal of Financial And Quantitative Analysis*, 43(1): 59-92.
- [7] Arzu, D., & Mantovani, G. M. (2016). "The gender contribution to the corporate governance and the corporate performance", [Online] Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2885413 .
- [8] Beck, T., & Demirgüç-Kunt, A. (2006). "Small and medium-size enterprises: Access to finance as a growth constraint", *Journal of Banking & Finance*, 30(11): 2931-2943.
- [9] Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2008). "Financing patterns around the world: Are small firms different? ", *Journal of Financial Economics*, 89(3): 467-487.
- [10] Becker, G. (1957). *The Economics of Discrimination* (2nd Ed.). Chicago, IL: University of Chicago Press.
- [11] Bellucci A., Borisov A., & Zazzaro, A. (2010). "Does gender matter in bank firm relationships?", *Journal of Banking and Finance*, 34(12): 2968-2984.
- [12] Berger, A. N., & Udell, G. (2011). "Bank size, lending technologies, and small business finance", *Journal of Banking & Finance*, 35(3): 724-735.
- [13] Berger, A., & Udell, G. (1995). "Lines of credit and relationship lending in small firm finance", *The Journal of Business*, 68(3): 351-381.
- [14] Binks, M. R., & Ennew, C. T. (1996). "Growing firms and the credit constraint", *Small Business Economics*, 8(1): 17-25.
- [15] Blanchflower, D. G., Levine, P. B., & Zimmerman, D. J. (2003). "Discrimination in the small-business credit market", *Review of Economics and Statistics*, 85(4): 930-943.
- [16] Bradley, M., Jarrell, G. A., & Kim, E. H. (1984). "On the existence of an optimal capital structure: Theory and evidence", *The Journal of Finance*, 39(3): 857-878.
- [17] Calcagnini, G., & Lenti, E. (2007). "Discriminazione nell'accesso al credito per l'imprenditoria femminile", [Online] Available at https://www.academia.edu/19946201/Discriminazione_nellaccesso_al_credito_per_limprenditoria_femminile .
- [18] Carter, S. L., & Shaw, E. (2006). "Women's business ownership: Recent research and policy developments", [Online] Retrieved from <https://strathprints.strath.ac.uk/8962/> .
- [19] Cassar, G. (2004). "The financing of business start-ups", *Journal of Business Venturing*, 19(2): 261-283.
- [20] Cavalluzzo, K. S., Cavalluzzo, L. C., & Wolken, J. D. (2002). "Competition, small business financing, and discrimination: Evidence from a new survey", *The Journal of Business*, 75(4): 641-679.
- [21] Cesaroni, F. (2010). "Donne Imprenditrici e Banche", *Le Ragioni di un Rapporto Difficile*. G., Calcagnini, and I. Favaretto (Eds.). *L'Economia della Piccola Impresa*, 131-167. Franco Angeli: Milano.

- [22] Cole, R. A., & Mehran, H. (2009). "Gender and the availability of credit to privately held firms: evidence from the surveys of small business finances", Staff Reports No. 383, Federal Reserve Bank of New York.
- [23] Cole, R. A., & Wolken, J. D. (1995). "Financial services used by small businesses: Evidence from the 1993 National Survey of Small Business Finances", *Fed. Res. Bull.*, 81(7): 629-667.
- [24] Cole, R. A., Wolken, J. D., & Woodburn, R. L. (1996). "Bank and nonbank competition for small business credit: Evidence from the 1987 and 1993 National Surveys of Small Business Finances", *Federal Reserve Bulletin*, 82(11): 983-995.
- [25] Coleman, S. (2000). "Access to capital and terms of credit: A comparison of men and women", *Journal of Small Business Management*, 38(3): 37-52.
- [26] Coleman, S. (2002). "Constraints faced by women small business owners: Evidence from the data", *Journal of Developmental Entrepreneurship*, 7(2): 151-174.
- [27] Coleman, S. (2007). "The role of human and financial capital in the profitability and growth of women-owned small firms", *Journal of Small Business Management*, 45(3): 303-319.
- [28] Coleman, S., & Carsky, M. (1999). "Sources of capital for small family-owned businesses: Evidence from the national survey of small business finances", *Family Business Review*, 12(1): 73-85.
- [29] Coleman, S., & Cohn, R. (2000). "Small Firms' use of Financial Leverage: Evidence from the 1993 National Survey of Small Business Finances", *Journal of Business and Entrepreneurship*, 12(3): 87-103.
- [30] Coleman, S., & Cohn, R. (1999). "Small firm use of leverage: A comparison of men and women-owned firms", [Online] Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.195.2678&rep=rep1&type=pdf> .
- [31] Coleman, S., & Robb, A. (2009). "A comparison of new firm financing by gender: Evidence from the Kauffman firm survey data", *Small Business Economics*, 33(4): 397-411.
- [32] Cooley, T. F., & Quadrini, V. (2001). "Financial markets and firm dynamics", *American Economic Review*, 91(5): 1286-1310.
- [33] Croson, R., & Gneezy, U. (2009). "Gender differences in preferences", *Journal of Economic Literature*, 47(2): 448-474.
- [34] Cuong, N. T., & Thi, C. N. (2012). "The effect of capital structure on firm value for Vietnam's seafood processing enterprises", *International Research Journal of Finance and Economics*, 12 (89): 221-233.
- [35] Demirgüç-Kunt, A., & Huizinga, H. (2000). "Financial structure and bank profitability", *World Bank Policy Research Working Paper 2430*. [Online] Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=632501 .
- [36] Fama, E. F., & Jensen, M. C. (1983). "Agency problems and residual claims", *The Journal of Law and Economics*, 26(2): 327-349.
- [37] Faulkender, M. W., Thakor, A. V., & Milbourn, T. T. (2006). "Does corporate performance determine capital structure and dividend policy? ", [Online] Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=686865 .

- [38] Forestieri, G. (2014). "I nuovi canali di finanziamento delle imprese. Minibond, cartolarizzazioni, capitale di rischio", *Università Bocconi, Milano*.
- [39] Gill, A., Biger, N., Pai, C., & Bhutani, S. (2009). "The determinants of capital structure in the service industry: evidence from United States", *The Open Business Journal*, 2(1): 48-53.
- [40] Gill, A., Biger, N., Mathur, N. (2011). "The effect of capital structure on profitability: Evidence from the United States", *International Journal of Management*, 28(4): 3-15.
- [41] Guiso, L., Sapienza, P., & Zingales, L. (2013). "The determinants of attitudes toward strategic default on mortgages", *The Journal of Finance*, 68(4): 1473-1515.
- [42] Hair, J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, New Jersey: Pearson Education International.
- [43] Huang, G., & Song, F. M. (2005). "The financial and operating performance of China's newly listed H-firms", *Pacific-Basin Finance Journal*, 13(1): 53-80.
- [44] Hyytinen, A., & Pajarinen, M. (2005). "External finance, firm growth and the benefits of information disclosure: Evidence from Finland", *European Journal of Law and Economics*, 19(1): 69-93.
- [45] Jensen, M. C. (1986). "Agency costs of free cash flow, corporate finance, and takeovers", *The American Economic Review*, 76(2): 323-329.
- [46] Kammoun, A. & Triki, I. (2016). "Credit scoring models for a Tunisian microfinance institution: comparison between artificial neural network and logistic regression", *Review of Economics & Finance*, 6(1): 61-78.
- [47] Lozzi, M., & Mistrulli, P. E. (2014). "Loan applications and social capital in the great recession", (Bank of Italy Conference Paper 17).
- [48] Magnanelli, B. S., Raoli, E., & Sacchi, A. (2016). "Key Factors for Success of Social Enterprises in Italy: Analysis of Financial and Operating Performance", *Review of Economics & Finance*, 6(1): 43-60.
- [49] Marlow, S., & Patton, D. (2005). "All credit to men? Entrepreneurship, finance, and gender", *Entrepreneurship Theory and Practice*, 29(6): 717-735.
- [50] Modigliani, F., & Miller, M. H. (1963). "Corporate income taxes and the cost of capital: a correction", *The American Economic Review*, 53 (3): 433-443.
- [51] Moro, A., Wisniewski, T. P., & Mantovani, G. M. (2017). "Does a manager's gender matter when accessing credit? Evidence from European data", *Journal of Banking & Finance*, 80(C): 119-134.
- [52] Myers, S. C. (1984). "The capital structure puzzle", *Journal of Finance*, 39 (3): 575-592. DOI: <https://doi.org/10.1111/j.1540-6261.1984.tb03646.x> .
- [53] Myers, S. C. (2001). "Capital structure", *Journal of Economic Perspectives*, 15(2): 81-102.
- [54] Negash, M. (2015). "Debt, tax shield and bankruptcy costs: Some evidence from JSE", *Investment Analysts Journal*, 30(54): 33-44.
- [55] Orser, B. J., Hogarth-Scott, S., & Riding, A. L. (2000). "Performance, firm size, and management problem-solving", *Journal of Small Business Management*, 38(4): 42-58.

- [56] Osteryoung, J. S., Newman, D. L., & Davies, L. G. (1997). *Small Firm Finance: An Entrepreneurial Perspective*. Boston, MA: Cengage Learning.
- [57] Pandey, I. M. (2004). "Capital structure, profitability and market structure: Evidence from Malaysia", *Asia Pacific Journal of Economics and Business*, 8(2): 78-91 & 97-98.
- [58] Petersen, M. A., & Rajan, R. G. (1994). "The benefits of lending relationships: Evidence from small business data", *The Journal of Finance*, 49(1): 3-37.
- [59] Rajan, R. G., & Zingales, L. (1995). "What do we know about capital structure? Some evidence from international data", *The Journal of Finance*, 50(5): 1421-1460.
- [60] Riding, A. L., & Swift, C. S. (1990). "Women business owners and terms of credit: Some empirical findings of the Canadian experience", *Journal of Business Venturing*, 5(5): 327-340.
- [61] Robb, A. M., Fairlie, R. W., & Robinson, D. T. (2009). "Financial capital injections among new black and white business ventures: evidence from the Kauffman Firm Survey", *Unpublished paper, University of California, Santa Cruz and Duke University*.
- [62] Ruland, W., & Zhou, P. (2005). "Debt, diversification, and valuation", *Review of Quantitative Finance and Accounting*, 25(3): 277-291.
- [63] Schiantarelli, F., & Sembenelli, A. (1999). "The maturity structure of debt: Determinants and effects on firms' performance? Evidence from the United Kingdom and Italy", (World Bank Policy Research Working Paper 1699). [Online] Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=620623 .
- [64] Schwartz, E., & Van Tassel, R. C. (1950). "Some suggested changes in the corporate tax structure", *The Journal of Finance*, 5(4): 410-420.
- [65] Sharma, A. K. (2006). "Financial leverage and firms' value: A study of capital structure of selected manufacturing sector firms in India", *The Business Review*, 6(2): 70-76.
- [66] Shaw, E., Marlow, S., Lam, W., & Carter, S. (2009). "Gender and entrepreneurial capital: implications for firm performance", *International Journal of Gender and Entrepreneurship*, 1(1): 25-41.
- [67] Shubita, M. F., & Maroof -Alsawalhah, J. M. (2012). "The relationship between capital structure and profitability", *International Journal of Business and Social Science*, 3(16): 104-112.
- [68] Shumway, T. (2001). "Forecasting bankruptcy more accurately: A simple hazard model", *The Journal of Business*, 74(1): 101-124.
- [69] Stinchcombe, A. L. (1965). "Social structure and organizations", In: J. A. C. Baum & F. Dobbin (Eds.), *The Handbook of Organizations*, pp. 229-259. Chicago: Rand McNally & Co.
- [70] Tarantola, R., & Magliocco, A. (2007). La presenza delle donne italiane nei senior management. *Bancaria*, 4.
- [71] Treichel, M. Z., & Scott, J. A. (2006). "Women-owned businesses and access to bank credit: Evidence from three surveys since 1987", *Venture Capital*, 8(1): 51-67.
- [72] Udell, G. F. (2008). "What's in a relationship? The case of commercial lending", *Business Horizons*, 51(2): 93-103.