

DIMENSIONS OF THE RESEARCH ON CAPITAL STRUCTURE AND FIRM PERFORMANCE

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Abstract:

The present paper seeks to examine the evolution of research on capital structure and firms' performance. Dynamic analysis shows that the specialist literature has been enriched with theoretical and empirical wide-ranging debates; the existing body of research has provided analytical frameworks vital for grounding, understanding and implementing firms' capital structure policies identify and for quantifying the impact of financial structure on firm performance; however, the analysis reveals that previous research have certain limitations, which pose challenges for further investigations. Based on a summary of (descriptive and critical) principles, stages and phases, methods, techniques and instruments related to the research and knowledge of the impact of capital structure on firm performance, the study suggests that we are witnessing progress in scientific research and, consequently, in the implementation of increasingly elaborate methodologies.

Key words: *debt ratio, capital structure, performance, financial theory, research methodology.*

JEL classification: B 49, G 32

1. INTRODUCTION

In order to understand how firms secure financing for their operations, it is necessary to examine two aspects: the determining factors of capital structure and the effects of financing and risk management. As regards the first aspect (the factors according to which the financing mix is established), we must note that, in the early stages of research, the emphasis was placed on the firm-specific determinants; subsequently, the scope of research expanded to incorporate in the analysis the factors specific to the industries or countries that firms belong to. Studies analysing the role of firm, industry and country-specific variables in defining firms' financing policies suggest that all three factor categories exert an influence on corporate capital. Although it is generally acknowledged that firm-specific factors wield dominant influence on capital structure, there is disagreement regarding the factors that significantly impact a firm's capital structure (Ilyas, 2008).

As for the second aspect (the effects of financing and risk management), going beyond the irrelevance theory, it has been recognised that there is a link between capital structure and firm value; subsequently, specialist literature became less interested in how capital structure influences firm value, shifting its focus to the manner in which changes in capital structure affect the governance structure, as the latter conditions the firm's capacity to make strategic choices, thereby affecting the overall performance of the firm.

Viewing the two aspects in conjunction, it has been accepted that financing decisions have far-reaching implications on the profit and loss policy, as such decisions affect capital structure, corporate governance and the firm's development (Green et al., 2002). Moreover, by recognising that a firm's capital structure influences its performance (Harris & Raviv, 1991; Graham & Harvey, 2001), it was extrapolated and

suggested that capital structure could affect the firm's health (Pralalathan & Ranjani, 2011).

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 (Roden & Lewellen, 1995; Ghosh et al., 2000);

- other studies have found evidence in favour of negative correlation (Kester, 1986, Friend & Lang, 1988, Titman & Wessels, 1988, Rajan & Zingales 1995, Fama & French, 2002; Zeitun & Tian, 2007; Rao et al., 2007; Onaolapo & Kajola, 2010);

- other studies have shown that below a certain range of leverage, firm's performance tends to be negatively related with the debt ratio (Boodhoo, 2009);

- other studies have provided mixed evidence, as when to assess financial structure, debts are analysed in relation to maturities (Pralalathan & Ranjany, 2011; San & Heng, 2011);

- additional studies have offered mixed evidence, based on whether firms belong to different sectors or industries, providing them with different growth opportunities (Margaritis & Psillaki, 2010; Chowdhury & Chowdhury, 2010; San & Heng, 2011).

With the growing interest in identifying and quantifying the impact of capital structure on firm performance, one can also notice that developments in the area of scientific research have resorted to ever more elaborate methodologies.

The main objective of this study is to examine the evolution of debates on capital structure and firms' performance and to highlight the progress made in scientific research. The operational objectives, subsumed under the idea of capturing the evolving trends of specific research, aim to: establish the grounds of the relationship between capital structure and firm performance; analyse the architectural structure of specific debates; and identify the drivers of the development in scientific research. The underlying method of this paper was the comparative analysis of the most representative papers in the field. The originality element that we attempt to achieve is to provide a summary (both descriptive and critical) of the principles, stages and phases, as well as of the methods, techniques and instruments related to the research and knowledge of links that are created between capital structure and firm performance. As a result, we have had the opportunity to prepare a paper that delivers a double benefit: theoretical (as it proposes a framework methodology that facilitates further explorations on this theme) and practical (as it can serve as a reference for financial decision-makers to enable the optimisation of firms' financial structure).

In light of the proliferation of research in the field over the years, our study does not claim to be exhaustive; rather, in seeking to achieve our aim, we have focused on a selection of the most representative research.

2. CAPITAL STRUCTURE AND FIRM PERFORMANCE. REVIEW OF LITERATURE

The adequacy of 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.

F. Modigliani and M. Miller posited that capital structure is optimal at 100% debt financing (as it minimises the weighted average cost of capital and maximises firm performance and value). 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 (Kraus & Litzenberger, 1973; Scott, 1976; Kim, 1978); 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 (Jensen & Meckling, 1976; Myers, 1977). 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 (Boodhoo, 2009). 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 (Akintoye, 2008).

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 (Myers, 1984); Myers & Majluf, 1984). 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 (Brander & Lewis, 1986; Titman & Wessels, 1988, Maksimovic, 1988; Glazer, 1989). 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” (Myers, 2001), reoriented research to the level of empirical analyses.

3. METHODOLOGICAL LANDMARKS IN SPECIFIC RESEARCH

For most of the specific 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.

3.1. Identifying the theoretical foundations underlying the research

There are three prominent theories in this research area: trade-off theory, agency theory and pecking order theory. Considered individually, the theories permit a series of determining factors serving to examine the link between capital structure and firm performance; each of the theories is predicated on a set of hypotheses in relation to which empirical research attempts to position itself (either by validating or by refuting them).

3.2. Distinguishing the influence factors of performance

Encapsulating the wide-ranging debates, the determining factors of performance (viewed as independent variables) include: capital structure, size and age of the firm, profitability, the firm's capital ownership structure, dividend payouts, asset turnover, asset tangibility, the growth liquidity and business risk, the industry sector, etc.

3.3. Statement of hypotheses

Based on the indicators used to assess performance, hypotheses are formulated which positively or negatively correlate the dependent variables to the independent variables.

The statement of hypotheses is undertaken in agreement with the already mentioned financial theories. These are applied in customised manner, in that for certain independent variables contradictory hypotheses may be adopted. For instance, as regards the effects of profitability, trade-off theory posits that more profitable firms are exposed to lower financial distress risks and have a stronger incentive to take on debt in order to benefit from tax shields or to increase the firm's performance (a positive relationship between the firm's leverage and performance is estimated). "Agency cost theory" estimates that additional debt decreases agency costs, reduces inefficiency and hence leads to improved firm performance. Pecking order theory is founded on the idea that more profitable firms favour self-financing to using external sources (a negative relationship between the firm's leverage and performance is thus assumed).

3.4. Establishing the size of the research sample

Initially, research was largely based on data on developed economies which exhibit many institutional similarities. It is worth noting that different countries have different institutional arrangements, especially as regards taxation and bankruptcy regulations, the market for corporate control, and the banks' role on the securities market. In light of the above considerations, research on the correlation between capital structure and firm performance must be based on firms that are subject to comparable tax regimes, common bankruptcy rules, comparable market rules and similar financial traditions (Pratheepkanth, 2011).

We are now witnessing an expansion of the multitude of elements that describe the research sample; this is due either to the increase in the number of examined firms, to the extension of the period of analysis or to the incorporation of new influencing factors.

3.5. Identifying the nature of the data

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 (2006) 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 (1999) maintain that market value may distort prospective investment

decisions. Moreover, J. R. Graham and C.R. Harvey (2001) 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 (Welch, 2004). Furthermore, E. K. Kayo and H. Kimura (2011), 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. Rajan & Zingales (1995) 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).

3.6. Identifying the manner of data presentation to facilitate modelling

Having access to time series of the evolution over a particular period of time of particular financial indicators, most researchers resort to panel data models; such models consist in estimating regression equations employing series that are simultaneously time series and cross-sectional data. The use of the model has made possible:

- to summarise the impact of a variable in a single coefficient on a group of time series (dependent variables);
- to estimate specific coefficients (constant or coefficients of independent variables) for each time series considered as a dependent variable;
- to group dependent variables into categories and estimate the impact of the category to which the dependent variable belongs on its evolution.

3.7. Defining the statistical model

Researchers use (predominantly linear) statistical models to analyse the importance of the various factors affecting the capital structure (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 (leverage); 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 (Chou & Lee) 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 (Margaritis & Psillaki, 2010) define the regression equation for the firm performance model as follows $EFF_i = a_0 + a_1 LEV_i + a_2 LEV_i^2 + a_3 Z_i + u_i$ (where EFF is the firm efficiency, LEV is the debt to total assets ratio; ZI is a vector of control variables; and u is a stochastic error term).

3.8. Carrying out the correlation and regression analyses

The correlation is used to describe the intensity of the link between the two categories of variables (dependent variable – firm performance; independent variable – determinants of the performance, i.e. capital structure).

Regression analysis is employed to test the impact of the various influencing factors on firms' performance. It allows quantifying what percentage of the total variation in performance is accounted for by the influence of each separate determinant.

In most studies, regression analysis is followed by a descriptive statistics which lists – in a single table – summary information for several variables.

3.9. Presenting the results

The implementation of the adopted models yields values that serve to estimate the significance and intensity of correlations. In most cases, each independent analysed variable (i.e. each determining factor specific to the firm, industry or country) is interpreted (individually or linked with other variables) in terms of the generated findings. The findings may confirm or invalidate previously stated hypotheses. Additionally, it is determined whether the findings are in agreement with the financial theories considered when formulating the hypotheses. In order to consolidate the representativeness of results, researchers aim to ascertain the extent to which prior studies yielded similar results.

4. CONCLUSIONS

The study presents the evolution of research focusing on the impact of capital structure on firm performance; it also describes the factors serving to establish a firm's financing mix and the methodological references of research conducted on this topic. In light of these observations, we believe that the present study delivers a double benefit: theoretical (as it provides a framework methodology that enables further research on this theme) and practical (as it can serve as a reference for financial decision-makers to facilitate the optimisation of firms' financial structure).

The conclusion we have reached is that, owing to the efforts of various researchers, we have witnessed progress in scientific research, accompanied by the application of increasingly more elaborate methodologies. This particular development may be attributed to: the progress in theoretical and empirical research; the increasing number of dependent and independent variables; the diversification and development of data sources and databases; the expansion of the research sample and/or the extension of the period being analysed; the contribution of statistics, which has made possible enhanced data processing and interpretation that facilitates modelling; the contribution of econometrics, which has helped to determine new models adjusted to the financial field; the growing number of hypotheses whose validity or nullity researchers have undertaken to test; concerns regarding the testing/falsification of the results of one's own research.

Through the prism of the evolution of scientific research, we have observed the following: a) the face-off between theory and empirical facts occurs more straightforwardly; b) there is still a tendency, at times, to linearise the economic phenomenon based on a particular method (even though the economic phenomenon may follow a different path); c) researchers still face difficulties in observing the economic phenomenon and its causes and determining factors (which sometimes distort the reference databases); d) hypotheses and/or conclusions are not properly tested in all studies, to be refuted by resorting to logic or to factual/empirical assessments.

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