

# **The impact of the financial structure on business growth and profitability**

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## **Introduction**

The AUB Observatory, promoted by AIDAF (Italian Association of Family Businesses), by the AIDAF-EY Chair in Family Business Strategy (Bocconi University), by the UniCredit and Cordusio group, with the support of the Italian Stock Exchange, the Angelini Foundation and the Chamber of Commerce of Milan, Lodi and Monza Brianza monitors all Italian companies that exceed the turnover threshold of 20 million euros<sup>1</sup>.

As part of the Observatory, with the contribution of FSI, this research was promoted with the aim of understanding whether the financial structure has an impact on the medium-long term performance (in terms of growth and profitability) achieved by Italian companies.

## **The research question**

The financial structure of companies has long represented one of the central themes in the debate on the entrepreneurship of our country and beyond. Put simply, companies can finance their activities using risk capital (equity) or by resorting to debt capital. What factors determine the choice of funding sources? What are the consequences of the financial structure on the profitability of companies and their ability to grow?

A broad line of research developed around these questions, starting from the work of Modigliani and Miller (1958). Starting from a series of hypotheses (including a perfect capital market, the absence of taxation on profits, the absence of transaction, agency and liquidation costs in case of bankruptcy) the authors demonstrate that the total value of the company, as well as the average cost of capital, do not depend on the composition of the financing sources. This contribution laid the foundations for subsequent studies that loosen the assumptions of Modigliani and Miller and modify their theoretical framework. The “tradeoff theory” (Myers 1984) starts from the assumption that in many tax systems, interest expense on debt is deductible, at least in part. This implies that using debt over equity improves net profitability and therefore increases the overall value of the company. However, this advantage comes up against the fact that high debt increases the risk of default. Consequently, the advantage in the use of debt decreases with the level of the debt itself: the optimal debt level is that value for which the marginal

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<sup>1</sup> The Observatory uses AIDA (Computerized Analysis of Italian Companies) as its primary source, then proceeding to eliminate duplications in the data to consider groups of companies, eliminating the subsidiaries in the case of mono-business groups and the parent companies (often financial holding companies) in the case of multi-business groups.

benefit linked to the deductibility of interest is equal to the marginal cost induced by the greater risk of default. The “pecking order” theory (Myers and Majluf 1984) has instead highlighted a sequentiality in the use of funding sources based on their exposure to information asymmetry problems. This model suggests that investments should be financed using first internal resources of the company, then debt and finally new equity. Finally, an important contribution comes from the agency theory (Jensen 1986) which suggests how debt can create an automatic mechanism for the use of cash flows useful for preventing or solving problems of “empire building” or “overinvestment” through which managers of mature companies can extract private benefits (often a function of the company size) at the expense of creating shareholder value. A different theoretical perspective on the relationship between debt and investment is contained in Myers’ (1977) “debt overhang” theory. In this work, the author suggests that high levels of debt can discourage future investments. This happens because in companies with high levels of debt, part of the increase in value created by new investments will mainly benefit existing creditors rather than new shareholders. Therefore, the incentives of shareholders to pursue new projects will decrease and the company will suffer from a poor investment capacity.

Considering the main theories on the financial structure cited in the literature, this paper aims to verify whether and to what extent a greater use of debt capital instead of equity can to some extent limit investment projects, coming to constitute a brake on the development projects of Italian companies. To this end, a twofold study was carried out, investigating the relationship between financing structure and growth and profitability: 1) on all the companies of the AUB Observatory; 2) on companies that have been target of a private equity fund.

## **The results of empirical research**

### *The impact of the financial structure on the performance of AUB companies*

The first research on the relationship between the debt level of a company and corporate performance concerned the entire population of Italian companies with turnover above € 20 million, equal to 16,845 units at the beginning of 2018. To investigate this relationship, two regression models were adopted.

A first model tested the relationship between the starting level of corporate debt and the performance - in terms of growth and profitability - of the following five years<sup>2</sup>. Two indicators were used to measure

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<sup>2</sup>The adopted regression model was a cross-sectional with standard errors corrected to avoid heteroskedasticity problems. The model included as control variables (in the starting year): i) the age of the company; ii) the size of the company (in terms of total assets); iii) profitability (ROA); iv) the geographical location (region); v) the business sector (ATECO 2007 code).

the starting level of debt: the Net Financial Position (NFP)<sup>3</sup> / EBITDA<sup>4</sup> and NFP / EQUITY<sup>5</sup> ratio, both calculated with reference to 2014. The effect was tested on the 2014-2018 five-year average of the following performance metrics: i) the growth rate of sales revenues; ii) the growth rate of total fixed assets; iii) the growth rate of net assets; iv) operating profitability (ROI); v) the EBITDA margin.

The results of the analysis for all the population of Italian companies highlight **a negative and statistically significant relationship between the starting level of debt and the performance of the following 5 years measured through all the indicators considered**. This result was further validated through two further analyzes:

1. comparing companies with a starting level of debt above and below the median;
2. comparing companies with a high (values included in the first quartile) and low (values included in the fourth quartile) starting level of debt.

In both cases, **the companies with a higher level of debt** (with values above the median and included in the first quartile of the NFP / EBITDA and NFP / EQUITY indicators) **are those that show a stronger negative correlation with the performance measures of the five subsequent years**.

The choice of the year 2014 to measure the initial level of debt derives from the need to identify a time horizon not influenced by the economic-financial crisis that began in 2009. Considering the Italian macro-economic scenario, the 2014-2018 period was selected since the GDP growth rate has always been positive in this period (source: ISTAT). The same analyses were replicated using different time horizons, namely: i) the 2010-2018 period, measuring the initial debt level in 2010, and calculating the averages of the performance indicators in the 2010-2018 period; ii) the 2006-2018 period, measuring the initial debt level in 2006, and calculating the averages of the performance indicators in the 2006-2018 period. These further analyzes also confirmed that **companies with higher debt ratios exhibit lower performance levels in subsequent years - both in terms of growth and profitability - than companies with lower debt**.

A second model tested the effect of a greater / lower use of financial leverage in companies with a low starting level of debt (lower than the median in 2014, considered as the starting year) on the same growth and profitability indicators<sup>6</sup>. Considering the period 2014-2018, the results indicate that **even for companies with a low starting level of debt, an increase in the level of indebtedness has a**

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<sup>3</sup> NFP: debt to banks + debt to other lenders - Cash and cash equivalents (Source: Aida).

<sup>4</sup> Only companies with positive EBITDA were considered.

<sup>5</sup> Only companies with positive equity were considered.

<sup>6</sup> In this case, a panel regression analysis was carried out with fixed effects and standard errors clustered per company, which made it possible to estimate the changes that have occurred over time, excluding the impact of potential exogenous factors (such as sector dynamics, localization geographic, etc.). The regression model included as control variables: i) the age of the company; ii) the size of the company (in terms of total assets); iii) operating profitability (ROA); iv) macro-economic trends (year dummies).

**negative impact on company performance.** The results are also confirmed by extending the analyses to the period 2010-2018 (9 years) and 2006-2018 (13 years).

Further analysis of companies with a higher starting debt level (above the median) also indicates that an increase in debt is associated with a more pronounced negative effect on performance. It is therefore possible to conclude that **the higher the starting level of debt, the higher the negative impact on the growth and profitability due to an increase in the level of debt.**

#### *The impact of the financial structure on the firm performance selected for investment by a private equity fund*

The second part of the research conducted analyzed the link between the financial structure and the performance of the target companies selected by the private equity operators. The choice of this context is appropriate since, in line with their corporate mission, the primary objective of private equity funds is to maximize the corporate value at the time of sale, and this could take place through deals that minimize the initial risk capital injection. It is therefore relevant, in this context more than in others, to identify the impact of the financial structure (e.g. the use of financial leverage by private equity funds) on the performance of target companies.

To this end, the target companies of private equity funds in the 2007-2018 period were selected with two pre-deal requirements: family control<sup>7</sup> and a turnover of more than 20 million euros. 379 private equity deals were thus identified, involving a total of 328 companies (including “add-on” transactions), of which 185 majority deals and 194 minority deals<sup>8</sup>.

For each deal, a series of indicators were collected starting from the 3 pre-deal years (i.e.: 2004-2005-2006 for the deals that took place in 2007) and for the 3 years following the exit of the private equity fund (i.e.: 2016-2017-2018 in cases of exits occurred in 2015). The main elements of the income statement, balance sheet and balance sheet ratios were collected for each company involved in the deal<sup>9</sup>.

The Net Financial Position (NFP)<sup>10</sup> / EBITDA<sup>11</sup> ratio was used to measure the level of debt of the target company. The effect was tested on one of the main growth measures, namely the growth rate of total fixed assets in the period 2004-2018. This indicator is a proxy that more than others can represent the structural growth rate of a company, and the start of a growth path is probably the main reason that pushes a company to open capital to a specialized operator<sup>12</sup>.

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<sup>7</sup> Companies in which one or two families hold more than 50% of the capital were considered family controlled.

<sup>8</sup> Source: Zephyr and Merger Market for the starting extraction, Private Equity Monitor (PEM) reports and print sources for checks and refinements.

<sup>9</sup> Source: Aida

<sup>10</sup> NFP: debt to banks + debt to other lenders - Cash and cash equivalents (Source: Aida).

<sup>11</sup> Only companies with positive EBITDA were considered.

<sup>12</sup> Also in this case a panel regression analysis was carried out with fixed effects and clustered standard errors per company. To reduce endogeneity problems, a time lag of 1 year was inserted between the level of debt and the growth rate of fixed assets. The regression model included as control variables: i) the age of the company; ii) the size of the company (in terms of total assets); iii) operating profitability (ROA); iv) macro-economic trends (year dummies).

To test the impact of the financial structure on the growth rate of the company's fixed assets, a moderation analysis was carried out which allows to estimate the effect of the financial structure attributable to the change of ownership in the target company on the growth rate of fixed assets<sup>13</sup>. The results emerging from the analysis model show that:

- the entry of a private equity fund has a positive impact on the growth rate of fixed assets;
- as the level of debt of the target company increases, the positive impact of private equity funds on the growth of fixed assets is reduced.

The combined reading of these results allows us to state that **the lower the initial debt level of the target company, the higher the impact on the growth of fixed assets on the target company.**

### Final remarks

The results of this study indicate that in all Italian companies, regardless of the size or type of ownership structure, an increase in the level of debt leads to lower performance in terms of:

- size growth (sales revenues, net assets and fixed assets)
- profitability: ROI and EBITDA margin

Moreover, the higher the starting level of debt, the stronger this effect. It is therefore useful to question the consistency of these results with the existing literature. One of the first empirical studies on this issue is the work of Lang et al. (1996), based on a sample of American listed companies between 1970 and 1989. Regression analyses indicate a generally negative association between debt and growth measures (captured by Capex or employee growth). Cai and Zhang (2011) provide further evidence to support the negative association between the level of debt and future investments, and also highlight how the level of debt is negatively associated with the company's stock market value.

More recent studies have re-examined these relationships using samples from European companies, using time frames that include the recent financial crisis. Kalemli-Ozcan et al. (2020), for example, demonstrate the presence of a strong negative effect of debt on investments immediately after the crisis, and a slightly smaller but still negative and significant effect up to four years after the shock. Popov et al. (2018) confirms the existence of the negative association between debt and investment - although the relationship tends to decline for companies with high growth potential. Finally, Giroud and Mueller (2016) show that high levels of pre-crisis debt implied a lower capacity for growth (in

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<sup>13</sup> The Difference-in-Difference (DiD) approach was followed, an econometric analysis technique that calculates the effect of a treatment (i.e., an explanatory variable or an independent variable) on a result (i.e., a response variable or a dependent variable). For the moderation analysis, a variable was constructed that assumes a value of "0" in the pre-deal years, and a value of "1" during the years of the holding period of the private equity fund.

terms of number of employees) during the crisis period from 2007 to 2009. It is therefore possible to state that the results that emerge from this study are consistent with other empirical evidence that analyzed the impact of the financial structure on corporate performance.

### **Managerial implications**

The results of the research suggest important considerations on the relevance of the financial structure on the growth opportunities of Italian companies, and on the support that private equity funds can give to the development of our country's industrial system.

The first consideration emerges from the combined reading of the results with the challenge of “dimensional growth” that many companies will have to face in order to remain competitive internationally in the coming years. It is necessary to develop an “equity culture”. If the use of the banking channel has traditionally characterized the Italian business system for decades, in the next few years all the companies that will face the challenge of dimensional growth will have to evaluate whether to make investments by resorting to risk or debt capital. An “equity culture” is linked to choices to open capital, to choices for the dividend payout, to choices of corporate governance and management structures. The results show that companies with a stronger financial structure are those able to achieve higher profitable growth in the medium to long term.

The second consideration that emerges from the research concerns companies that have probably already “married” an equity culture, opening capital to third parties. The results show that the boost to growth that a professional investor can bring is amplified when the entry of a private equity fund takes place by providing risk capital and minimizing the use of financial leverage.

Therefore, the study confirms the importance and the fundamental role that private equity funds have in supporting the growth process of Italian companies, especially if the investment in the target company takes place with risk capital. In light of these results, and in the particular situation of economic uncertainty that the entire country will face in the coming years due to the outbreak of the Covid-19 pandemic, it is reasonable to believe that private equity funds will increasingly play a complementary role to the traditional banking channel. Where the funds will make choices more oriented to the use of risk capital in the target companies, their impact on the growth and profitability of target companies will be even more positive.

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