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ABSTRACT

This article examines the explanation power of the pecking order and target adjustment models on 148 Borsa Istanbul (BIST) firms’ capital structure over the period of 2005 to 2015. The article also estimates the speed of adjustment (SOA) to the targeted leverage level. Although a firm’s capital structure is jointly determined by both theories, target adjustment model appear to have relatively higher power in explaining capital structures of BIST firms. Estimates of the adjustment speeds suggests that firms move toward their target debt ratios at a fast pace. Adjustment speeds estimated with market leverage were significantly higher (44% - 83%). Share price volatility was found to have a rather short-term impact on market leverage. Firms rapidly revert back to their targets and offset these fluctuations within few years. Adjustment speed estimates vary with the estimation method. System generalized methods of moment estimator (GMM-SYS) provided the slowest SOA estimation whereas firm-fixed effects estimators imparted the fastest adjustment speed.

KEYWORDS

Borsa Istanbul, Capital Structure, Emerging Market, Panel Data Analysis, Pecking Order Theory, Speed of Adjustment, Target Adjustment Model, Trade Off Theory

1. INTRODUCTION

The basis for capital structure theory is Modigliani and Miller’s (1958) irrelevance principle, which is valid only under the restrictive assumptions of perfect capital markets, entailing a frictionless market, that is, no arbitrage, no taxes, no transaction costs, no bankruptcy or business disruption costs, corporate insiders and outsiders have the same information (no signaling opportunities), managers try to maximize shareholders’ wealth (no agency cost) and operating cash flows are not affected by the changes in capital structure. Then, the value of the firm is supposed to be independent of its capital structure. In other words, financing choices of the firm are irrelevant. You can neither create nor destroy value by merely changing the debt level of the firm.

As we start relaxing the assumptions of perfect market conditions, the theory on capital structure starts to get complex. Majority of the theories succeeding Modigliani and Miller’s seminal work are mostly focused on relaxing these assumptions of perfect capital markets. Theoretically, when only the tax assumption is relaxed, optimal capital structure is expected to comprise only debt and no equity because of the tax shield provided by interest payments. Graham (2000) estimated the present value of...
tax benefit of debt to be equal to approximately 10% of firm value. In spite of tax advantages of debt, observed leverage ratios in reality are quite low and some evidence which contradicts the predictions regarding tax advantages of debt is present (Fama and French, 1998). There are also studies which confirm the relation between value and tax. (Kemsley and Nissim, 2002).

Trade-off theory is based on a trade-off between the tax advantages of debt financing, and bankruptcy/financial distress costs. In trade-off theory companies operate with a target debt ratio at which the costs and benefits of debt are balanced. Leland and Toft (1996) suggested a mathematical model which attempted to explain the relationship between firm value and asset risk, leverage, bankruptcy costs, tax rates, total pay-out rate, and default free interest rate. Trade-off theory, due to bankruptcy costs which increase with leverage, predicts a moderate borrowing in contrary to Modigliani and Miller’s model with only taxes. Some studies claimed that it failed to explain observed corporate behavior and proposed alternative theories to explain firms’ debt levels (i.e. Myers, 1984). Thus, the debate on explanation powers of trade-off theory and alternative theories, mainly pecking order theory continues. This study tried to provide additional evidence on these competing as well as complementary theories from the Turkish market. It also attempted to estimate firms’ adjustment speed to the target debt level.

The rest of the paper is organized as follows. Section two provides the background of theories on capital structure, section three explains the data and methodology used in this study, section four presents the results of the study and section five concludes.

2. LITERATURE REVIEW

When the probability of financial distress is low, we expect firms to prefer higher leverage because of tax advantage. Conversely, in some industries many profitable companies are found to be operating at low debt ratios (i.e. pharmaceutical companies). It is also observed that profitable companies tend to borrow least (Rajan and Zingales 1995). Some studies found no evidence of a bankruptcy cost effect, which seemed to be inconsistent with the predictions of trade-off theory (Masulis, 1980). Thus, classical trade-off theory does not fully explain the correlation between high profitability and low debt ratios. As Myers (1984) puts it “The static trade-off story works to some extent, but it seems to have an unacceptably low R²”.

Pecking order theory (Myers and Majluf, 1984) emerged as an alternative to the trade-off model and based on asymmetric information of agents and the principals. It basically suggests that firms prefer internal financing to external financing. When internal cash flow is not sufficient to fund the firm’s requirements, the firm is expected to borrow rather than issue equity. Therefore, it conjectures that firms will use less debt than predicted by trade-off theory. The debt amount carried on the balance sheet of the firm reflects firm’s aggregate historical cash flow. As dividends are “sticky”, dividend cuts are unlikely to be used for financing needs. If external funds are required, firms will prefer to issue debt first. When internal cash generation exceeds cash requirement, cash surplus is used to pay down debt rather than increasing dividends or repurchasing shares. Therefore, firms’ debt ratios reflect cumulative financing requirement. The pecking order theory explains why majority of external financing comes from debt and why profitable firms borrow less. According to the pecking order hierarchy, firms do not have target debt/equity ratio. The profitable firms have more internal financing available, less profitable firms require external financing and consequently accumulate debt. Although there are some challenging evidence, many of the prior researches supported pecking order hierarchy (Leemmon and Zender, 2010; Byoun, 2008; Chen and Strange, 2006; Minton and Wruck, 2001). For instance, Leary and Roberts (2005) empirically revealed that information asymmetry is not related to pecking order behavior though it is significant in issuance decisions. Helwege and Liang (1996) tested pecking order theory and found evidence against it, which was consistent with the optimal capital structure model. Because some of the analyzed firms raised external financing in the absence of a deficit, to reach a target capital structure.
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