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Capital Structure and Firm Performance

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Abstract: *The present paper aims to examine the evolution of debates on capital structure and firm performance in order to assess the direction and intensity of research in the field. For these purposes, we employed a three-pronged approach: conceptual, theoretical and empirical. Pointing out the conceptual aspects was seen as necessary step, given that both financial structure and performance present multi-dimensional meanings, which have triggered controversial debates in the sphere of finance. The theoretical approach enabled us to review the key theories proposed with respect to capital structure and firm performance, as such an approach constitutes the foundation of empirical debates. As a natural consequence, we considered that our study would have been sterile without a presentation of the results of empirical research. Disjunctions at the level of empirical research posed a challenge causing debates to take on new dimensions. In accepting the assertion that there is no universal theory of capital structure and no reason to expect the emergence of any such theory, we emphasise that a consensus of empirical findings cannot even be alleged to exist.*
The final conclusion drawn is that specialist literature has been enriched with wide-ranging theoretical and empirical debates that led to the development of analytical diagrams serving as references, essential for assessing the relation between capital structure and firm performance.
Keywords: *capital structure, financial theories, financial performance*

Introduction

Going beyond the boundaries of the theory of irrelevance, it was acknowledged that there is a link between the firm's capital structure and its value; subsequently, the literature in the field became less interested in the manner in which capital structure exerts influence over the firm's value, shifting its focus to the way in which changes in capital structure affect the governance structure and the global (including the financial) performance of the firm.

The main objective of this study is to examine the evolution of debates surrounding the issues of firms' capital structure and financial performance ad to highlight progress achieved in the area of scientific research. The operational objectives were as follows: a) to delineate certain conceptual aspects; b) to emphasise the theoretical foundations of capital structure and firm performance; c) to present the dimensions of empirical research and highlight the results of research. Comparative analysis served as the method used in preparing the present article. The element of originality that we undertook was to deliver a descriptive and critical synopsis that should capture the conceptual, theoretical and empirical dimension of the firm's capital structure and financial performance. Given that research in the field has expanded significantly over the years, we do not claim that our study is all-encompassing; rather, for the purposes of our undertaking, we have focused on a selection of the most representative research.

1. Conceptual Clarifications

1.1. Capital Structure

The earliest financial structure analyses were performed towards the end of the 19th century, with the establishment, among commercial bankers and commercial loan specialists, of the idea of comparing loan recipients based on the ratio of the size of their own resources and the borrowed resources [28]. During that period it was also came to be accepted that the average satisfactory ratio of own resources to borrowed resources must be at least 2. This was the first ratio to be used in the analysis of financial statements. Chronologically, the second widely established ratio was the ratio of total liabilities to the net book value of equity which was supposed to tend to 1/1 (i.e. own capital should be predominantly used and to a lesser extent borrowed funds). This second ratio shed light on the link between the size

of resources secured from various lenders at the firm's risk and the amounts constantly invested in the company by its shareholders.

In financial terms, the notion of structure features variously in theories in the field as *financing structure, capital structure, financial structure*. The issue is whether there is total equivalence between the above-mentioned notions (that is, whether they all define the same problem) or whether, on the contrary, there is a clear-cut distinction. In order to solve this problem, we consider it useful to provide the opinions of several specialists.

At a broader level, some authors argue that:

- financial structure is given by the structure of the total liabilities on the firm's balance sheet [6];
- the firm's financial structure is defined as the ratio of short-term and long-term financing [45];
- the firm's financial structure may be defined by the relationship: 1 + (debt/equity) [12]; in this case, the maturity of debt to be considered is not even specified;
- recording liabilities in the balance sheet is performed by reflecting not only their nature (operational debt, financial debt or other kinds of debt) but also debt maturity [16];
- the firm's financial structure is defined as the composition of secured capital, both according to the sources and the duration of use of such capital [17].

According to the first three theories, we are predetermined to estimate that the choice of capital structure involves the ascertainment, based on maturity, of the weight of each financing source in the total balance sheet liabilities of the firm; in this case, one cannot make a distinction between the three concepts mentioned above (financial structure overlaps the notion of financing structure). The last two opinions argue that the principle of financial balance – predicated on ensuring that the duration of use and the duration of funding resources match – is considered as the objective and content of the financing structure.

We adhere to the view that *whereas in terms of financial analysis one can speak of a financing structure, in terms of medium and long-term financing decision-making, one can only tackle the idea of a strategic structure of financing, one based therefore on permanent capital* [10].

We argue that the differentiation element lies in the *maturity of funds*; whereas the financing structure incorporates the totality of elements (irrespective of their nature and the time period for which they are secured by the company), financial structure is defined only on the basis of financial funds that may be used over the medium and long term. The relation established between the financial structure and the financing structure is a part-whole relation.

1.2. Firm Performance

The notion of *performance* is a controversial issue in finance largely because of its multidimensional meanings [37]. Performance can be explored from two points of view: financial and organisational (the two being interconnected); a company's performance can be measured based on variables that involve productivity, returns, growth or even customer satisfaction. Financial performance (reflected in profit maximisation, maximising return on assets and maximising shareholder return) is based on the firm's efficiency [7]. According to other authors [2], the assessment of financial performance is based on the return on investment, residual income, earnings per share, dividend yield, price/earnings ratio, growth in sales, market capitalisation, etc.

The measurement of performance is dependent upon the information introduced in the measurement system and the instruments employed. The classical indicators used in financial analysis to measure performance have been the return on investment, leverage, capital efficiency, liquidity, cash flow, inventory turnover, receivables turnover ratio. In addition to these factors, the so-called modern value creation indicators also [46]:

- *accounting indicators*: net profit or earnings per share; operating profit or EBIDTA; Return On Assets (ROA) and Return On Equity (ROE);
- *hybrid indicators (accounting and financial)*: economic value added (EVA); Cash Flow Return on Investment (CFROI);
- *financial indicators*: Net Present Value (NPV);
- *market indicators*: Market Value Added; Total Shareholder Return.

The choice of alternatives of ascertaining performance may be influenced by the firm's objective. In our case, performance that enables an increase in market value is relevant; the most widely used instruments to measure performance are return on assets and return on equity [11; 19; 29].

The assessment of firm performance using financial indicators must be complemented by an assessment based on non-financial indicators that express the quality of management, corporate culture, the effectiveness of executive compensation policies, the quality of shareholder communication system, etc. Presently, there is a trend towards assessing performance based on value creation, subsumed under the goal of sustainable development.

2. The Theoretical Dimensions of Specific Research

The adequacy of the capital structure represents a major decision for any firm; this is because the decision is founded not only on the need to maximise shareholder returns, but also on the need to ensure the firm's capacity to cope with its competitive environment. The views on the optimal financial structure have varied over time.

Initially (1958), F. Modigliani and M. Miller [30] posited that firm value is independent of its financial structure; subsequently (1963), taking into account the corporate tax, they underscored the effects of benefits of the tax shield of debt; recognising that leverage can reduce the payment obligations related to corporate tax, the two scholars acknowledged that capital structure is optimal at 100% debt financing (as it minimises the weighted average cost of capital and maximises firm performance and value) [31]. The validity of these claims is verified only in the context of pre-established assumptions which characterise an ideal situation. Beyond this shortcoming, the ideas they formulated marked the starting point in laying the foundations of modern finance.

In the 1960s-1970s, research shifted towards studying the way in which firms manage to balance the bankruptcy costs with the benefits of tax shields, derived from taking on debt [25; 42; 24]; these works were grouped under the generic headline of "static trade-off theory", whose underlying claim is that firms set a target debt ratio which they attempt to reach. According to the theory, there is a positive relationship between the firm's leverage and performance.

In the mid-1970s, research turned to agency costs, focusing on two categories of conflicts of interest between managers and shareholders, on the one hand, and between creditors and shareholders, on the other [21; 32]. The research was predicated on the assumption that optimal capital structure represents a compromise between the effects of interest tax shield, financial distress costs and agency costs. "Agency cost theory" posits that leverage disciplines managers, as the debt level may be used to monitor managers [4]. Thus, it is to be expected that increased leverage in the context of low agency costs may raise the level of efficiency and thereby contribute to upgrading firm performance [1].

In the first half of the 1980s, the emphasis was mainly placed on information asymmetries among investors and firms, which defined the pecking order theory [33; 35]. The theory argues that there is a hierarchy in the firm's preference for financing its investments, and that compliance with the hierarchy represents the optimal financing strategy. Since issuing new shares would be damaging to current shareholders, managers will prefer to finance investments from internal sources (i.e. retained earnings); if this source proves insufficient, managers will then orient to external sources (first to debt financing and lastly to the issuance of new shares). Thus, according to pecking order theory, more profitable firms generate higher earnings that can serve for self-financing, enabling them to opt less for debt financing; conversely, less profitable firms do not enjoy the same opportunity, being compelled to take on debt in order to finance their ongoing activity. Consequently, the theory asserts a negative correlation between the debt level and firm performance.

In the latter half of the 1980s, financial theories explain the structure of firms' financing in relation to the factors linked to industrial strategy and corporate organisation [5; 44; 26; 18]. The approach is premised on the influence of debt on the strategic variables (price and quantity) and on the relationship between suppliers and consumers. Compared with the objective of maximising profit posited in

specialist literature concerning industrial organisation, these theories recognise that the firm's objective is to maximise shareholders' wealth.

Studies carried out during the 1990s were marked by the focus on the disjunctive-hypothetical reasoning, researchers seeking to provide arguments in favour of or against the two theories proposed, i.e. trade-off theory and pecking order theory, respectively. The idea proposed 10 years ago, arguing that "there is no universal theory of the debt-equity choice, and no reason to expect one" [34], reoriented research to the level of empirical analyses.

3. The Empirical Dimensions of Specific Research

For most of the empiric research, the starting point is to identify the theoretical foundation that underlie the debate; the immediate step is to list the determinants of performance, about which certain assumptions are made; to demonstrate the validity or nullity of previously stated assumptions, the studies are complemented by empirical research, which involve building databases, implementing econometric models and conducting stress tests.

Empirical research on capital structure and firm performance rely either on market data, on accounting data or on combined data (market and accounting). Regarding these differences, M.J. Barclay, C.W. jr. Smith and E. Morellec [3] argue that book leverage would be the most appropriate as it reflects assets in place, not influenced by market variations. Along the same lines, L. Shyam-Sunder and S.C. Myers [43] maintain that market value may distort prospective investment decisions. Moreover, J.R. Graham and C.R. Harvey [20] suggest that managers do not redefine the structure of capital to reflect changes in equity to market value.

On the other hand, other authors have formulated arguments against using book values, invoking certain rigidities of accounting standards or the size of firms [47]. Furthermore, E.K. Kayo and H. Kimura [22], by using market values to analyse leverage as a dependent variable, estimate that the use of market value provides a safer perspective on the future debt-carrying potential.

The decision on which values to use must take into account the leverage-performance relationship (which generally requires the use of market data). As market data on leverage are difficult to obtain, most often accounting data are used as proxy. R. G. Rajan and L. Zingales [38] analyse at length the role of the use of the various leverage data (arguing that accounting data, due to their content, fulfil primarily an information role).

Researchers use (predominantly linear) statistical models to analyse the importance of the various factors affecting the performance (the General Least Squares – GLS method being used particularly often). The model employed to determine the impact of the various variables on performance can be rendered, in the standard form, as follows: $y_{it} = \alpha_i + \beta X'_{it} + \varepsilon_{it}$, where: y_{it} – dependent variable (performance); α_i – individual benchmark for each year; X'_{it} – k-dimensional vector of explanatory variables, ε_{it} –error term.

In addition to the use of simple or multiple linear regression models, we must also point out the use, more rarely, of other models (non-linear). For example, certain authors [8] have shown that firm performance is a quadratic regression of the debt ratio ($P = \alpha + \beta*Debt + \gamma*Debt^2$, where P is performance interpreted in terms of firm value, $0 \leq \alpha \leq 100$, $\beta > 0$ $\gamma < 0$). Along the same lines, other authors [27] define the regression equation for the firm performance model as follows $EFF_i = a_o + a_1 LEV_i + a_2 LEV_i^2 + a_3 Z_{1i} + u_i$ (where *EFF* is the firm efficiency, *LEV* is the debt to total assets ratio; Z_1 is a vector of control variables; and u is a stochastic error term).

Empirical studies have analysed the correlation between capital structure and firm performance in various countries taking into account the specific influencing factors. Although the final purpose of research on this topic was the same (i.e. to identify an optimal debt level), the findings were contradictory:

- some studies have delivered empirical evidence in support of the positive correlation between capital structure and firm performance [40;15];

- other studies have found evidence in favour of negative correlation [23; 14; 44; 38; 13; 48; 39; 36];

- other studies have shown that below a certain range of leverage, firm's performance tends to be negatively related with the debt ratio [4];

- other studies have provided mixed evidence, as when to assess financial structure, debts are analysed in relation to maturities [37; 41];

- additional studies have offered mixed evidence, based on whether firms belong to different sectors or industries, providing them with different growth opportunities [27; 9; 41].

Conclusions

The present paper explores the link between capital structure and firm performance. In order to achieve the proposed objective, we employed a three-pronged approach: conceptual, theoretical and empirical. The findings of the conceptual approach can be summarised as follows:

a) the relation established between the financial structure and the financing structure is a part-whole type relation; the differentiation element is represented by the *maturity of funds*;

b) the choice of the alternatives to approaching performance (either organisational or financial) is dependent upon the objectives that are set; thus the assessment of firm performance using financial indicators must be complemented by an assessment based on non-financial indicators; currently, there is a tendency to assess performance based on value creation, yet subsumed to the goal of sustainable development.

The theoretical approach enabled us to review the main theories that have been formulated so far with respect capital structure and firm performance. The conclusion that emerges is that there is no consensus on the link between capital structure and firm performance (for instance, static trade-off theory admits a positive relation between the firm's debt level and its performance; agency cost theory recognises that higher leverage, in the context of lower agency costs, reduces inefficiency and thereby leads to enhanced company performance; pecking order theory estimates a negative correlation between the firm's debt level and its performance).

The analysis of the results of empirical research indicates that they were contradictory, as they delivered evidence both in favour of the positive correlation and in favour of the negative correlation between capital structure and firm performance. Moreover, a series of studies – that factor in debt maturity or affiliation with a certain branch/industry – have provided mixed evidence.

As a final point, we emphasise that specialist literature has been enriched with wide-ranging theoretical and empirical debates that set off the development of analytical diagrams serving as key references, essential for assessing the relationship between capital structure and firm performance. Disjunctions at the level of empirical research posed a challenge causing debates to take on new dimensions.

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