An empirical investigation of capital structure and firm value in Vietnam

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A R T I C L E   I N F O

A B S T R A C T

This study investigates the relationship between capital structure and shareholder value in Vietnam. We use accounting and stock market data for firms listed on the Ho Chi Minh City stock exchange during the period 2007–2013. Our analysis shows a negative relation between financial leverage and shareholder value, indicative of a proportionately greater cost to debt financing than benefit for Vietnamese firms. Moreover, we find that only low leveraged firms are likely to create value for shareholders. Our study has implications for Vietnamese firm's preferred capital structure and for investors who contemplate to invest in Vietnamese stock markets.

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1. Introduction

Since the pioneering research of Modigliani and Miller (1958), researchers have been following and extending their work to develop theories that explain capital structure decisions; most recently Xu (2012), Faccio and Xu (2015), Fauver and McDonald (2015) and Serfling (2016). The question of if, and or how, capital structure impacts firm value continues as one of the most important concerns in corporate finance. Despite the large volume of theoretical and empirical research on the relationship between capital structure and firm value, no agreement has been reached on this nexus.

A number of theories attempt to explain the value creation of capital structure with different viewpoints. In a perfect market (i.e. one without taxes, transaction costs, bankruptcy costs, agency costs and information asymmetries) Modigliani and Miller (1958) hypothesized that a firm's value would be independent of its capital structure. Introducing tax deductibility of interest payable on debt, tax-based models (Modigliani and Miller, 1963) recommend that profitable firms should borrow more. The classical trade-off model of Kraus and Litzenberger (1973) is designed at balancing the costs of bankruptcy and the tax saving benefits of debt and proposes the benefits to leverage are limited up to the point where a firm's optimal capital structure is reached. Pecking order theory establishes a hierarchical preference system for corporate financing; namely internal financing is used first, then debt, and finally equity (Myers and Majluf, 1984). Agency-based models (Jensen and Meckling, 1976) finally provide conflicting predictions of what the firm's optimal capital structure might be, since the outcome is dependent on the specific agency relationships in the firm and the associated agency cost(s).

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The mixed empirical results in the current literature are an important motivation for our study. On the one hand, many empirical studies show a negative relation between leverage and profitability consistent with the predictions of pecking order theory (see for example Kester, 1986; Titman and Wessels, 1988; Rajan and Zingales, 1995; Moh'd et al., 1998; Wald, 1999; Wiwattanakantang, 1999; Booth et al., 2001; Chen, 2004; Huang and Song, 2006; Chakraborty, 2010; Oino and Ukaegbu, 2015). Conversely, Long and Malitz (1985), Roden and Lewellen (1995), Ghosh et al. (2000), Abor (2005) and Berger and Bonaccora di Patti (2006) show leverage is positively correlated with profitability. Examining the apparent contradiction in empirical findings with respect to leverage and profitability, Danis et al. (2014) propose a positive relationship between profitability and leverage when firms are at or near their optimal leverage, and a negative when firms are not adjusting their capitals structures.

Although theoretical and empirical research predicts mixed relationships between leverage and profitability, most empirical studies show a negative relationship between these key variables. Moreover, the literature also suggests that the capital structure decision is a relevant factor explaining value created to shareholders. This study will enrich the literature and find out the result of this relationship employing data for Vietnam.

We investigate the link between capital structure and firm value employing a data set of firms listed on the Ho Chi Minh City stock exchange. Our study is motivated by the context of Vietnam as a transitional country that has emerged as a high growth market in recent years. Despite this, there remains only limited published research on the question of whether capital structure impacts upon the value of the Vietnamese firms. This study is one of the very few research to address this issue to compliment the literature on whether capital structure decision creates value to the firms in terms of shareholder value in the context of a transitional economy. More importantly, many Vietnamese firms tend to be very highly leveraged. Specially, many Vietnamese firms have debt-to-assets ratios considerably above 0.5. This is despite DeAngelo and Roll (2015) who state that most firms keep the ratio below 0.5 so to avoid financial distress.

The remainder of the study is outlined as follows. Section 2 describes the data and methodology. Section 3 presents the empirical results of the study. Finally, our conclusions and recommendations are reported in the last section. The outcomes of our study have significant implications for financial analysis and portfolio investment. Importantly, a thorough understanding of the relation between capital structure and firm value is clearly beneficial for different stock market participants. Further, both firm managers and equity investors are clearly interested in value creation of capital structure decision.

2. Data, variable description and method

From an initial data sample comprising all firms listed on the Ho Chi Minh City Stock exchange during the period 2007 to 2013, our final data sample contains 1214 firm-year observations. Initial exclusions were made owing to the non-availability of year-end accounting data and stock price data for the twelve months preceding the end of the sample period. Financial firms including banks, and insurance, security and investment firms were also excluded from the sample owing to the different nature of their business operation, and hence their capital structure.

We measure firm value in terms of abnormal returns created for shareholders and examine whether the capital structure decision creates firm value as measured by abnormal returns:

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \tag{1}$$

where $R_{i,t}$ is the daily return of stock i on day t and $E(R_{i,t})$ is the expected return on stock i on day t.[1] In this study, as suggested by Brown and Warner (1980) we use the market return (VN-Index) as the expected return on stock i on day t.

Annual firm value created to shareholders is then measured by cumulative abnormal returns (CARs), which is calculated as:

$$CAR_t = \sum_{t=1}^{N} AR_{i,t} \tag{2}$$

where $AR_{i,t}$ is abnormal return of stock i on day t and N is the number of trading day in a year.

2.1. Method

Firms' leverage ratios are ranked from the smallest to highest and then allocated into 10 leverage deciles. Decile 1 comprises firms with the smallest leverage ratios, and Decile 10 comprises firms with the highest leverage ratios. CARs corresponding to these firms' leverage ratios are then tabulated into these deciles.

We first apply a conventional *t*-statistic test to examine whether CARs are significantly different from zero. This approach follows a number of previous studies including Barber and Lyon (1997), Brown and Warner (1985), Lyon et al. (1999), and Muradoglu and Sivaprasad (2012).

We analyze the relationship between capital structure and firm value employing the following multivariate regression:

$$CAR_{i,t} = \alpha + b_1 LEVERAGE_{i,t} + b_2 PB_{i,t} + b_3 PE_{i,t} + b_4 SIZE_{i,t} + b_5 BETA_{i,t} + \varepsilon_{i,t} \tag{3}$$

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[1] Stock returns for each firm are calculated on a daily basis and defined as the log difference of consecutive closing prices that were adjusted for dividends, splits and right issues.