CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY, ISLAMABAD

Determinants of Corporate Borrowing: A Comparative Study of Developed, Emerging and Developing Countries

by

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A thesis submitted in partial fulfillment for the degree of Doctor of Philosophy

in the

Faculty of Management & Social Sciences
Department of Management Sciences

2019

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CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

ISLAMABAD

2019

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This is to certify that the research work presented in the thesis, entitled "**Determinants of Corporate Borrowing: A Comparative Study of Developed, Emerging and Developing Countries**" was conducted under the supervision of **Dr. Muhammad Ramzan Akhtar**. No part of this thesis has been submitted anywhere else for any other degree. This thesis is submitted to the **Department of Management Sciences, Capital University of Science and Technology** in partial fulfillment of the requirements for the degree of Doctor in Philosophy in the field of **Management Sciences.** The open defence of the thesis was conducted on **September 18, 2019.**

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List of Publications

It is certified that following publication(s) has been made out of the research work that has been carried out for this thesis:-

1. Khan, B., Akhtar, M. R. Firm Specific Determinants of Debt Financing: A Sino-Pak Perspective. *Accepted in NUML International Journal of Business & Management*, 13(1), June 2018.

(Basharat Khan)

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Acknowledgements

All praises to ALLAH ALMIGHTY, for giving me health, strength and endurance to complete this work successfully. Without HIS WILL nothing could happen. As rightly stated “HIS command, when HE intends a thing, is only that HE says to it, “Be,” and it is. So glory be to the ONE Who in Whose hand is the realm of all things, and to HIM you will be returned” (Surah 36: Ya-seen, Verse 82-83).

Higher Education Commission of Pakistan played a special role in my educational career. Financial support by HEC reduced my economic burden and helped me focused on my PhD studies. So my sincere thanks to HEC for financial assistance.

I am grateful to my advisor **Prof. Dr. M. Ramzan Akhtar** at CUST Islamabad, Pakistan. He contributed in this effort by his workable ideas, valuable suggestions and motivation. His guidance, support and prayers were there all along.

Last phase of my thesis was even harder. I am very much indebted to **Prof. Randall Morck** (University of Alberta, Canada) for making that phase relaxed and interesting. I greatly appreciate his marvelous support, valuable comments and helpful discussion during his supervision. His kind smile welcomed me every time I was nervous for meeting with him.

I also benefited from useful discussion with Dr. Arshad Hassan (CUST, Islamabad, Pakistan), Dr. Ivor Cribben (University of Alberta, Canada) and Dr. Vikas Mehrotra (University of Alberta, Canada) on different issues during this study. I hereby sincerely acknowledge their efforts and extend of special gratitude to all of them.

Very special thanks to my colleagues Mr. Guofeng Wu (Peking University, China) and Mr. Asif Malik (University of Alberta, Canada) for their great help and company during my stay at University of Alberta, Canada.

It is very difficult to name everyone who supported me. Therefore I would love to extend my whole hearted acknowledgement and collective thank to all my competent teachers and sweet friends at CUST, Islamabad. I wish them best of luck.

I wish to acknowledge my loving wife, Sadaf Basharat Khan, and my sweet children, M. Hashim Basharat, M. Ammar Basharat and Fatemah Basharat for keeping me inspired all the way. My loving mother, strict father, motivated brothers and humble sisters: I owe it all to you.

Finally, Thanks to everyone and best of Luck

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Abstract

Previous literature suggests that some predictions of the capital structure theory are portable across countries. But still there are persistent discrepancies and crossectional variations regarding choice of debt. Therefore not only firm specific, but country specific factors are also influencing firms' choice of debt. The basic purpose of this dissertation is to investigate exactly which predictions of the theory are portable across and how debt choice is influenced by institutional features in developed, emerging and developing economies.

This particular study analyzes and compares the determinants of debt ratios using firm specific data from 2006 to 2016 for a sample comprised of 9536 non financial firms from 27 countries. Our sample of countries includes 10 each from developed and emerging and 07 from developing economic block. Panel data models have been used to test the impact of 09 firm specific attributes on debt ratios in individual countries. Comparison of results suggest that profitability and size of firm are two widely validated firm specific determinants of long term debt ratios across all countries irrespective of economic blocks they belong. Similarly assets structure and liquidity are consistent and most validated firms' specific determinants of short term debt across all countries. Negative slopes of profitability, asset structure and liquidity are in line with pecking order hypothesis, while positive slope of size is in accordance with trade-off theory. Apart from profitability, size, asset structure and liquidity rest of regressors have different impact on leverage ratios in different countries. Thus we say that it is difficult to reconcile all firm specific factors under a single theoretical frame work. However theoretical predictions of pecking order theory are widely validated.

We also examine the impact of 06, country specific attributes on average long term debt ratios in each economic block using panel data models. Regression outputs show that countries characteristics differently influence average long term debt ratios in the three economic blocks. Bond market development in advanced countries is the only positive significant factor that affects average long term debt in developed countries. Results of emerging block show that both legal integrity and bond market development significantly influence firm's choice to employ debt. In contrast to emerging countries, our results suggest that improvement in legal enforcement and integrity actually encourages firms in the developing countries to borrow more in long run.

Keywords: Debt, Firm-specific factors, Institutional features, Developed, Emerging, Developing, Countries.

JEL Classification Numbers: F30, G10, G32

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Abbreviations

BLUE	Best Linear Unbiased Estimators
BMAT	Bond Market Activity
BSAT	Banking Sector Activity
CMAT	Capital Market Activity
CPPI	Corruption Perception Index
DIVP	Dividend Payout per Share
ECOF	Economic Freedom Index
EVOL	Earning Volatility
GDP	Gross Domestic Product
GLS	Generalized Least Square
GROW	Growth
LDBTA	Long Term Debt over Total Assets
LIQD	Liquidity
LSDV	Least Square Dummy Variable
NDTS	Non Debt Tax Shields
OLS	Ordinary Least Square
PVTS	Percentage Value of Interest Tax Shield
PROF	Profitability
PVBC	Present Value of Bankruptcy Cost
SDBTA	Short Term Debt over Total Assets
SPDJI	Standard & Poor's Dow Jones Indices
TANG	Tangibility
UNIQ	Uniqueness

Chapter 1

Introduction

1.1 Background of the Study

Modigliani and Miller (1958) laid down the foundation of modern capital structure theory. Based on the assumptions of frictionless markets, MM irrelevance propositions concluded that firms' financing decisions has no potency to influence its market valuation, because investors can replicate the gearing affects by homemade leverage. MM irrelevance theorem showed that a firm derives economic value from the potency of its assets to generate operating profits. Repackaging shareholders and bondholders claims has nothing to do with value addition. The underlying assumptions of MM irrelevance were far away from objective reality but were helpful to see how a frictionless market would work. In a follow up paper Modigliani and Miller (1963) relaxed the no tax assumption and concluded that financing with debt increases the value of levered firm by benefiting the firm due to interest tax deductibility. As value of levered firm increases with the deployment of debt hence a firm can seemingly deploy 100% debt.

Subsequent studies relaxed many of MM irrelevance assumptions to see the robustness of the model to market imperfections and acknowledged that financing decisions do matter. Empirical studies (DeAngelo & Masulis, 1980; Kraus & Litzenberger, 1973; Stiglitz, 1972) relaxed the assumptions of no tax and zero bankruptcy costs in the model. Jensen and Meckling (1976) introduced agency cost of debt and equity. Ross (1977) put forward signaling framework based on asymmetric information. Similarly DeAngelo and Masulis (1980) demonstrated how non debt interest tax shield will affect capital structure of firms. Myers (1984) proposed Pecking order of financing preferences by corporate managers.

Models derived from the aforementioned theories identified several potential variables that influence financing decisions. Most of the research work focused on firms' related attributes within individual countries. A notable effort to identify factors that affect management choice of debt ratios in US came from Titman and Wessels (1988). Research work carried out in individual country to determine firms' characteristics that causes a firm to borrow in France (Vivani. 2008), China (Chen, 2004), Pakistan (Hijazi & Tarique, 2006; Sheikh & Wang, 2011), Japan (Akhtar & Oliver, 2009), Spain (Ojah & Manrique, 2005), Thailand (Thippayana, 2014), Taiwan (Wiwattanakantang, 1999), Australia (Akhtar, 2005), India (Handoo & Sharma, 2014), Brazil (Forte, Barros & Nakamura, 2013) and Indonesia (Sudiyatno & Sari, 2013) are few examples.

However with technological advancements and integration of world markets the focus of capital structure debate shifted to international comparisons. Rajan and Zingales (1995) study for US, UK, Germany, Canada, Japan, France and Italy (G7) is considered as a pioneering effort in this regard. They reported that some common firms' related attributes affect debt ratios across countries but some other dynamics are also at play. Wald (1999) study for US, UK, France, Germany and Japan concluded that some firm specific characteristics are common in determining debt ratios however the correlation between debt-asset ratio and firm's growth, profitability, size and riskiness vary across the countries. Wald (1999) suggested that varying choices of capital structure across countries may be due to legal, institutional differences which affect tax policies, agency relationship and information asymmetry. Booth, Aivazian, Demirguc-Kunt, and Maksimovic (2001) investigated the capital structure choices in ten developing countries, i.e. Pakistan, India, Korea, Malaysia, Turkey, Brazil, Thailand, Mexico, Jordan and Zimbabwe and concluded that leverage ratios in developing countries seem to be affected by the same variables in the same way that is significant in advanced countries

(G7). However country attributes seem to have potential influence. Many other studies (Bancel & Mittoo, 2004; Brounen, De Jong, & Koedijk, 2006; De Jong, Kabir, & Nguyen, 2008; Fan, Titman, & Twite, 2012; Oztekin, 2015) found not only firms' own weaknesses and strengths but country specific attributes as well influence capital structure choice.

1.2 Problem Statement and Scope of the Study

Our own time has witnessed some historical developments in technology and massive increase in communications which has intensified the internationalization tendencies. The word market is much more integrated today than ever before. In view of these developments this study takes countries from three economic blocks (developed, emerging, developing) to broaden its geographical coverage and attempts to answer the following key questions.

1. What are the reliable and widely validated firm specific determinants of long and short term debt in different developed, emerging and developing countries?
2. How the impact of firm specific factors on debt ratios varies across countries?
3. How these attributes relate to core theories of capital structure choice?
4. Are firm specific determinants are reconcilable under trade off framework at large?
5. How institutional features affect average long term debt ratios in developed, emerging and developing countries?
6. Does there exist any significant difference/consensus among the determinants of long and short term debt in developed, emerging and developing economies?

To explore a set of fundamental differences and significant similarities this study extends its scope not only to larger number of developed countries but emerging and developing countries of the world as well. This study will help us understand whether any regular pattern exists between debt financing choices in these major economic blocks of the world.

1.3 Theoretical Background

MM irrelevance model may work well in perfect and frictionless capital markets. But in real world managers face certain market frictions while deciding the capital structure of firms. Every manager looks into capital structure from the lens of bankruptcy costs, marginal cost and benefit of debt, taxation, agency dilemma and information asymmetry etc. For example tradeoff model suggests that firms may seek tradeoff between tax related benefits and bankruptcy related costs of gearing. But stock market reaction in terms of price increase/decrease to leverage increasing/decreasing events could not be reconciled under tradeoff. Similarly tradeoff theory fails to offer a plausible explanation of why firms maintain financial slack. However models of pecking order of financing preferences appear more reasonable to explain observed patterns like financial slack, stock market reaction to leverage increasing and decreasing events and negative profit-leverage relationship. Similarly models derived from signalling framework of capital structure choice proposes that use of huge debt can be used to signal better prospects of firms to unaware investors. Under signalling framework profitable and growth firms should use higher debt levels. But the observed pattern is opposite.

Despite certain limitations, models derived from tradeoff, pecking order and signalling explain some observed patterns (e.g. Non-debt tax shields, growth opportunities, profitability, tangibility, earning variability and size etc) of capital structure across the world. Although De Jong et al. (2008) suspect that theories of capital structure are mostly developed and experienced in a single country's perspective. Still Booth et al. (2001) and Wald (1999) suggest that some predictions of capital structure theory are portable across countries. In the current study we aim to investigate the most reliable determinants of debt choice across 27 countries individually in first place. In the second place we compare the observed patterns across these countries to see exactly which predictions are portable across countries. We use trade off model as our principal theoretical model to explain determinants of financial leverage. Thus in broader sense, trade off is the overarching theatrical framework that governs our study.

Furthermore a number of studies (Bancel & Mittoo, 2004; Brounen et al., 2006; De Jong et al., 2008; Fan et al., 2012; Oztekin, 2015) confirm that some predictions of the theory of modern finance are same across countries. But also admit that there are persistent discrepancies regarding choice of debt. Therefore institutional features of different countries are likely influencing capital structure. In view of this gap in literature, we also investigate how different institutional factors directly influence the debt choice across countries.

Financial markets are not perfectly efficient and frictionless. Managers have certain market considerations when faced with the choice to employ debt into capital structure. In the below section we discuss how well MM irrelevance model work in an ideal situation of perfect capital markets and how the model evolves into different real world theories when pieces of objective realities are added (frictionless assumptions are relaxed) to it. Furthermore to see how the models derived from these theories explain the observed patterns of capital structure around the world.

1.3.1 Perfect Capital Markets and MM Irrelevance Theorem

Miller and Modigliani (1958) laid down the foundation of modern theory of capital structure by developing the basic framework for the analysis. Some implicit and explicit assumptions of Miller and Modigliani (1958) irrelevance theorem are:

- Outsiders and insiders of the firms have same information. Hence there is no information asymmetry and whatsoever.
- There are no personal and corporate income taxes.
- There are no transaction associated costs and securities can be sold and purchased instantaneously.

- There are no costs of financial distress.
- Only two types of securities i.e. risk free debt and risky stocks can be issued by firms.
- Individual investors and corporations can both lend and borrow at risk free rate of interest.
- All cash flows are perpetuities and there is no growth.
- All investors have homogeneous expectations about firms' profits.
- All firms can be categorized into one comparable return class out of many.
- Mangers of the firms act in the best interest of the shareholders.

The summarized irrelevance propositions are as

1.3.1.1 MM Proposition I: (Without Corporate Tax Consideration)

Description: Value of all equity firms would be equal to that of levered firm.

Mathematically:

$$V_U = V_L = V_S + V_D$$

Where

V_U: Represents value of all equity firm

V_L: Represents value of levered firm

V_S: Represents value of stocks

V_D: Represents value of debt

Insight:

Why investors should pay for something they can do by themselves? If levered firms are priced higher than unlevered then rational investors would borrow funds at the same risk free rate and buy shares of an unlevered firm. Hence leverage effects can be duplicated at home by investors themselves a phenomenon termed as homemade leverage effect. Consequently firm's value would not be affected by capital structure choice provided corporate tax is not there. There is another way to explain this proposition. If share prices of levered firms are high, then arbitrage opportunity exists. Arbitrage is a powerful tool to ensure law of one price. That is why MM concluded that capital structure decisions are irrelevant and has no potency in itself to influence value of the firm.

1.3.1.2 MM Proposition II: (Without Corporate Tax Consideration)

Description: Leverage increases the required rate of return on equity. The cost of equity for a levered firm is a linear function of debt to equity ratio.

Mathematically:

$$R_{LE} = R_{UE} + (V_{OD}/V_{LE}) \times (R_{UE} - R_{OD})$$

Where

R_{LE}: Represents return on levered equity (Cost of levered equity)

R_{UE}: Represents return on unlevered equity (Cost of capital)

V_{OD}: Represents value of debt

V_{LE}: Represents value of levered equity

R_{OD}: Represents interest rate on debt (Cost of debt)

Insight:

Lenders of the firm have prior and fixed claims and stockholders have residual claim on the cash flows that a firm generates. This prior and fixed claim of debt holders makes the residual claim of stockholders uncertain to some extent. Hence equity is stipulated with greater risk when a firm borrows funds. The intuition behind MM proposition II is that increase in leverage increases the risk of equity holders consequently the required rate on equity increases.

1.3.2 Imperfect Markets, Corporate Tax and Capital Structure

MM Irrelevance theorem (1958) was based on ideal market assumptions. Durand (1959) was the first critique because real financial markets are not tax free and financial transactions are costly and uncertain. To push their initial demonstration of irrelevance, Modigliani and Miller (1963) in a follow up paper replaced the no corporate tax assumption with a piece of objective reality and reshaped their Irrelevance propositions.

1.3.2.1 MM Proposition I: (With Corporate Tax Consideration)

Description: Value of all equity firms would be less than value of levered firm.

Mathematically:

$$V_L = V_U + PV_{TS}$$

Where

V_U: Represents value of all equity firm

V_L: Represents value of levered firm

PV_{TS}: Represents Present value of interest shields

Insight:

In most of the cases interest is tax deductible expense unlike dividends. Therefore levered firms have the privilege to get government subsidy in the form of interest tax shield. This differential treatment lures firms to lever their capital structures to reduce tax base and reap the benefits of state subsidy in the form of interest tax shield. If corporate income rate is "T_C" then according to mathematical expression of this proposition each 1$ of additional debt that is added to capital structure causes about $1 \times T_C$ value increase in firm's value. As per mathematical relationship a firm may install 100% debt to attain equilibrium.

1.3.2.2 MM Proposition II: (With Corporate Tax Consideration)

Mathematically:

$$R_{LE} = R_{UE} + (V_{OD}/V_{LE}) \times (R_{UE} - R_{OD}) \times (1 - T_C)$$

Where

R_{LE}: Represents return on levered equity (Cost of levered equity)

R_{UE}: Represents return on unlevered equity (Cost of capital)

V_{OD}: Represents value of debt

V_{LE}: Represents value of levered equity

R_{OD}: Represents interest rate on debt (Cost of debt)

T_C: Represents tax rate on corporate income

Insight:

Since equity is stipulated with greater risk for the reason that its providers have residual claims. The increase in leverage increases the risk of equity holders, to compensate for the risk the required rate on equity increases. However some of the risk increased is offset by the increase in interest tax shield. In nutshell according to MM (1958) firms are indifferent to capital structure (one extreme), but according to MM (1963) firms should be 100% debt financed (second extreme). But the reality lies somewhere between two extremes.

1.3.3 Imperfect Markets Corporate and Personal Tax and Capital Structure

MM (1958) model suggested that in case of perfect capital markets with no corporate income taxes, capital structure decisions have nothing to do with value of the firm. MM (1963) model introduced corporate income taxes and concluded that value of levered firm increases and keeping the benefits of present value of interest tax shield in view a firm may even install 100% debt to its capital. Miller

(1977) introduced corporate income tax rates as well as personal income taxes on equity and bonds' income in the model to see how it affects value of the firm? Most Governments encourage use of both equity and debt financing in the economy. Debt and equity has differential tax treatments at corporate levels. Debt has prior claim and most governments allow interest deductibility. On the other hand equity has residual claims and dividends are not tax deductible. This differential treatment reduces firms' tax base of income and encourages corporations to make use of debt. In other words government subsidizes firms to use debt. Bonds generate income in the form of interest to bondholders subject to personal income taxes say T_B. Income from equity comes in the forms of dividends and appreciation subject to tax T_S at personal level. Both stock dividends and stock price appreciation are generally taxed at lower rates than interest income (i.e. $T_S < T_B$). Another luring feature of personal taxes levied on long term capital gain is that taxes can be delayed until the gain is realized. Here the differential personal income tax treatment of income from bonds and stocks is an encouragement of using equity financing. If income from stocks is taxed at equal or higher rates than bond income, stock investors would require a higher rate of return to cover the increased risk associated with residual claim of stocks. But due to favorable tax treatment of stocks income at personal level, investors even accept a relatively lower return before tax on stock income in relation to return before tax on bonds income.

Lets V_D be value of debt, T_S is personal income tax rate on dividend income, T_B is personal income tax rate on interest income, T_C is corporate income tax rate on corporate income. According to Miller (1977) value of a levered firm V_L is given as

$$V_L = V_U + [1 - (1 - T_C)(1 - T_S)/(1 - T_B)] \times V_D \tag{1.1}$$

Equation (1.1) shows how corporate income taxes and personal income taxes on interest and stock income would affect the market equilibrium? According to Miller (1977) the benefit of using leverage B_L can be calculated as

$$B_L = [1 - (1 - T_C)(1 - T_S)/(1 - T_B)] \times V_D \qquad (1.2)$$

Now there can be many situations like

Scenario: 1 $T_C = T_S = T_B = 0$

In case scenario: 2 exists then gain from leverage B_L as in equation (1.2) equals to zero and equation (1.1) turns as $V_L = V_U$ and MM Irrelevance Proposition (1958) holds.

Scenario: 2 $T_C > 0$ and $T_S = T_B$

In case scenario: 2 exists then gain from leverage B_L as in equation (1.2) equals $T_C \times V_D$ and equation (1.1) turns as $V_L = V_U + T_C \times V_D$ now MM Proposition (1963) holds.

Scenario: 3 $T_C > 0$, $T_B > T_C$ and $T_S = 0$

In case scenario: 3 exists then gain from leverage B_L as in equation (1.2) turn into negative.

Scenario: 4 $T_C > 0$ and $T_S > T_B > 0$

In case scenario: 4 exists then gain from leverage B_L as in equation (1.2) would be higher than MM (1963) basic case.

Scenario: 5 $T_C > 0$ and $T_S < T_B > 0$

In case scenario: 5 exists then gain from leverage B_L as in equation (1.2) would be lower than MM (1963) basic case.

When the ideal assumptions of MM irrelevance propositions were relaxed different models of capital structure came into being. The introduction of taxes and costs of bankruptcy resulted in static tradeoff theory. The relaxation of assumption related to transaction costs resulted in dynamic tradeoff. Pecking order paves its way when asymmetric information is introduced in the model.

1.3.4 Static Trade-off Theory and Costs of Bankruptcy

Debt can carry benefits in the form of its levering ability. As interest is tax deductible as per tax code while dividend payment to shareholders is not. Interest deductibility decreases taxable income by an amount equal to the amount of interest. Hence lower income tax to be paid by the company. Government shares the company's cost of debt by allowing interest to be deducted from taxable income. Thus interest deductibility is a form of government subsidy of financing growth opportunities in the economy. The benefit obtained from interest deductibility is referred to as interest tax shield. Companies can take advantage of this subsidy in the form of tax shield by increasing the level of debt. But in spite of the interest tax advantage different companies employ different levels of debt. One possible reason for this may be the tradeoff between tax benefits and costs associated with debt in the form of bankruptcy. Higher level of debt carries the potency to paralyze the firm leaving it unable to meet its contractual obligations and commitments. Firms having inabilities to service their debt may face severe consequences in the form of different legal, administrative and accounting expenses. Bankruptcy forces a firm to sell its assets for less than its true worth. Employees feeling insecure jobs switch over. Lenders increase their rates or impose strict covenants or even refuse to lend. Suppliers become scary to grant credit. Thus retaining customers, creditors, suppliers and employees becomes a very daunting task for firms facing distress (Altman, 1984; Hotchkiss, 1995). Management of such failed companies loses their jobs and face bleak careers ahead in future (Gilson & Vetsuypens, 1993). Companies using excessive levels of debt are more prone to bankruptcy costs. Companies with volatile earnings have much more higher chances to get into bankruptcy than firms having stable earnings. Similarly firms having intangible or special purpose assets should limit their use of excessive debt. Highly indebted firms may face cut backs on marketing expenses, training and research & development to meet its debt obligations. Although interest is tax deductible expense and can create value, but in case of financial disturbance and excessive levels of debt the tax shield advantage vanishes because company becomes unable to generate profit. Besides that lots of profitable investment opportunities are lost due to unavailability of financing. Thus there must be limits to debt level.

A serious debate on Modigliani-Miller theorem of irrelevance gave birth to the trade-off theory. The original version of trade-off came into being when the MM assumption of no corporate taxes and bankruptcy costs were both relaxed. This relaxation favored the benefits of leverage in the form of interest tax shields. Now a common understanding of trade-off theory is that value of levered firm (V_L) is equal to value of unlevered firm (V_U) plus percentage value of interest tax shield (PVTS) less present value of bankruptcy cost (PVBC).

$$V_L = V_U + \text{PVTS} - \text{PVBC}$$

Hence optimal capital structure of a firm can be achieved by trading the costs of debt off with its benefits. Manager of a firm should evaluate and analyze the different costs and benefits of leverage plan. It is agreed that a balance can be achieved between marginal benefits and marginal costs. A major benefit for the use of debt lies in its ability to reduce the taxable income (tax deductibility of interest payments) and provide the tax shield. This advantage of debt fascinates managers to make use of corporate debt. However the cost of potential financial distress is a stipulated disadvantage of debt, especially when a huge amount of debt is acquired by a firm. According to Kraus and Litzenberger (1973) a firm's capital structure is a reflection of the trade-off between the benefits of tax shield advantage and costs of financial distress. Previous work of researchers on the trade-off model yields mixed results. According to this theory profitable firms are expected to use higher level of debt in order to decrease tax liability. But many studies (Fama & French, 2002; Graham, 2000; Rajan & Zingales, 1995; Titman &Wessels, 1988) affirm that profitable firms tend to use less leverage, which is not consistent with the trade-off theory. Microsoft Corporation is an example of such firms that in spite of profitability use zero or low debt. Many other studies conform and support the trade-off theory and role of target level of debt (Hovakimian, Opler, & Titman, 2001; Hovakimian, Hovakimian, & Tehranian, 2004; Korajczyk & Levy, 2003; Marsh, 1982). Frank and Goyal (2007) examine the relative importance of 39 factors and reported in favor of trade-off. According to many empirical studies firms are not that much active to their financial policy rather they try to move towards their targeted leverage to buy back their stocks (Hovakimian, 2006; Leary & Roberts, 2005).

Trade-off theory of capital structure believes that there is a threshold to level of debt. Usage of debt up to that threshold level brings capital structure to an optimum point, a point where costs of debt (bankruptcy costs) can be offset with benefits of debt (Interest tax shields). In contrast to perfect capital market assumption, trade-off model does not assume zero costs of financial bankruptcy. This theory dominates the field of finance and is considered as a mainstream theory of capital structure. But it is not able to explain all the observed patterns of capital structure. For example:

(a) Inverse relationship of profitability and firms' leverage.

(b) Leverage increasing events increases stock prices while leverage decreasing events causes stock price decline.

(c) Firms issue debt frequently than seasoned equity.

(d) Why firms maintain financial slack?

The reason may be that it is incomplete; it does not take transaction costs of raising debt or equity into account. Fama and French (2002) argue that firms restrict their use of debt keeping bankruptcy considerations in view.

1.3.5 Dynamic Trade-Off Theory

Empirical evidence shows that debt ratios of the firm oscillate around a target ratio and hence exhibit a mean reversion behavior. Companies because of transaction costs allow its debt ratios to drift within optimal range. Leverage ratios are only adjusted when benefits are greater than costs. Fischer, Heinkel, and Zechner

(1989) using a dynamic model of capital structure supported the relevancy of capital structure in dynamic settings.

Hennessey and Whited (2005) developed a dynamic model to explain investment and financial policies in the presence of both corporate & personal taxes, debt constrain and high equity issuance costs. It was suggested that firms can be highly levered or otherwise with no targeted leverage. Leary and Roberts (2005) showed that adjustment costs to rebalance leverage ratios have significant consequences for firms' financial policies. According to their findings leverage is actively rebalanced by corporate managers.

Strebulaev (2007) using a dynamic tradeoff model suggested that in a dynamic economy and presence of transaction costs firms may drift from their optimal leverage point. However firm rebalance their leverage when adjustment costs justify reversion.

1.3.6 Pecking Order Hypothesis

Donaldson (1961) examined the managerial behavior of making financial decisions and suggested that due to transaction costs US managers prefer some low costly financing resources over others costly resources. Thus order of preference was proposed years before Pecking Order Theory was suggested by Myers (1984) in presidential address. This theory has its own significant importance in the field of corporate finance. To overcome the limitations of Trade-Off theory, Myers (1984) proposed Pecking order theory elaborated by Myers and Majluf (1984). The two underlying assumptions of pecking order theory are as follow

(i) There exists information asymmetry between insiders and outsiders in the market.

(ii) Managers as agents act in the best interest of principals (existing share holders).

These two assumptions are crucially important and plausible. Insiders (directors, major shareholders, management etc) know better or more than outside stakeholders about company's future prospects. Outside stakeholders are skeptic. This skepticism takes its toll on the firm when firm needs external funds for financing. For example, in case of a very profitable positive NPV project management will be in no position to convince new investors. External creditors may believe that management by virtue of their superior information can easily outsmart them. By announcing marvelous projects management may try to sell them overvalued stocks at a high price. As investors have no credible means to verify management claims, they will discount the share price below equilibrium. As no one is ready to buy overpriced product, the same way no one is ready to sell underpriced product. In circumstances where share price is undervalued, management will refuse to accept even +ve NPV projects. So it is an established fact that information asymmetry carries cost. New equity issue to new shareholders on one hand causes control dilution. On the other hand new shareholders get more benefits of the projects than existing shareholders. Abstaining from positive NPV projects is not an option and is against the rule of wealth maximization. So what is the solution? The solution according to Myers and Majluf (1984) is retained cash, holdings of enough marketable securities and unused debt capacity called financial slack. Firms with sufficient financial slack can easily avail positive NPV projects without issuing risky debt or underpriced equity. As per Myers (1984) Pecking Order firm's first choice for financing is its internal funds (e.g. retained earnings). The cost of internal capital cannot be estimated as we can calculate the cost of external capital. However this does not mean that internal capital is free of cost. This internal capital is associated with opportunity cost of capital. In case of need for external finances debt issuance is the second choice. Keeping the different risk levels of debt, it is suggested that "safest debt first" rule be used. According to Baskin (1989) issuance of debt is not costly than issuance of equity. According to his findings transactions costs of raising equity is higher than transaction costs of issuing debt. Equity issuance is the last resort and should only be used when debt unused capacity has exhausted. Again preferred stocks are less risky than common and should be used first as safest equity.

According to pecking order theory firms acquire short term financing because short term borrowing does not require collateral, long term borrowings as a second choice and equity is issued as a last resort (Bistrova, Lace & Peleckiene, 2011; Huang & Ritter, 2009). Pecking order of financing decisions is supported by empirical many studies (Fama & French, 2002; Frank & Goyal, 2003; Shyam-Sunder & Myers 1999).

1.3.6.1 Implications of Pecking Order Theory

i. No Target Capital Structure

As per pecking order firms have a perfect hierarchical order of financing decisions. It does not weigh benefits of debt against cost of debt like trade-off theory. According to pecking order every company chooses its leverage ratio as per their financing needs. Firms following pecking pattern wouldn't be able to achieve an optimal capital structure, but would follow a clear cut principle to make financing decisions. In the presence of profitable investment opportunities management will use retained earnings. This will increase the equity percentage in capital structure. If additional financing is required they may issue safe debt, which may cause increase in the percentage of debt. In case the firm drains its unused debt capacity, equity issue is the last resort. In such a dynamic choice order, it will not be easy for firms to pursue a targeted capital structure.

ii. Maintenance of Financial Slack and Risk of Control Dilution

There exists information asymmetry between managers, owners and potential investors. Due to asymmetric information about the intrinsic value of the firm's assets and business opportunities, potential investors may require higher return to offset their risk. Management does not want to be punished by skeptic investors at the stock market. Thus the corporate managers would choose to utilize internal funds. In absence of investment opportunities firms would retain earnings, hold enough marketable securities and debt capacity to use it in the future (if opportunity arises) to avoid or minimize the need for external financing.

In cases of new equity issue ownership gets diluted and most of the benefits go to new shareholders leaving existing shareholders wretched. That is another reason of using pecking order and maintaining financial slack because managers do not want to lose control by issuing new equity or going against the best interests of shareholders.

iii. Stock Market Reaction to Leverage Increasing and Decreasing Events

Myers and Majluf (1984) model explains why stock market reacts positively to leverage increasing and negatively to leverage decreasing events. Firms with profitable investment opportunities finance their investments internally or with less risky debt. Equity is issued only if it is overvalued. These incentives are understood by investors hence they penalize equity issue at stock market. Debt issuance or other leverage increasing events reflect the confidence of corporate managers about firms' future earning power. Hence such issue is warmly greeted at stock market.

iv. Profitability and Leverage

As profitable firms create more cash flows, then according to trade-off such firms should use more debt to capture benefits of leverage in the form of interest tax shield. In agreement with POT many empirical studies (Akhtar & Oliver, 2009; Alves & Ferreira, 2011; Forte, Barros, & Nakamura; 2013; Frank & Goyal, 2009; Hovakimian & Li, 2011) show that profitability is inversely related to leverage.

v. Asymmetric Information, Small Firms and Role of Financial Intermediaries

All firms with positive NPV projects do not necessarily have the privilege to financial slack. Young and rapid growth firms have limited and insufficient retained earnings/financial slack and are unable to internally finance the investment opportunities available to them. Such firms are more likely exposed to asymmetric information. In circumstances where small growth firms are unable to raise finances due to asymmetric information to fund the available projects for future growth, the role of financial intermediaries comes to play. By becoming corporate insiders, financial intermediaries can contact and access the company's management, financial information and other plans of the company's operations. This development of mutual trust between bank and company's management helps overcome informational asymmetries. Now the intermediaries are in better position than general public to assess and meet the financial needs of the company with credit gadget or even with direct equity investment if it is allowed in country. These intermediaries can effectively monitor corporate performance and intervene in times of trouble. Informational asymmetries provide the rationale for the development of financial intermediations to some extent.

1.3.6.2 Limitations of Pecking Order

Nonetheless, Pecking order explains some important observed patterns of corporate capital structure like choices of financing and stock market response to leverage increasing or decreasing events but it also suffers but some serious setbacks. Pecking order theory cannot explain the effects of corporate taxes, transactions costs, costs of corporate bankruptcy and set of investment opportunities on leverage ratio. Market has some effective tools like stock market response to new issue and hostile acquisitions to discipline management. But accumulation of financial slack provides immunity to management against these market disciplines. They have no fear to face stock market penalty in the form of stock price decline and removal by hostile takeovers. Pecking order theory is unable to explain the side effects of aforementioned significant agency issues.

1.3.7 Signaling Framework

Trading both overpriced and underpriced product in the market is not easy. Buyers never want to buy an overpriced product and seller would never sell an underpriced product. In the presence of information asymmetry, sellers of even bad quality can make self-serving statements about high quality. As buyers have no mechanism to judge the quality at time of purchase. Buyers are always skeptical about quality and superior information of the sellers. Thus buyers discount the asking price and assign an average price. Consequently pooling equilibrium comes to establish. This pooling equilibrium price is always a good deal for bad quality sellers and a bad deal for good quality sellers. Separation of pooling equilibrium is always in the best interests of good quality sellers to distinguish themselves from poor quality sellers and hence charge a price higher than pooling equilibrium price. Failing to separate pooling equilibrium may drive good quality out the market (Akerlof, 1970).

Ross (1977) signaling Hypothesis to a very greater extent is an extension of Akerlof model to financial decision making. All the companies operating in the market cannot be of same strength. There must be a differentiation of good and bad or strong and weak firms. Treating all the firms as a unified class leads to pooling equilibrium, which is of course is neither in the best interest of good firms nor uninformed potential investors. In the presence of asymmetric information it is difficult for outsiders to discriminate strong companies with bright future prospects than that of weak companies. Strong and weak firms both claim to have excellent growth opportunities and profitable future prospects. Thus there is a possibility that one will assign an average value to both due to asymmetric information and as a result pooling equilibrium would exist. In such circumstances managers of strong firms would try to convince outsider investors that their firm should be assigned a higher value, because they know and believe that their firms have superior future prospects ahead. Keeping this point in view managers of strong firms would employ a signal (by adopting a financial policy) that is affordable for them but really difficult for weak firms to mimic. Such a signal though carries a deadweight cost for the signaler but it conveys the superiority of signaler and overcome the information gap. One such credible signal can be introduction of huge debt to its capital structure. Weak firms cannot afford the deadweight costs of a large debt because they may fall into bankruptcy. Adopting a highly leveraged capital structure (which cannot be duplicated by weak firms) helps separate pooling equilibrium. Now investors in the market can differentiate strong firms and are able to assign higher values to highly leveraged companies. Another such signal may be payment of a huge dividend in the form of cash. A firm with a good reputation of cash dividend payment is expected to face less asymmetric information as compared to weak firms having no reputation of cash dividends (John & Williams, 1985; Miller & Rock, 1985). Agency models also suggest link between the leverage and dividend payment (Jensen et al., 1992). Agency models predict debt issue and dividend payment as an alternate to mitigating agency problems.

1.3.7.1 Empirical Evidence on Signaling Models

Signaling models of capital structure predicts that strong companies with high profitability should be highly levered, but the actual observed pattern of capital structure suggests that profitability and leverage is inversely related. Besides that companies having rich growth opportunities and other intangible assets face stern information asymmetry than mature companies with tangible assets. Hence according to signaling models such growing companies need to signal the market by employing more leverage. But empirical evidence shows that companies having tangible assets use more leverage than growing firms.

Besides its limitations signaling models very well explain the stock market reaction to different security issues. For example debt issues a positive signal and is greeted at stock market. Empirical evidence shows that new debt announcement increases stock market price. Market interprets issue of new equity as a negative signal and hence punished by the stock market. All the major studies show that stock market reacts positively to leverage increasing events (i.e. debt for equity swap or share repurchase through debt financing) by the companies and negatively to leverage decreasing events such as equity for debt swap or new equity offerings (James, 1987; Loughran & Ritter, 1995; Masulis, 1980).

Brealey, Leyland, and Pyle (1977) demonstrate a different version of signaling hypotheses. According to them an entrepreneur who seeks to avoid risk and finance a project will make use of both debt and equity. But only the entrepreneur knows about quality of the project to be undertaken. That is why he will use more equity due to two reasons. One to own a larger share ownership and hence will assume more risk. Second debt will be much more costly if he/she decides to raise more debt. Hence entrepreneur will definitely avoid it. This equity-debt combination will reduce cost of capital for the quality project to be financed.

1.3.8 Agency Costs

Agency Theory (Jensen & Meckling, 1976) views a firm as a lawful arrangements under which the conflicting interest and objectives of various stakeholders are balanced and resolved through a nexus of contracts. Different financial decisions may differently affect the interests of various stakeholders. Jensen and Meckling (1976) under agency relationship analyzed how some financial decisions violates the wealth maximizing criteria by benefiting some funds suppliers at the cost of others.

1.3.8.1 Agency Costs of Outside Equity

Entrepreneur of an all equity firm bears and reaps 100% of the associated costs and benefits of hi/her actions, because ownership and control both are centered in him/her. In case the entrepreneur decides to issue a 20% of equity to outside investors, separation of ownership and control occurs. Now the owner bears only 80% costs of his/her actions. Now the entrepreneur is in better position to use more perks. But this could only happen in uninformed capital markets. An informed investor anticipates that after issuing outside equity the tendency of the controlling shareholder to consume more perks may increase. The costs of consumption of perks by controlling shareholder will definitely be shouldered by the outside equity holder as well. To guard himself/herself from such costs, investor will discount the equity price in such a way that reflects the anticipated decline in firm's value. Thus the agency costs of issuing outside equity are born by controlling shareholder.

1.3.8.2 Excess Free Cash and Shifting the Capital Structure

In presence of anti-takeover mechanism and excess free cash managers may use the cash wastefully (Jensen, 1986). They may go for costly acquisitions, corporate jets and luxury, which is not in the best interests of different funds suppliers. One way to restrict managers is to reduce the free cash. Free cash can be reduced by paying high dividends to stockholders or stock repurchases from them. Another way to reduce free cash is to add a higher level of debt to capital structure. This can help make managers more vigilant about debt service and bankruptcy. In case of failure to service its debt company will be forced into financial distress and management will lose their jobs if firm goes bankrupt. According to Jensen and Meckling (1976) introducing debt to capital structure helps as a bonding mechanism and reduces the wasteful use of free cash. It's also conveys a signal to market that managers are confident and ready to face the adverse consequences in case of failure.

1.3.8.3 Financial Distress and Agency Costs of Outside Debt

Why maximum leverage cannot be employed by firms? The answer is that debt has its own agency costs. Bondholders cannot remain unquestioned about the intent of managers and shareholders. With increase in debt financing bondholders are shouldering much of operating and business risk, but control of firm's operating and investment decisions remain with management and shareholders. Thus in case of probable bankruptcy management may use this controlling authority to help themselves and shareholders by expropriating bondholders' wealth in the following manners.

i. Assets Expropriation

Management may raise debt to payout huge dividends to shareholders. In case of default shareholders have limited liability and bondholders can share only the empty shell (Kalay, 1982).

ii. Incentive to Take on Gambles

Sophisticated bondholders can guard themselves and can prevent management from taking highly risky projects. They can effectively use bond covenants. But naive investors are always there in the market. The controlling stakeholders of the firm can trap such inexperienced bondholders with the promise that their funds would be used to finance safe and less risky project. But management may take on corporate gambles by investing the funds in highly risky projects keeping "Head we won Tail you lose Principle" in mind. In case the project succeeds bondholders are repaid and additional returns go to shareholders. In case of failure the bondholders can share the empty shell of the firm.

iii. Underinvestment Problem

If shareholders and management think that bankruptcy is looming, then they have no incentive to invest even in positive NPV projects. As if the firm cannot be saved from going bankrupt, then investing in new projects would only help the prior claimants. In the aforementioned circumstances it seems that debt will be extremely costly and hence firm leverage ratios would be lower.

iv. Tradeoff between Agency Cost of Outside Debt and Equity

According to Jensen and Meckling model both equity and debt has its own agency costs. An optimal capital structure can be achieved at point where agency costs of debt exactly offset the agency cost of equity. Rajan and Zingales (1995) results and empirical findings are consistent with Jensen and Meckling's model.

1.3.9 Market Timing Theory

Empirical evidence reveals that seasoned equity issues, initial public offerings and stock repurchases decisions coincide with market valuations of the securities (Pagano, Panetta, & Zingales, 1998; Teoh, Welch, & Wong, 1998).

1.3.9.1 Seasoned Equity Issues

Taggart (1977) revealed that security issues depend on the changes in market values of equity and long term debt. Taggart reports that rectifying long term debt is a slow process. However liquid assets and deploying short term debt can definitely improve the speed of adjustment to target capital structure. Marsh (1982) supports Taggart's results by demonstrating that firm' decisions that affect capital structure depends on past price history and market conditions. Considerable empirical evidence reveals that seasoned equity issue has a direct relationship with high market valuation (Asquith & Mullins, 1986). Lucas and McDonald (1990) model to investigate firms' decisions regarding equity issues predicted that on average firms decide equity issue when stock prices are high. However after announcement of new equity issue the stock prices drops. Korajczyk, Lucas, and McDonald (1992) results are in line with the findings of their previous model. Empirical evidence also shows that firms issue seasoned equity in expansion phase of their business cycle, because firms in expansionary phase of their business cycle have more profitable investment opportunities, lower uncertainty about its assets and face lower costs of adverse selection measured as reaction in terms of averaged negative price (Choe, Masulis, & Nanda, 1993). According to Choe, Masulis, and Nanda (1993) contrary to interest rate variables, significant predictors of business cycle significantly predict seasoned equity issue. Jung, Kim, and Stulz (1996) also reported that seasoned equity issues results from high market valuations of securities. Bayless and Chaplinsky (1996) suggested that lower reaction to price in hot markets offers an opportunity for seasoned equity issue. Such a lower reaction to price results from lower costs of asymmetric information and does not depends on the macroeconomic variables of hot/cold markets. Baker and Wurgler (2000) argue that firms issue more equity in periods of high stock returns than debt.

1.3.9.2 Initial Public Offerings

Loughran, Ritter, and Rydqvist (1994) results suggest that firms time the market successfully by offering their securities in times of high valuation, but in long term investors get low returns. According to Pagano, Panetta, and Zingales (1998) with increase in firm's size and industry's market to book ratio probability of initial public offerings (IPO) increases.

1.3.9.3 Stock Repurchases

The presence of irrational investors in the market and time-varying mispricing or perception of mispricing creates window to time the market for equity issue or repurchase. According to Luigi and Sorin (2009) such opportunities are exploited by the firms to time the market. These results imply that firms may issue equity when cost of equity is either irrationally low or perceived to be low. Similarly management may decide to repurchase equity when cost of equity is either irrationally high or perceived to be high. Ikenberry, Lakonishok, and Vermaelen (1995) also confirm that open market repurchase decisions are mostly taken when market valuation of securities is low.

All the above discussion reveals that identification of market timing is very important for a firm to organize a proper financial structure. In a survey Graham and Harvey (2001) found that market timing drives the financing decisions of business executives. Nearly 66% of business executives have the opinion about the decision to issue equity that "the quantity through which our stock is overvalued or undervalued was an essential or very essential concern". Although most literature long before Baker and Wurgler (2002) supports the market timing hypothesis. In the light of available literature Baker and Wurgler (2002) introduced Market timing theory of capital structure. According to market timing theory firms issue equity when share price is performing well on the stock market or in other words when equity is overpriced or perceived to be overpriced in relation to historic past and repurchase equity when it is undervalued or perceived to be undervalued. According to this theory capital structure of firm results due to historic data and attempts to time the market, whenever it favors the firm.

The above discussion highlights that certain market considerations like tax exposure, risk of bankruptcy and agency issues etc are some of the compelling reasons that induce management to adjust capital structure as per requirement. Thus it is concluded that a specific theory works well under certain market condition but fails when management consideration changes.

1.4 Research Aims and Objectives

This research study aims to investigate the determinants of long and short term debt financing and explore how the impact of these determinants on debt ratios varies across countries of the world. Furthermore we also test the direct impact of different institutional features on average long term debt in the three economic blocks of countries. To attain the aim following are the formulated objectives of the study.

1. To determine important firm specific factors that influence long and short term debt ratios in developed, emerging and developing countries.

2. To compare the results and see how the impact of these factors on long term and short term debt vary across.

3. To know whether the observed capital structure patterns have any differences or parallels.

4. To know how country characteristics and institutional variables influence average long term debt ratios across three economic blocks of countries.

1.5 Significance of the Study

This study is significance in many aspects. First: We expand its scope not only to larger number of developed countries but emerging and developing countries of the world as well. Second: our study uses 09 key firms' specific and 06 country and institutional variables identified in light of previous literature to analyze the determinants of leverage. Third: We argue that if economic freedom reduces level of corruption and increases transparency as suggested in the literature (Graeff & Mehlkop, 2003; Paldam, 2002) then we expect that firms in transparent and less corrupt countries (with high economic freedom) would be more watchful and vigilant to bankruptcy due to transparency and accountability. Therefore economic freedom index as a country specific variable has been used for the first time. Fourth: Rajan and Zingales (1995) argue that some firms can trade credits as means of financing rather than transactions. Therefore this study bifurcates debt into long term and short term to investigate whether short term debt is also influenced by the same firm specific determinants as that of total and long term debt? If it is so they how? Fourth: The survivorship bias as mentioned by Rajan and Zingales (1995) has been addressed by excluding dead firms and only active firms whose data is available up to latest year (2016) of our data period.

1.6 Limitations of the Study

The main focus of this study is to simply make a comparison of the determinants of capital structure based on three different economic blocks (developed, emerging and developing), countries. We will definitely discuss the endorsements and predictions of different capital structure theories when it comes to results interpretations but our study is not focusing on testing of capital structure theories all along. This paper only tests the pattern of different country and firm specific data.

As the countries included in the sample of the study have different accounting practices, level of financial development with different legal and institutional set ups, therefore making analogous calculations is always a time consuming and costly endeavor. Hence a possibility of more comparable calculations cannot be ruled out.

We mostly focus on firms' specific characteristics to see how these variables differ across economic blocks, countries. As this study attempts to make cross country comparison but only few country specific variables out of a large set have been included in the analysis for simplicity and idea surfacing purpose.

The importance of off-balance sheet items such as lease agreements, investments in joint affiliates and ventures, pension liabilities & assets and special purpose vehicles can never be straight away ignored. Due to time, cost and effort limitations, off-balance sheet items have not been included in the analysis.

Firms in sectors like banking, financial services, life and non life insurances, equity and non equity investment instruments, real estate investment instruments and trusts, unclassified and unquoted firms have been excluded from the sample.

1.7 Scheme of the Study

This dissertation comprises of five chapters. Chapter one discusses the background, research questions, objectives, theoretical framework and significance of the study. Chapter two is about key literature and development of different hypotheses. Sample, data collection aspects and methodology have been covered and discussed in chapter three of the study. Chapter four is about data analysis and results. Chapter five discusses findings, conclusions and future possibilities of extension.

Chapter 2

Literature Review

Prior research studies (Bancel & Mittoo, 2004; Brounen, De Jong, & Koedijk, 2006; DeAngelo & Masulis, 1980; Deesomsak, Paudyal, & Pescetto, 2004; De Jong et al., 2008; Fama & French, 2002; Fan, Titman, & Twite, 2012; Frank & Goyal, 2009; Gaud et al., 2005; Hovakimian & Li, 2011; Lemmon et al., 2008; Myers, 1977; Oztekin, 2015; Rajan & Zingales, 1995; Serghiescu & Vaidean, 2014) have documented a number of key firms' attributes and institutional factors that explain the choice of leverage across countries. Based on prior literature this study analyzes the following firms' related factors and country's specific characteristics.

2.1 Firm Specific Attributes

In the light of literature, this dissertation focuses on the following 09 firm's internal attributes and their impact on long and short term debt ratios.

2.1.1 Non-Debt Tax Shields (NDTS)

Interest may be considered as a government tax subsidy in the form of interest tax shield. But interest expense is not the only expense that shields corporate income from taxes. There are other expenses that can also shelter income and can effectively reduce corporate income tax base. The tax benefit caused by source/expense other than interest such as tax loss carry forward, research and development expenditure, investments tax credits and depreciation etc are known as non-debt tax shields. According to trade-off theory capital structure of a firm is a resultant of trade off between tax advantage of debt and debt associated agency costs resulting from high debt ratios. What if a firm could shelter their income by using other available sources/expenses other than debt? This is another tax based extension to the discussion of capital structure.

According to tax substitution hypotheses (DeAngelo & Masulis, 1980) expenses such as R&D expenditure, depreciation, investment tax credits etc work as substitutes to interest expense and can effectively shelter income from taxes. Therefore theoretically the relationship between leverage and non-debt tax shields is expected to be negative. Thus firms with large non-debt tax-shields are likely to be less leveraged than firms with fewer such shields. In other words if it is assumed that firms have a choice to opt for tax shield either trough debt or non-debt shields, then theoretically firms should opt for tax shield trough non-debt sources. Many theoretical and empirical studies (Akhtar & Oliver, 2009; Allen, 1995; Bowen, Daley, & Huber, 1982; Cloyd, Limberg, & Robinson, 1997; Deesomsak et al., 2004; Flannery & Rangan, 2006; Huang, 2006; Kim & Sorensen, 1986; Ozkan, 2001; Sayılgan, Karabacak, & Kucukkocaoglu, 2006; Wald, 1999; Wiwattanakantang, 1999; Yang, Albaity, & Hassan, 2015) support that optimal level of leverage decreases as Non debt tax shield increases.

However most proxies of non debt tax shields may closely correlate with assets tangibility and according to Scott (1979) firms having tangible assets can borrow at reasonably lower rates. Thus such firms with assets having collateral value can employ more debt in capital structure. Bradley, Jarrell, and Kim (1984) in contradiction with tax substation hypotheses found that non debt tax shield increases financial leverage of firm. Many previous studies (e.g. Barclay et al., 1995; Chaplinsky & Niehaus, 1993; Chang et al., 2009; Harris & Raviv, 1991; Kester, 1986) endorse these results.

We argue that if capital structure is a resultant of trade off between tax advantage of debt (interest tax shield) and debt associated costs (bankruptcy) then a firm having enough non debt tax shield should restrict borrowing, because firm can get the same benefit without any increase in probability of financial distress. Thus we hypothesize that

H_1***: Non debt tax shield has negative impact on debt ratios.***

2.1.2 Asset Structure/Tangibility (TANG)

In line with both trade-off and agency cost theory tangible assets can be pledged as a guarantee to reduce cost of financial distress and other agency cost of debt. Therefore both theories expect financial leverage to have positive relationship with assets tangibility.

Scott (1979) reports that management can increase equity value by transferring wealth from creditors by means of issuing collateralized debt. To reduce agency cost such as monitoring cost high debt level can be employed as a device to mitigate managers make suboptimal decisions. In the presence of information asymmetry and agency costs of debt, firm may use high level of secured debt to overcome agency problems and information asymmetry (Myers & Majluf, 1984). The problem of asset substitution can be reduced by collateralization of fixed assets (Johnson, 1997; Stulz & Johnson, 1985). As a bonding mechanism, bondholders can restrict the firm by imposing either positive or negative covenants. But such restrictions through covenants may not always be in the best interest of the firm. In such circumstances the better way for firm to convince creditors is to offer fixed assets as a real guarantee (Padron et al., 2005).

Tangible assets can be redeployed or easily liquidated. Therefore tangible assets (such as land and building etc) have the potency to serve as good collateral to external borrowings. This in turn can reduce risk of lender due to reduction in the agency cost of debt, information asymmetry and moral hazards and increase firm liquidation value. Therefore firms with a large fraction of tangible assets are expected to get more debt financing at lower rate of interest or other favorable terms. On the other hand intangible assets such as good will and knowledge capital etc are difficult for outsiders to value (Frank & Goyal. 2009). Voluminous prior theoretical and empirical studies (Akhtar & Oliver, 2009; Alipour, Mohammadi, &

Derakhshan, 2015; Bevan & Danbolt, 2002; Chen, 2004; Delcoure, 2007; De Jong et al., 2008; Fama & French, 2002; Frank & Goyal, 2009; Flannery & Rangan, 2006; Gaud et al., 2005; Hirota, 1999; Hovakimian & Li, 2011; Huang, 2006; Jordon et al., 1998; Kremp, Stoss & Gerdesmeier, 1999; Lemmon et al., 2008; Long & Malitz, 1985; Marsh, 1982; Michaelas et al., 1999; Shyam-Sunder & Myers, 1999; Sheony & Koch, 1996; Supanvanij, 2006; Titman & Wessels, 1988; Wald, 1999; Wijist & Thurik, 1993) confirm these theoretical predictions by reporting positive leverage-tangibility relationship. Antonoiu, Guney, and Paudyal (2002) report a mixed leverage-tangibility relationship being significant positive in Germany, negative in UK and insignificant for France. Booth et al. (2001) report that increase in asset tangibility increases long term debt ratio but causes decrease in total debt.

On the other hand negative leverage-tangibility relationship is consistent with pecking order hypotheses. Firms having larger fraction of tangible assets face less information asymmetry (Harris & Raviv, 1991). Thus equity for such firms is not difficult to rise. A positive relationship between leverage and non-debt tax shield implies the same prediction of pecking order as reported by Bradley, Jarrel, and Kim (1984). According to Deesomsak et al. (2004) companies with higher tangible assets face lower information asymmetry problems than otherwise firms. Hence such firms with low information asymmetries can easily issue equity shares. Hence leverage- tangibility is expected to be negatively associated.

Adventurous top management of highly indebted firms may invest in high risky projects to play "Head We Win, Tail You Lose" game. Because there is incentive to take gambles at creditors' money. Such suboptimal decisions causes transfer of wealth from bondholders to shareholders. It seems that this type of incentives may induce firms to make use of tangible assets to secure more debt financing. But it is unlikely to use collateralized debt for risky projects. Borrower can use the collateralized funds only for specified projects. Hence wealth transfer incentive cannot be cheaply achieved. As a result firms may employ equity and avoid debt (Galai & Masulis, 1976; Jensen & Meckling, 1976; Myers, 1977).

Grossman and Hart (1982) report that higher debt level decreases inclination of managers to make suboptimal use of corporate wealth, because of the increased threat of bankruptcy. Management will be compelled to reduce excessive consumption of perks due to monitoring of creditors. In such circumstances only firms with fewer tangible assets will go for higher leverage. The reason is agency costs for them will be high and monitoring will effectively reduce wasteful management behavior. On the other hand the bondholders monitoring will not be that much effective for firms with more collateralized assets, because bondholders' debt is secured. Therefore it is expected to have a negative relationship between debt and tangible assets. Karacaer, Temizb, and Gulecc (2016) recent results also show negative leverage-tangibility coefficient.

In the light of above literature, as tangible assets are good collateral of debt therefore according to trade off firms with more such assets should employ more debt. Hence we hypothesize that

H_2***: Assets Tangibility has a positive relationship with debt ratios.***

2.1.3 Uniqueness of Product (UNIQ)

Firms that produce specialized and unique products go bankrupt, such firms and its stakeholders (workers, suppliers and customers) suffer higher costs. Titman (1984) model shows that such costs are relevant to firms' capital structure decisions.

According to Titman and Wessels (1988) firms that deal in specialized products protect their specialized assets and are expected to have lower financial leverage in their capital structures. Because labors in such industries are highly specialized with job specific skills and costs are high in case of financial distress. Frank and Goyal (2009) in line with stakeholder co-investment theory suggest that firms that deals in unique products spends more on research and development and selling, general and administrative activities. Therefore such firms are expected to use less debt. Based on the above discussion, we argue that if costs of financial distress are higher for unique firms then such firms should avoid higher financial leverage. Thus our hypothesis under trade off

H_3***: Product uniqueness has a negative relationship with debt ratios.***

2.1.4 Firm's Size (SIZE)

Like many other determinants of financial leverage the leverage-size relationship is contradictory from different theoretical perspectives. Trade-off theory suggests that firms large in size are expected to use higher level of financial leverage. Ang, Chua, and McConnell (1982) suggest that portion of direct costs of bankruptcy decrease as size of the firm increases. Such firms have the ability to form diversified portfolios and lower their risk of bankruptcy. Hence large firms can afford higher level of debt in their capital structures (Titman & Wessels, 1988). In line with agency theory Friend and Land (1988) suggest that large firms with diversified ownership have less control over management. Therefore management may issue debt to minimize their personal losses in case of financial distress. Larger firms have the advantage of economies of scale along with bargaining power with lenders. Therefore such firms bear lower issuing cost of debt and equity (Michaelas et al., 1999). Large firms are mature and expected to have stable cash flows with low volatility (Graham, Lemmon, & Schallheim, 1998; Gaud et al., 2005; Wiwattanakantang, 1999). Big firms face low probability of financial distress and low information asymmetry by providing more disclosures (Fama & Jensen, 1983; Padron et al., 2005). Lower degree of information asymmetry and lower probability of financial distress may benefit larger firms by easing their access to debt market at lower cost. Consequently larger firms can afford high debt levels in their capital structure.

Based on their attributes like diversification, stable cash flows, lower degree of information asymmetry, lower probability of financial distress and easier access to credit markets large firms are expected to employ higher debt. A number of prior research studies (Agrawal & Nagarajan, 1990; Akhtar & Oliver, 2009; Alves & Ferreira, 2011; Baker & Wurgler, 2002; Bevan & Danbolt, 2002; Berger et. al., 1997; Buferna et al., 2005; Cwynar, Cwynar & Dankiewicz, 2015; Fama & French, 2002; Frank & Goyal, 2009; Gaud, et al., 2005; Harris & Raviv, 1991; Hovakimian & Li, 2011; Jong et al., 2008; Karacaer et al., 2016; Lemmon et al., 2008; Rajan & Zingales, 1995; Shyam-Sunder & Myers, 1999; Supanvanij, 2006; Wald, 1999) report positive relationship between leverage and size.

However Kester, (1986) and Kim and Sorensen, (1986) suggests that larger firms face lower degree of information asymmetry hence such firms may issue equity instead of debt. Negative size-leverage relationship is consistent with the predictions of pecking order hypothesis.

Literature suggests that larger firms generally have more potential to minimize chances of financial distress due to diversification. Hence size-debt relationship under the lens of trade off is hypothesize as

H_4***: Size of the firm has positive relationship with debt ratios.***

2.1.5 Earning Volatility (EVOL)

Volatility of a firm's earnings also termed as business risk is a measure of the probability of financial distress. A firm with more volatile earnings has a higher level of business risk. Debt requires the commitment of periodic payments to service it. Companies with higher volatility in earnings have the risk that earnings would fall below the commitment of debt service and as a consequence firms may find itself compelled to pay its debt by arranging costly funds or may find themselves go bankrupt. To avoid such situation firms would prefer the choice of equity and will avoid borrowings when faced with the choices of external financing.

In case of zero costs of bankruptcy, variance of earnings has nothing to do with debt to equity ratio of a firm (Scott, 1979). In case of positive bankruptcy costs unique debt to equity ratios can be seen (Kim, 1978; Scott, 1979). Castanias (1983) reports that in case of zero costs of financial distress firms may issue debt even higher rates of interests would not restrict the level of leverage employed by a firm. However if costs of financial distress are non zero, then larger costs of financial distress may restrict the debt issuance. Consequently, it is generally expected that earning volatility would compel managers to restrict the component of debt in their capital structure.

According to trade-off theory if financial leverage increases beyond a certain level, the risk of financial distress increases and the benefit of tax shields diminish. Hence Trade-off predicts that increase in earnings volatility or business risk would push indebted firms into financial distress. Therefore firms having higher variations in their earnings or cash flows are expected to employ low financial leverage.

Higher earnings volatility or risk would increase the agency costs of debt in the form of monitoring and debt covenants which is expected to result in lower debt ratios for risky firms. Negative leverage-risk relationship is also consistent with agency cost theory. In agreement with trade off theory prior literature (Booth et al., 2001; Bradley et al., 1984; Castanias, 1983; Deloof & Verschueren, 1998; Fama & French, 2002; Friend & Lang, 1988; Frank & Goyal; 2009; Handoo & Sharma, 2014; Harris & Raviv, 1991; Karacaer et al, 2016; Lemmon et al., 2008; Long & Malitz, 1985; Marsh, 1982) confirm negative risk-leverage relationship. Keefe and Yaghoubi (2016) report that firms uses less and short maturity debt in case of high cash flows' volatility.

According to Hsiao (1981) if the variance or standard deviation in a firm's asset increases then systematic risk of firm's equity should also increase and thus business risk may tend to be positively related to the leverage of a firm. Burgman (1996) suggests that risk increases information asymmetry faced by firms. To overcome such asymmetries firms may use debt as a signaling mechanism. Hence positive relationship cannot be straight away ruled out. Negative leverage-risk relationship can be reversed due to wealth transfer incentives of the management (Boyle & Eckhold, 1997). According to Boyle and Eckhold (1997) a firm with volatile earnings may excessively use debt to take on risky projects. In case of success shareholders enjoys the benefits otherwise bondholders suffer. Though considerable empirical research shows a negative association of leverage and volatility, however due to presence of agency factors such as wealth transfer effect can reverse this relationship. Many other empirical studies (Bennet & Donnelly, 1993; Huang, 2006; Kim & Sorensen, 1986; MacKie-Mason, 1990; Nguyen & Ramachandran, 2006) confirm these findings by reporting positive leverage-volatility association. Frank and Goyal (2009) suggest that uncertain beliefs about stocks exhibit higher volatility. Such firms are expected to suffer from adverse selection and pecking order may predict higher leverage in case of such firms.

In the light of above literature we argue that financial leverage would increase firm's risk of bankruptcy even further if earning volatility is already higher. Therefore based on trade off, firms with higher business risk are expected to restrict level of debt. Thus we expect

H_5***: Earning Volatility has negative influence on debt ratios.***

2.1.6 Growth Opportunities (GROW)

According to Agency costs theory (Jensen & Meckling, 1976; Jensen, 1986) and growth firms have incentive to invest in risky projects to transfer bondholder's wealth to shareholders at creditor's risk. Trying to avoid such conflicts and its associated costs growth firms are expected to make less use of long term debt. Myers (1977) refers growth opportunities of a firm as call option on real assets. The value of such options depends whether firms tape them in future by investing in it or otherwise. Firms that have risky debt outstanding will forgo profitable growth opportunities that could have contribute to the value of the firm. In case firm relinquishes future growth opportunities due to sub optimal investment strategy this would definitely result in decrease of the value of its real options. In agreement with agency cost theory Myers (1977) suggests that firms with growth opportunities are expected to rely less on leverage and great on equity. However short term debt can be used to overcome agency costs of long term debt, hence short term debt financing is expecting to have positive correlation with firm's growth. Bradley et al. (1984) by introducing the costs of financial distress in the model revealed that despite the fact that opportunities for growth are capital assets which increases value of a firm, but the presence of costs of bankruptcy will increase with the increase in such opportunities. Consequently firms may avoid higher leverage ratios. Bradley et al. (1984) results are in agreement with Trade-off theory.

Growth prospects of firms are intangible and have no value as collateral for debt. Such firms with future growth opportunities may face significant difficulties to raise capital from debt market. Besides that due to wealth expropriation and its associated costs growing firms are less leveraged financially and are expected to substitute short term debt for long term debt (Barclay & Smith, 2005; Delcoure, 2007; Titman & Wessels, 1988;). Rajan and Zingales (1995) also suggests that firms with high MB ratios have higher costs of bankruptcy therefore a negative leverage-growth relationship is expected.

Negative leverage-growth relationship is consistent with both trade-off theory and agency theory. A number of studies (Akhtar & Oliver, 2009; Allen, 1995; Antoniou et al., 2002; Antoniou et al., 2008; Barclay, Smith, & Watts, 1995; Barclay & Smith, 1999; Baker & Wurgler, 2002; Bevan & Danbolt, 2004; Booth et al., 2001; Chung, 1993; Frank & Goyal, 2009; Gaud et al., 2005; Harris & Raviv, 1991; Handoo & Sharman, 2014; Hovakimian & Li, 2011; Huang, 2006; Jong, et al., 2008; Karacaer et al,, 2016; Kim & Sorensen, 1986; Lasfer, 1995; Lemmon et al., 2008; Long & Malitz, 1985; Ooi, 1999; Ozkan, 2001; Padron et al., 2005; Rajan & Zingales, 1995; Sheikh & Wang, 2011; Shyam-Sunder & Myers, 1999; Smith & Watts, 1992; Titman & Wessels, 1988) confirm the aforementioned theoretical and empirical results. Song (2005) analyzed the determinants of leverage in Swedish firms and concluded that assets growth has no significant potency to determine financial leverage.

However Chen (2004); Feidakis and Rovolis (2007); Filsaraei, Zarifian, and Naghizade (2016); Hijazi and Tariq (2006); Kester (1986); Michaelas et al. (1999); Wald (1999) suggest a positive relationship between growth opportunities and leverage of a firm. Sayilgan, Karabacak, and Kucukkocaoglu (2006) report positive relation between leverage and growth in total assets and negative relationship between leverage and growth in plant and property. There could be much plausible explanation about positive leverage-growth relationship. For example information asymmetry could be greater for growth firms. To avoid costs of information asymmetry firms would use less value-sensitive instrument like debt than equity as Pecking order suggests. A second explanation again based on pecking order may be that growth firms cannot accumulate that much internal equity to finance growth, as a second resort they may employ debt. Another rationale for positive leverage-growth relationship may be measurement of growth attribute (like sales growth) of a firm and its possible sensitivity with short term debt.

Based on trade off, we argue that growth firms are expected to be less mature and have relatively less market outreach than larger firms, hence cost of financial distress for growing firms are expected to be higher than mature firms. Therefore based on theoretical prediction of trade off, we hypothesize

H_6***: Growth has a negative impact on debt ratios.***

2.1.7 Profitability (PROF)

Internal funds are the least risky option for managers. Information asymmetry makes issuing debt or new equity costly. Managers of profitable firms are in good position to accumulate internal funds trough retained earnings. Such funds generated through internal means can be utilized when need arise. In line with Pecking order of financing preference managers will use its least risky options (internally accumulated funds) first, debt as a second least risky priority and risky instruments like equity would be issued as a last option at hand (Myers, 1984). Consistent with pecking order voluminous empirical evidence (Allen, 1991; Alves & Ferreira, 2011; Akhtar & Oliver, 2009; Amihud, Lev & Travlos 1990; Antoniou et al., 2002; Bevan and Danbolt, 2004; Booth et al., 2001; Chaplinsky & Niehaus, 1993; Chen, 2004; Chang, Lee & Lee, 2009; Cwynar, Cwynar, & Dankiewicz, 2015; Delcoure, 2007; Fama & French, 2002; Flannery & Rangan, 2006; Feidakis & Rovolis, 2007; Forte, Barros, & Nakamura; 2013; Friend & Lang, 1988; Frank & Goyal, 2009; Gaud et al., 2005; Harris & Raviv, 1991; Handoo & Sharma, 2014; Hovakimian & Li, 2011; Jong et al., 2008; Karacaer et al., 2016; Kester, 1986; Kim & Berger, 2008; Lemmon et al., 2008; Michaelas et al., 1999; Poitevin, 1989; Ravid & Sarig, 1991; Rajan & Zingales, 1995; Sayılgan et al., 2006; Shyam-Sunder & Myers, 1999; Supanvanij, 2006; Titman & Wessels, 1988; Voulgaris et al., 2004; Wald, 1999) suggest that highly profitable firms would make less use of debt to avoid costs of information asymmetry and issuing outside capital.

According to Fischer, Heinkel, and Zechner (1989) in a dynamic setting Tradeoff theory where adjustment to a target capital structure is costly suggest a negative relationship between profitability and leverage ratios. It is because firms cannot constantly rebalance its capital structures due to transaction costs. Kayhan and Titman (2007) confirm the predictions of dynamic tradeoff under costly adjustment assumptions.

However many theoretical and empirical studies pitch some plausible explanations for positive leverage profitability relationship. Highly profitable firms face low chances/costs of financial distress. Hence based on static trade-off theory profitable firms would try to protect their profits from corporate taxes to get higher tax advantages by employing high level of leverage (Buferna et al., 2005; Frank & Goyal. 2009; Long & Malitz, 1988). Furthermore in line with trade-off Fama and French (2005) report that low earning firms may restrict debt due to increase in bankruptcy costs.

A second plausible explanation about positive leverage-profitability relationship is free cash flow hypotheses. A best case scenario develops for wasteful managers when there is large free cash and no/low chances of take over. In such situation management of highly profitable firms may fearlessly engage in wasteful spending. Profitable companies facing free cash problem will introduce high level of leverage to their capital structure in order to bond idle cash to debt service and discipline reckless management spending (Jensen, 1986). Hart and Moore (1995) support Jensen results. A third explanation about positive leverage-profitability relationship may be highly profitable firms want to separate pooling equilibrium with quality signal. Deesomsak et al., (2004) suggest that highly profitable firms may employ high level of debt to their capital structures to avoid dilution of ownership by issuing new equity.

Profitable firms have low probability of financial distress than non profitable counterparts. Then based on trade off, profitable firms should borrow more to shield profit from taxes. Therefore we hypothesize

H_7***: Profit has a positive effect on debt ratios.***

2.1.8 Liquidity (LIQD)

According to Williamson (1988) a firm having more liquid and redeployable assets may use higher level of financial leverage, because such assets are easily monitored and liquidated. Harris and Raviv (1990) reveal that bondholders use debt to asses a company's ability of making interest payments at different levels of leverage. With the increase in liquid assets risk of default also decreases and bondholders try to inject more debt to know firms' ability of making periodic interests payments. Hence firms with high liquidity are expected to use higher leverage. Liquid assets can be liquidated quickly and easily without much discount from their fair values. Therefore firms with more liquid assets face lower costs of financial distress as compared to firms having illiquid assets. Hence managers having more liquid assets on the balance sheet are expected to have higher leverage ratios (Shleifer & Vishny, 1992). The positive leverage-liquidity relationship is consistent with trade-off because more liquid assets mean low risk of bankruptcy (Harris & Raviv, 1990; Shleifer & Vishny, 1992). Feidakis and Rovolis (2007) in line with trade-off found positive long term debt-liquidity relationship.

However Pecking order theory expects managers to accumulate liquid reserves using retained earnings to finance growth internally and avoid costs of information asymmetry and issuing new capital. Consistent with pecking order perditions Ozkan (2001) found inverse association of leverage and liquidity. In the presence of information asymmetry, cost of issuing new equity increases. Antoniou et al. (2002) report negative leverage-liquidity relationship for market based economy like United Kingdom, but the same is insignificant for bank based countries like France and Germany. They suggest that managers in market based economies may prefer to make use of firm's liquidity. Thus a negative leverage-liquidity relationship is expected more likely in market based economies. Firms in bank based economies maintain a close relationship with banks. Hence such firms seem not be bothered by costs of information asymmetries. Sheikh (2015) reports negative total and short term debt association with firm's liquidity. In line with Pecking order predictions various theoretical and empirical studies (Anthony & Odunayo, 2015; Deesomsak et al., 2004; Karacaer et al., 2016; Niu, 2009; Serghiescu &

Vaidean, 2014; Srivastava, 2014; Yang, Albaity, & Hassan, 2015) report negative leverage-liquidity relationship.

Firms with more liquid assets face lower costs of bankruptcy therefore according to trade off highly liquid may afford higher financial leverage. In line with trade-off, we hypothesize that

H_8***: Liquidity affects debt ratios in a significant positive manner.***

2.1.9 Dividend Payout (DIVP)

According to dividend irrelevance dividend policy has no potency to increase or decrease either value or cost of capital of a firm provided certain assumptions hold true (Miller & Modigliani, 1961). However bird in hand theory suggests that investor prefer cash dividends more than future gains as a result the perceived riskiness of dividend paying firms decreases. Consequently required rate of return for dividend paying stocks decreases (Gordon, 1963; Lintner, 1962). Investors are expected to prefer cash dividends more than capital gains only if cash dividends are taxed favorably than capital gains. However if capital gain tax is lower than tax on cash dividends, then shareholders of high dividend payers will demand higher required rate of return. This higher required rate of return will increase the cost of equity. Hence firms will be expected to use more debt than equity (Boyle & Eckhold, 1997). Agency models also suggest link between the leverage and dividend payment (Jensen et al., 1992). Agency models predict debt issue and dividend payment as an alternate to mitigating agency problems.

A firm with a good reputation of cash dividend payment is expected to faces less asymmetric information as compared to weak firms having no reputation of cash dividends (John & Williams, 1985; Miller & Rock, 1985). Hence using its good image and repute firms may access credit market at favorable terms. Consequently such firm may make more use of debt financing. Chang and Rhee (1990) suggest a positive relationship between leverage and dividend payout ratios. Lee and Xing (2004) suggest that firms may issue debt to transfer it to shareholders by paying dividends. Chen, Jian, and Xu, (2009) suggest positive leverage-divided relationship, because firms may use dividends as means of profit channeling to shareholders. Frank and Goyal (2003) suggest that cash dividends are positively related to net debt issues and negatively related to gross debt issues. These predictions are consistent with trade-off theory which predicts a positive relationship between debt and dividends. However Frank and Goyal (2009) report a negative relationship between leverage and dividends. Yang, Albaity, and Hashim (2015) also report negative significant relation between dividend per share and debt ratios in Chinese firms.

Mostly profitable and mature firms are expected to have higher dividend payouts than growing firms (Gaver & Gaver, 1993; Smith & Watts, 1992). As profitable (dividend paying) firms are less vulnerable to financial distress then according to trade off, dividend paying firms are expected to afford more long term leverage. Thus we hypothesize that

H_9***: Dividend payout per share has a positive impact on debt ratios.***

2.2 Country Characteristics

A careful review of existing literature reveals that there exist some strong stylized national patterns in financing choice of firms. One reason may be countries across the globe have their own historical, cultural, legal, financial, institutional and macroeconomic set ups. These national patterns observed worldwide may be attributed to various national attributes. For instance banks and capital markets across different countries have different levels of development. Such differences may be investigated as potent for cross-sectional differences among financing decisions of firms. Wald (1999) investigation of significant factors that correlate with leverage revealed significant difference across countries. These significant differences were attributed to differences in agency costs and tax policies across countries. Wald (1999) suggests that institutional and legal differences across countries may cause varying choices of leverage. Prior studies (Agarwal & Mohtadi, 2004; Booth et al., 2001; Claessens, Djankov, & Nenova, 2001; Chen, 2004; Doukas & Pantzalis, 2003; Fernandes, 2011; Fauver et al., 2003; Frank & Goyal, 2009; La Porta et al.,

1998) all agree that legal, financial, institutional and macroeconomic differences among countries affect financing decisions of the firms.

To capture these national attribute we use 06 country characteristics and institutional factors such as integrity of legal system and its enforcement (LEGL), corruption perception in public (CPPI), economic freedom (ECOF) and financial development measured by three proxies banking sector activity (BSAT), capital market activity (CMAT) and bond market activity (BMAT)) in our analysis.

2.2.1 Integrity of Legal System and its Enforcement (LEGL)

Legal system is an important aspect of the overall institutional setup of a country. According to Nicholson (1998) *Homo sapiens* by instinct are hardwired. According to evolutionary psychology people even today exhibit traits like fighting, trading information and sharing secrets for their survival. This implies that people by instinct seek more discretionary powers and greater autonomy. They exhibit to somewhat selfish behavior to make their survival possible may be at the costs of other people's interests. That is why an individual can be taken out of stone age but stone age can never be taken out (Nicholoson, 1998). It is the legal system of a country that disciplines, outlines discretion, decision making power and autonomy of individuals and institutions. A strong protective legal system can help reduce/resolve problems and conflicts between insiders and creditors. It can enforce contractual obligations and can help resolve different conflicts among corporate insiders and external creditors. According to La Porta et al. (1998) the extent of legal protection in a country decides the governance, financing and ownership pattern in a country. They report that common law countries offer strongest protection from legal point of view to outside shareholders and creditors followed by Scandinavian and German civil law. Countries with French civil laws offer the weakest legal protection to investors. Firms in countries where legal system is fragile and writ of the government and law enforcement is weak are expected to make more use of short term debt financings as suggested by La Porta et al. (1998). Firms make more use of long term debt in countries having fine legal integrity (Demirguc-Kunt & Maksimovic, 1999). In line with La Porta et al. (1998), Fan et al. (2012) found that firms use higher debt especially short term debt in countries where law enforcement is weak.

Better legal protection for creditors may possibly increase firm's perceived risk of bankruptcy due to legal fear and stringent debt contracts (De Jong et al., 2008). This implies that better legal system make debt seemingly riskier for firms. We argue that better overall legal system and enforcement means that bankruptcy laws can be enforced more effectively. Hence firms are expected to be more cautious about debt. Hence based on trade off leverage level should be restricted. Thus we expect

H_{10}***: Legal integrity and enforcement has negative impact on average long term debt.***

2.2.2 Corruption Perception in Public (CPPI)

Corruption is the use of public position to gain personal privileges (Fan et al., 2012). Higher level of corruption and lack of transparency in a country means weaker intuitional setups. Weak institutions mean less decision making in the public interest. In such scenario powerful people get more powerful by stealing resources from the vulnerable. This undermines social and economic justice and public trust is destroyed (Transparency International, 2013). Fan et al. (2012) report firms in more corrupt countries use more short term debt.

If according to De Jong et al. (2008) better legal protections of creditors increase the perceived risk of bankruptcy due to legal fear, then we expect corruption would make firms careless about bankruptcy. Hence based on trade off leverage level should be aggressively employed. Based on these lines and also in accordance with Fan et al. (2012), we hypothesize that

H_{11}***: Perceived Corruption Index has a positive impact on average long term leverage.***

2.2.3 Economic Freedom (ECOF)

The Heritage Foundation define economic freedom as a fundamental human right under which one controls his/her own property and labor. The true essence of economic freedom implies that Government or any other authority cannot restrict labor, goods or capital from free movement. In other words the economic freedom means liberty to work, invest, produce and consume without coercion.

Economic freedom most often been associated with development, prosperity, economic growth, transparency and healthier social norms. Economic freedom has been investigated from the perspective of corruption and social capital (Jackson, Carden, & Compton, 2015). Paldam, (2002) suggests that economic freedom reduces corruption. Graeff and Mehlkop (2003) in agreement with Paldam (2002), report that more economic freedom reduces level of corruption in a country. We argue that if economic freedom reduces level of corruption and increase transparency as suggested by above cited literature, then we expect that firms in transparent and less corrupt countries (with high economic freedom) would be more watchful and vigilant to bankruptcy due to transparency and accountability. More vigilance to bankruptcy means firms would avoid higher levels of financial leverage. Therefore based on trade off

H_{12}***: Higher economic freedom index has a negative impact on average long term debt.***

2.2.4 Financial Development

The reliance of firms for external financing is not similar across the globe due to apparently different corporate financial systems (Allen & Gale, 1999; Easterbrook, 1984; Fama & Jensen, 1983; Prowse, 1992). Some countries are more relied on banks than capital markets for financing For instance United States, Germany and Japan are all successful democratic, developed and capitalist economies. Yet they have different corporate financial systems. Countries like United States, United Kingdom and Canada are commonly associated with Capital Market based Corporate Financial Systems or Open Corporate Model. This particular financial system mostly relies on strong capital markets than banks and financial intermediaries for external financing. Corporate financial system like in Germany, Italy, France, and Spain is regarded as Financial Intermediary based Corporate Financial System or Closed Corporate Model. Such system heavily relies on strong commercial banks for financing. Similarly corporate financing model of Korea and Japan is regarded as Industrial Group based Corporate Financial System. Industrial group based model has its foundation on alliances of large forwardly and backwardly integrated manufacturing companies and strong banks. In such groups most finances come from banks (Megginson, 1997).

Based on different corporate financial structure/market orientations discussed above, observed patterns of debt choice show some distinctive national patterns and crossectional variations (Frankel, 1991; Kester, 1992; Prowse, 1990). For example, firms in developed countries like Japan, Italy, France and some other EU countries use higher average book value of debt than their developed counterparts like Australia, Britain, Canada, Germany and United States. In a similar fashion firms in developing countries like Pakistan and India use higher leverage ratios than newly industrialized countries like Chile, Malaysia, Mexico and Singapore (Booth et al., 2001; Rajan & Zingales, 1995; Rutterford, 1988).

Apart from different market orientation, difference in level of economic development may also be suspected for crossectional variation of debt ratios across countries. For instance countries with the same market orientations may have different level of economic development. According to Myers (1989) difference in level of development of banks and financial markets can also impact the financing decisions of firms. Rajan and Zingales (2001) report that development of financial systems may cause access to debt market easier for some industries. They further suggest that need for physical collateral decreases as the level of financial development increases. Hence firms are expected to employ more debt. Demirguc-Kunt and Maksimovic (1996) report a direct relationship between leverage and banks' development level in contrast to negative relationship between development level of stock market and leverage. Fauver et al. (2003) also report accessibility to external capital depends on the development of financial structure of a country. Giannetti

(2003) reports significant influence of stock market development on leverage decisions in European countries. Jong et al. (2008) report firms borrow more in countries where bond market is more developed.

Keeping the aforementioned in view this study questions the level of financial development and its direct influence on average long term debt financing. We use three different variables (banking sector, bond market and stock market development) for level of financial development. We use ratio of percentage of private credit by deposit money banks to gross domestic product as an indicator banking sector development (BSAT) and in line with Demirguc-Kunt and Maksimovic (1996) findings, we expect

H_{13}***: Ratio of private credit by deposit money banks to GDP has positive impact on average long term debt.***

De Jong et al. (2008) report that development of stock market encourages usage of equity hence usage of debt is expected to decline. Using ratio of percentage of total value traded at stock market to gross domestic product as a proxy for stock market development (CMAT), we hypothesize

H_{14}***: Ratio of total value traded at stock market to GDP has negative impact on average long term debt.***

De Jong et al. (2008) also suggest that development of bond market provides more borrowing options and increases firms' willingness to borrow. Using ratio of volume of new corporate bond issued by private entities (excluding financial, holding and insurance firms) in relation to the size of the economy as a proxy for bond market development (BMAT), we expect

H_{15}***: Ratio of volume of corporate bond issuance to GDP has positive impact on average long term debt.***

Chapter 3

Data and Methodology

This chapter of the study deals with sampling procedures, data sources, data period, measurement of explanatory variables and explained variables and statistical models used for analysis.

3.1 Sampling

Our sample for this study contains 9536 non-financial firms from 27 different countries. To broaden geographical coverage of the study 10 countries each from developed and emerging and 07 countries from frontier economies have been selected. The following sampling methods have been used for selection of countries and firms from each country.

3.1.1 Sampling of Countries

Standard & Poor's Dow Jones Indices under its S&P DJI's Global Equity Indices classifies different world countries into developed, emerging and frontier markets. SPDJI classification is based on 03 groups of assessment metrics such as market and regulatory structure, operational efficiency and trading environment for each country. Each of these three categories reflects a number of important market considerations to assess ease of investment and the relative degree of development in each country. Based on the assessment of 03 metrics and market sentiment, SPDJI define developed, emerging and developing markets as follow

1. Markets with high level of consistency and most supportive and accessible to foreign investors are termed as **Developed Markets**.

2. Markets with relative less accessibility but some degree of openness are termed as **Emerging Markets**.

3. Markets in early stage of development with notable regulatory restrictions and much less supportive and accessible to smaller and foreign investment are termed as **Frontier or Developing Markets**.

Thus our basis for declaring a country as developed, emerging or developing is simply based on the respective list of SPDJI classification (For Information about SPDJI, visit www.spdji.com).

First we selected 10 largest countries (as per World Bank ranking of GDP, 2016) each from three economic blocks classified by S&P DJI dated May 24, 2016. The rationale for selecting countries based on GDP is to narrow down our sample to manageable number of countries from each economic block. But this is helpful in two aspects as well. For example first: largest countries based on GDP broaden the geographical coverage of the study in terms of overall GDP of the world countries. Second: ability to generalize results of the study increases. Hence a sample of total 30 countries was selected in first stage.

In the second stage we addressed our limitation of data quality and availability. Cross country comparison requires lots of more firms and quality data from each country to make comparison meaningful. As this study is using 09 firm and 06 country specific explanatory variables and 02 dependent variables therefore extreme care was taken to select only those countries where number of firms is high and quality data is available for maximum of the variables. To achieve this aim all the 30 countries randomly selected from S&P DJI classification were re-assessed for data quality and availability. Some natural resource rich countries though qualified for selection into our sample based on first stage. But they were eliminated at second stage due to our data limitation problem and next in line country was selected. For example Russian Federation is listed as emerging market by SPDJI and is largest emerging economy after China, India and Brazil based on GDP. But at second stage it has been dropped to be selected in emerging block for reason of its data quality and availability. Similarly Egypt and UAE qualify as emerging economies and have better GDP rankings (based on 2016) than Malaysia and South Africa. But they were not considered for due to data quality and availability point of view.

Finally we could only select a total of 27 countries from S & P DJI classification. Out of these 27 countries 10 each are from developed and emerging blocks and only 07 countries are selected as developing countries. We admit that our sampling of countries is not fairly random but convenient too to a certain extent.

The 27 countries included in our sample are United States, Japan, Germany, United Kingdom, France, Italy, Canada, South Korea, Australia, Switzerland, China, India, Brazil, Mexico, Indonesia, Turkey, Poland, Thailand, Malaysia, South Africa, Argentina, Bulgaria, Nigeria, Pakistan, Sri Lanka, Vietnam and Romania.

United States, Japan, Germany, United Kingdom, France, Italy, Canada, South Korea, Australia and Switzerland are ten countries ranked as developed economies. China, India, Brazil, Mexico, Indonesia, Turkey, Poland, Thailand, Malaysia and South Africa are ten countries belonged to emerging economic block of the world. Seven countries like Pakistan, Argentina, Bulgaria, Nigeria, Sri Lanka, Vietnam and Romania have been selected as developing economies into our sample of countries to be covered in the analysis. The reason for not selecting 10 countries from developing block is that we could only find seven countries from SPDJI developing list with quality data.

We argue that our sample have broader coverage in terms of geography and world GDP. All these countries come from six different continents of the world. For instance Asia (Japan, South Korea, China, India, Indonesia, Turkey, Thailand, Malaysia, Pakistan, Sri Lanka and Vietnam), Africa (Nigeria and South Africa), Europe (Germany, United Kingdom, France, Italy, Switzerland, Romania, Bulgaria and Poland), North America (United States, Canada and Mexico), South America (Argentina and Brazil) and Australia from continental Australia.

Figure 3.1 depicts the representation of six continents by our sample.

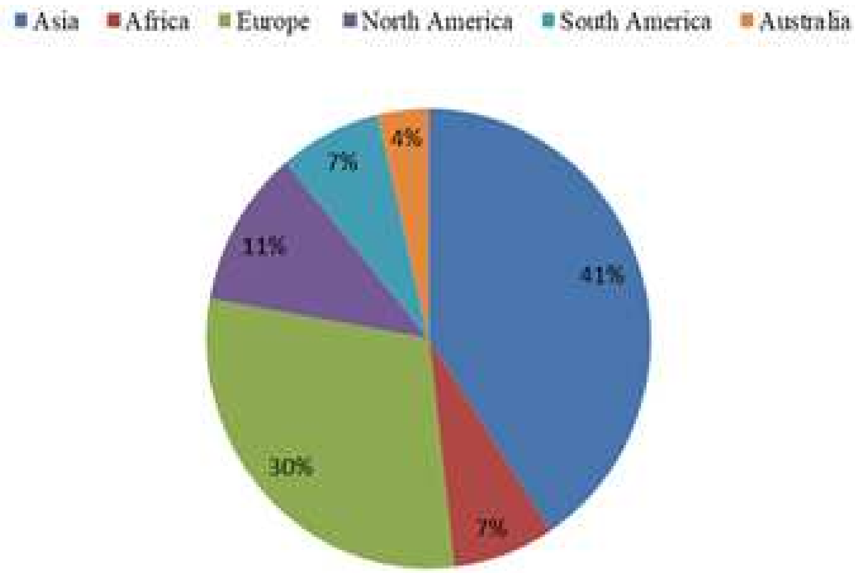

FIGURE 3.1: Sample Geoghraphic Representation.

Table 3.1 illustrates individual and total representation of world GDP by 10 developed countries of the sample. The overall GDP of the 10 developed countries amounts to 38,715,001 million US Dollars representing 51% of the total GDP of the world.

Table 3.2 illustrates individual and total representation of world GDP by 10 emerging countries of the sample. The total GDP value of 10 emerging countries amounts to 19,562,410 million US Dollars representing almost 26% of the total DGP of the world.

Table 3.3 illustrates individual and the total value of GDP for 07 developing or frontier countries amounts to 1,757,633 million US Dollars. GDP of the 07 frontier markets represents 2.3% of the total GDP of the world. The total GDP of the 27 countries from the three economic classes in the sample represent almost 79.4% of the total GDP of the World.

TABLE 3.1: Representation of Developed Countries By GDP.

Countries	GDP Rankings	GDP (Millions USD)	World GDP Representation
United States	1	18,569,100	0.246
Japan	3	4,939,384	0.065
Germany	4	3,466,757	0.046
United Kingdom	5	2,618,886	0.035
France	6	2,465,454	0.033
Italy	8	1,849,970	0.024
Canada	10	1,529,760	0.020
Korea Rep.	11	1,411,246	0.019
Australia	14	1,204,616	0.016
Switzerland	19	659,827	0.009
Total GDP		38,715,001	0.512
Total World GDP (USD)		75,641,577	

Source: World Bank 2016

TABLE 3.2: Representation of Emerging Countries By GDP.

Countries	GDP Rankings	GDP (Millions USD)	World GDP Representation
China	2	11,199,145	0.1481
India	7	2,263,523	0.0299
Brazil	9	1,796,187	0.0237
Mexico	15	1,045,998	0.0138
Indonesia	16	932,259	0.0123
Turkey	17	857,749	0.0113
Poland	23	469,509	0.0062
Thailand	25	406,840	0.0054
Malaysia	37	296,359	0.0039
South Africa	38	294,841	0.0039
Total GDP		19,562,410	0.2586
Total World GDP (USD)		75,641,577	

Source: World Bank 2016

Table 3.3: Representation of Developing Countries By GDP.

Countries	GDP Rankings	GDP (Millions USD)	World GDP Representation
Argentina	21	545,866	0.007
Nigeria	26	405,083	0.005
Pakistan	40	283,660	0.004
Vietnam	46	202,616	0.003
Romania	50	186,691	0.002
Sri Lanka	65	81,322	0.001
Bulgaria	77	52,395	0.001
Total GDP		1,757,633	0.023
Total World GDP (USD)		75,641,577	

Source: World Bank 2016

3.1.2 Sampling of Firms

Our population of firms aims at all the non financial firms operating in the sampled countries. Therefore we selected all non-financial firms whether small or large whose data were available in COMPUSTAT Global database. Only financial firms, holding, inactive and firms for which at least 7 years data were not available have been excluded. Thus our sample is comprised 9536 firms selected from all the 27 countries. Number of firms selected from each country and each block is not equal. This is because of the difference in size of economy and due to data availability and quality. Table 3.4 presents a summary of firms selected from each country and block.

Table 3.4: Firms Selection from each Country and Economic Class.

S. No.	Developed Country	No. of Firms	Emerging Country	No. of Firms	Developing Country	No. of Firms
1	USA	1510	Brazil	190	Pakistan	180
2	UK	362	China	661	Argentina	51
3	Japan	1214	India	1117	Bulgaria	90
4	S. Korea	868	Indonesia	146	Sri Lanka	116
5	Canada	315	Malaysia	352	Nigeria	57
6	Australia	350	S. Africa	100	Romania	58
7	France	387	Turkey	120	Vietnam	145
8	Germany	317	Poland	217		
9	Italy	156	Thailand	317		
10	Switzerland	80	Mexico	60		
	Total Firms	5559		3280		697
Grand Total						9536

3.2 Data Collection and Data Period

This research study considers both firm and country specific attributes to investigate their impact on debt ratios in different countries. Various sources have been used for firm and country specific data collection. Law and order indices for different countries have been collected from International Country Risk Guide (ICRG) by The PRS Group. Heritage Foundation and the Wall Street Journal issue index of economic freedom for different world economies. Data for economic freedom index have been collected from Heritage Foundation's website. Data regarding corruption perception index in different countries have been gathered from Transparency International. Financial Structure Database of the World Bank is the main source used for financial development (Banking and capital market activity) data in different countries.

Annual data for firms' specific factors and leverage have been collected from COMPUSTAT Global database from 2004 to 2016. The data for the year 2004 and 2005 was used as base years to calculate the earnings volatility and were then dropped. Therefore our data time period for the analysis is from 2006 to 2016. The choice of our data time period was restricted by data availability for more firms to make the comparison meaningful.

3.3 Measurement of Explained Variables

Different proxies regarding measurement of financial leverage have been used so far in literature. However most of the leverage proxies differ based on book values or market value. Besides that some studies use long term debt and the other total debt. Titman and Wessels (1988) propose at least six such proxies to measure financial leverage. These are long debt term scaled by either market and book value of equity separately, short term debt scaled by either market and book value of equity separately, and convertible debt scaled by both market and either value of equity separately. All these six ratios can be combined to calculate a single ratio of financial leverage but they do not recommend doing so. This is because the predictions of different theories of capital structure may differ due to use of different measures of leverage in terms of market or book values (Titman & Wessels, 1988).

Many prior studies (Antoniou et al.., 2002; Booth et al., 2001; De Jong et al., 2008; Demirguc et al., 1999; Hall et al., 2004; Titman & Wessels, 1988) use long term leverage measured as BV of long term debt scaled by MV of total assets, where market value for total assets of a firm is calculated as book value of assets in place less book value of equity plus market value of equity. Deesomsak et al. (2004) use ratio of total debt to total debt plus MV of equity plus BV of preferred shares. They argue that using market value of equity gave more consistent results than book value. According to Frank and Goyal (2009) market based ratios are forwarding looking and book values are something related to past. They suggest five different measures of gearing in their study. But they mainly focus on total debt over market value of assets, where total debt is equal to long term debt plus short term debt and market value of assets is equal to sum of total debt, market value of equity and preferred stock less sum of deferred tax amount and investment credits. Mittoo and Zhang (2008) also use ratio of long term debt over sum of total debt and market value of equity. However Akhtar and Oliver (2009) state that using total debt (which is sum of long and short term debt) in denominator is inappropriate because short term debt has high variance and its addition inflates leverage ratios unnecessarily. That is why they use long term debt over sum of long term debt and market value of equity. De Jong et al.. (2008) also suggest that due to different dynamics of short term debt using total debt ratio will generate uninterruptable results. Frank and Goyal (2009) although suggest four different versions of leverage, but they mainly focus on market based measurement. They measure leverage as total debt scaled by market value of assets. Several previous empirical studies (Doukas & Pantzalis, 2003; Padron et al., 2005; Suto, 2003; Wiwattanakantang, 1999) use different market value based measurement of leverage.

However Bowman (1980) argues that despite the fact that market value of debt is a preferable measure nonetheless book value of debt will not distort the leverage ratios. The reason is that there exist a strong cross sectional correlation between book value and market value of debt. Wald (1999) uses ratio of long term debt scaled by book value of total assets of the firm. He suggests ratio of total debt scaled by total assets will be more sensitive to unobserved financial changes and crises. Therefore ratio of long term debt scaled by book value of total assets will show more stability. According to Graham and Harvey (2001) adjusting assets values to market are costly. Consequently managers prefer to use book values for financial decision making. Chen (2004) use book value of total debt scaled by total firm's held assets and book value of long term debt scaled by total assets to proxy total and long term leverage respectively. Weill (2004) use total liabilities over book values of total assets as a measure of total leverage. Hall, Hutchinson, and Michaelas (2006) measure long term debt ratio as long term debt over book values of total assets and short term debt ratio as short term debt scaled book values of total assets. Many previous studies (Delcoure, 2007; Handoo & Sharma, 2014; Karacaer et al., 2016; Mokhova & Zinecker, 2013; Yang et al., 2015) use book based measures of leverage. A number of studies (Bauer, 2004; Feidakisa & Rovolis. 2007; Gaud et al., 2005; Thippayana, 2014) use both market and book based measures of leverage.

In agreement with previous literature (Chen, 2004; Handoo & Sharma, 2014; Mateev, Poutziouris & Ivanov, 2013; Wald, 1999), we measure our dependent variables using book based measures in the following way.

Long Term Debt Ratio (LTDB) = BV of Long Term Debt/BV of Total Assets

Short Term Debt Ratio (STDB) = BV of Short Term Debt/BV of Total Assets

3.3.1 Measurement of Firms' Specific Explanatory Variables

Following section discusses previous proxies used to measure independent firms' specific factors used in our analysis and our own proxies used for analysis.

3.3.1.1 Measurement of Non-Debt Tax (NDTS)

A number of proxies to measure non debt tax shield has been used for in the literature. These different proxies can be calculated from tax loss carry forward, investment tax credits and depreciation. Investment tax credits over total assets and depreciation over total assets can be used as indicators of the non-debt tax shields (DeAngelo & Masulis, 1980; Scott, 1976). Investment tax credit over total assets is another proxy used by Berger et al. (1997). Bradley et al. (1984) suggest ratio of total depreciation expense scaled by book value of total assets as a proxy to measure non debt tax shield. The same proxy has been used by many other studies (Barton et al., 1989; Chen, 2004; Deesomsak et al., 2004; Karacaer et al., 2016; Oliver and Akhtar, 2009; Ozkan, 2001; Titman and Wessels, 1988; Yang et al., 2015) to measure non debt tax shields of a firm. Boyle and Eckhold (1997) use total annual depreciation less taxes paid scaled by earnings before income and taxes.

It is worth mentioning that different measures for NDTS may lead to different results (Barclay & Smith, 2005). For example larger depreciation means more tangible assets while in case of tax loss carry forward firm is probably facing financial distress. Our study uses total annual depreciation divided by total assets of a firm to measure non-debt tax shield. This proxy has previously been used by Bradley et al. (1984); Titman and Wessels (1988); Akhtar and Oliver (2009).

$$NDTS_{i,t} = (Total\ Annual\ Depreciation\ and\ Amortization)_{i,t}/Total\ Assets_{i,t}$$

3.3.1.2 Measurement of Tangibility (TANG)

Titman and Wessel (1988) model suggest two proxies to capture the attribute of collateral value of a firm, first the ratio of intangible assets to total assets and ratio of inventory plus gross plant and equipment to total assets. The first measure was found to be negatively correlated to the collateral value attribute, while the second was positively correlated to collateral value.

Many prior studies (Anthony & Odunayo, 2015; Beven & Danbolt, 2004; Chi, 2013; De Jong et al., 2008; Fan et al., 2012; Feidakis & Rovolis, 2007; Frank & Goyal, 2009; Giannetti, 2003; Harris & Raviv, 1991; Handoo & Sharma, 2014; Kayo & Kimura, 2011; Karacaer et al., 2016; Michaelas et al., 1999; Nguyen & Ramachandran, 2006; Niu, 2008; Oliver & Akhtar, 2009; Oztekin, 2015; Rajan & Zingales, 1995) use ratio of fixed assets to total assets as tangibility measure.

Chen (2003) suggests that inventories held with a firm have value in case of liquidation. Hence to measure tangibility for collateralization purposes, Chen (2003) use fixed assets plus inventories scaled by total assets to measure assets collateral value. Gaud et al. (2005) followed the same proxy. In line with previous literature (e.g. Chen, 2003; Gaud et al., 2005; Lemmon et al., 2008) our study measures asset tangibility as a ratio of property, plant & equipment plus inventories scaled by book value of total assets.

$$\begin{aligned} TANG_{i,t} = BV\ of\ Property,\ Plant\ \&\ Equipment_{i,t} \\ + Total\ Inventories_{i,t}/BV\ of\ Total\ Assetsi,t \end{aligned}$$

3.3.1.3 Measurement of Uniqueness (UNIQ)

Firms that sell specialized and unique products are expected to spend high on research and development (Frank & Goyal, 2009). On the other hand firm's that sell products with closed substitutes available in the market spend less on research and development. Frank and Goyal (2009) use a uniqueness dummy variable to capture firms with unique assets.

According to Titman and Wessels (1988) uniqueness can be measured as expenditure on R&D over sales of the firm. But disclosure requirement for Research & Development expenditure across countries may vary. Therefore it is difficult to get R & D expenditures for all firms in every country in our case. As our study is concerned with cross country comparison, we drop the idea of using R & D expenditure to measure uniqueness of firms across countries. Selling, general & administrative expenses (SG & A) over sales can be expected to capture uniqueness of product of a firm (Frank & Goyal, 2009) because firms that sell unique products are expected to spend more on promotion and advertisement. Besides that R and D expenditures becomes a part of selling, general and administrative costs in countries where R & D are not reported separately. Therefore we argue that SG &A would be a better proxy to represent all the costs related to advertizing, promotion of products and R&D expenditure. In line with the above argument we in this research study use the following proxy to capture product uniqueness of a firm.

$$UNIQi,t = Selling,\ General\ and\ Administrative\ Costs_{i,t}/Sales_{i,t}$$

3.3.1.4 Measurement of Size (SIZE)

Titman and Wessels (1988) suggest an interesting measure of size that is the quit rates. According to them as larger firms offer wider opportunities for career development that is why it is expected that larger firms would have low quit rates. However existing literature reveals two widely used measures to proxy size effects of the firm. Many studies use natural log of net sales (De Jong et al., 2008; Graham, 2000; Gaud et al., 2005; Kayo & Kimura, 2011; Niu, 2008; Ozkan, 2001; Rajan & Zingales, 1995; Titman & Wessels, 1988; Wiwattanakantang, 1999). However a number of studies use natural log of total assets to capture size effect (Anthony & Odunayo, 2015; Chen, 2004: Fan et al., 2012; Frank & Goyal 2009; Handoo & Sharma. 2014; Karacaer et al., 2016; Lemmon et al., 2008; Padron et al., 2005; Yang et al., 2015).

Feidakis and Rovolis (2007) use both (natural log of sales and assets) and report a significant high correlation between the two. In line with previous literature we use the following proxy to capture size of a specific firm.

$$SIZE_{i,t} = \ln(BV\ of\ Total\ Assets_{i,t})$$

3.3.1.5 Measurement of Volatility (EVOL)

Earning volatility or business risk of a firm has been measured using slightly different proxies in the literature. Bradley et al. (1984) and Chaplinsky (1984) use standard deviation of first difference in the EBIT-total assets ratio as an indicator of risk. Kim and Sorensen (1986) use standard deviation of EBIT to proxy business risk or volatility. A similar measure has been used by Friend and Lang (1988). MacKie-Mason (1990) uses a modified version of Z-Score developed by Altman (1968) to measure risk. Kayo and Kimura (2011) also used MacKie-Mason proxy. Many previous studies (Booth et al., 2001; Karacaer et al., 2016; Lee & Kwok, 1988) use variation of EBIT scaled by total assets over time as a proxy of business risk. Wald, (1999) and Chen (2004) measures earning volatility as an absolute value of 1^{st} difference of %age change of operating income. Deesomsak et al. (2004) use a similar proxy to measure risk. Akhtar (2005) use standard deviation of first difference in the EBIT-Interest expense ratio. He uses interest expense instead of total assets to avoid correlation with other variables.

A number of prior empirical studies (Feidakis & Rovolis, 2007; Frank & Goyal, 2009; Lemmon & Zender, 2004) use variation in stock market returns to proxy risk. Huang (2006) use standard deviation in Return on Sales as earning volatility or risk. Niu (2008) uses standard deviation in returns of assets to measure earning volatility. Boyle and Eckhold (2010) measure earning volatility by standard deviation of annual EBIT scaled by five years mean of annual of EBIT. Handoo and Sharma (2014) use standard deviation in cash flows of a firm to proxy risk or financial distress. Our study uses standard deviation in the last three years EBIT to total assets ratio of the firm as a volatility measure of earnings.

3.3.1.6 Measurement of Growth (GROW)

To measure to growth opportunities of a firm several proxies have been used so far. Myers (1977) defines growth as ratio of market value of assets over book value of assets. A large number of previous studies (Bevan & Danbolt, 2004; De Jong et al., 2008; Deesomsak et al., 2004; Fan et al., 2012; Feidakis & Rovolis, 2007; Frank & Goyal, 2009; Gaud et al., 2005; Kayo & Kimura, 2011; Lemmon et al., 2008; Niu, 2008; Oztekin, 2015; Ozkan, 2002; Rajan & Zingales, 1995; Yang et al., 2015) use market to book value of equity or assets as proxies to measure growth. But it is argued that market to book value of equity or assets can be misleading because this ratio will be greater for both firms having large growth opportunities and for firms whose assets have been appreciated since buying with no growth prospects.

Titman and Wessels (1988) use capital expenditure divided by total assets to measure growth opportunities. According to them expenditure on research and development over sales can also be used as an indicator of growth. P/E ratio is also a potential indicator of growth but as it is determined as a part of leverage ratio thus can cause reverse causality (Titman & Wessels, 1988). In line Titman and Wessels (1988) many studies (Boyle & Eckhold, 2010; Handoo & Sharma, 2014; Karacaer et al., 2016) use percentage change in a firm's total assets to measure growth. Chen (2004) uses ratio of sales growth over total assets growth to measure growth prospects. To measure growth opportunities of a firms Anthony and Odunayo (2015) use gross written premium of current year less gross written premium of lag year scaled by gross written premium of lag year. In accordance with Titman and Wessels (1988) and others our study uses following measure to capture growth.

$$GROWi,t = Capital\ Expenditure_{i,t}/TotalAssets_{i,t}$$

3.3.1.7 Measurement of Profitability (PROF)

Titman and Wessels (1988) use two ratios i.e. operating income to total assets and total sales to measure profitability. Operating income (earnings before interest and taxes) to total assets as a measure of firm's profitability has been used by many prior studies (De Jong et al., 2008; Fama & French, 2002; Flannery & Rangan, 2006; Handoo & Sharma, 2014; Karacaer et al., 2016; Niu, 2008). Yang et al. (2015) use only EBIT for Chinese firms.

However Rajan and Zingales (1995) suggest ratio of EBITDA to total assets as a measure to capture profitability attribute. It is argue that due to different accounting and legal regulations earnings before interest, tax, depreciation and amortization (EBITDA) to total assets is much better proxy for profitability when it comes to international comparisons. Consequently many prior empirical studies (Alves & Ferreira, 2011; Antoniou et al., 2002; Bevan & Danbolt, 2004; Chen, 2004; Deesomsak et al., 2004; Feidakis & Rovolis, 2007; Frank & Goyal, 2009; Gill, Mand, Sharma & Mathur, 2012; Ozkan, 2001) use ratio of EBITDA scaled by total assets as a measure of firm profitability.

Doukas and Pantzalis (2003); Oliver and Akhtar (2009) use average net income of firm scaled by total sales for last four years to proxy firm's profitability. Anthony and Odunayo (2015) use ratio of profit after tax to total assets to proxy firm's profitability.

Many other notable indicators of firm's profitability used are percentage change in retained earnings (Boyle & Eckhold, 2010), Tobin Q (Huang & Song, 2002). In line with the existing literature our study uses firms' earnings before interest, taxes and depreciation (EBITD) scaled by firm's total assets (TA) to measure profitability of firms.

$$PROFi,t = EBITD_{i,t}/BV\ of\ Total\ Assets_{i,t}$$

3.3.1.8 Measurement of Liquidity (LIQD)

Previous literature suggests current ratio measured as current assets over current liabilities as a widely used measure of liquidity. Current ratio has been used by a number of previous studies (Anthony & Odunayo, 2015; Antoniou et al., 2002; Deesomsak et al., 2004; De Jong et al., 2008; Feidakis & Rovolis, 2007; Handoo & Sharma, 2014: Karacaer et al., 2016; Niu, 2008) to measure liquidity of firms. However to be more conservative about firm's liquidity quick ratio can also be used to capture liquidity attribute of a firm. To measure liquidity in a more conservative way Yang et al. (2015) use quick ratio. Following previous literature our study measures firm's liquidity as current ratio as follow.

$$LIQDi,t = Current\ Assets_{i,t}/Current\ Liabilities_{i,t}$$

3.3.1.9 Dividend Payout Per Share (DIVP)

To distinguish dividend paying firms from those they do not pay a dichotomous variable can be used. Frank and Goyal (2009) use a dummy variable to signify that either a firm belongs to a dividend paying group or otherwise. It is expected that those firms belonged to dividend paying group would suffer less from asymmetric information due to higher reputation than other firms that do not belong to the same group. Boyle and Eckhold (1997) argue that level of dividends does not seem to influence debt usage. However dividend growth may influence leverage usage of a firm. To capture dividends growth they use change in annual dividend payment scaled by earnings before interest and taxes as to proxy the dividend policy of the firms. A recent study by Yang et al. (2015) use dividend per share to capture dividend policy for Chinese firms. We use dividend payout per share calculated as below to capture the dividend paying attribute of the firm.

$$DIVP_{i,t} = DPS_{i,t}/EPS_{i,t}$$

Table 3.5 summarizes our measurement of different firm specific independent variables and their symbols used in the analysis.

Table 3.5: Firms' specific Explanatory Variables.

Variable	Symbol	Measurement
Non- Debt Tax:	NDTS	Total Annual Depreciation by BV of Total Assets
Assets Tangibility	TANG	BV of PP & E plus Total Inventories by BV of Total Assets
Uniqueness	UNIQ	Selling, General and Administrative Costs by Sales
Size	SIZE	Natural log of BV of Total Assets
Volatility	EVOL	Std. Deviation in the last three years EBIT to total assets ratio
Growth	GROW	Capital Expenditure by BV of Total Assets
Profitability	PROF	EBITDA by BV Total Assets
Liquidity	LIQD	Current Assets by Current Liabilities
Dividend Policy	DIVP	Dividend Per Share by Earning Per Share

Data Source: COMPUSTAT Global Database

3.3.2 Measurement of Country's Specific Regressors

3.3.2.1 Measurement of Integrity of Legal System and its Enforcement (LEGL)

Our study sample consists of 27 different countries from the world, where legal setups significantly vary. Following La Porta et al. (1998) we may use dummy variable to account for common law countries and civil law countries as did by Fan et al. (2012). But as our analysis contains countries where law cannot be clear cut defined as common or civil. As per CIA World Factbook many countries have mixed laws for example Pakistan (common law mixed with Islamic Sharia influence), Malaysia (English Common law mixed with Islamic Sharia), China (Civil law with mixed Soviet and European influence) and India (English Common Law with separate codes for Muslims, Christian and Hindus). Therefore we expect using a dummy for just the type of law (Common and Civil Law code) will not make any difference. Besides that we think that it is not the name of a law that protects but rather the contents, integrity and enforcement of the law that make the difference. Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2003) suggest level of corruption as indicator to gauge the effectiveness of law enforcement by courts. But we argue that corruption index (Transparency International) is based on expert opinions and perception and may not be a suitable representation of legal integrity and law enforcement. According to Fan et al. (2012) Law and order index is expected to be more representative index to proxy integrity and enforcement of law in a country. Our study follows the same proxy to capture the aspect of legal integrity of a country. We also use Law and Order Index by International Country Risk Guide (ICRG) by The PRS Group. To calculate the said index, ICRG takes different aspects of law and order like accountability, political stability, effectiveness of governance and regulation into account. Law and Order Index reflect its ability to resolves conflicts and enforce contractual obligations. The index varies between 0 and 6. The higher the value the better the law and order and legal integrity for a particular country.

3.3.2.2 Measurement of Perceived Corruption (CPPI)

Transparency of a country better represents the trustworthiness, good will and sound functioning of its institutions. On the other hand corruption reveals the weaknesses of public institutions, inequality, bribery, misappropriation and extortion. The exact measurement of corruption is difficult due to its diverse nature and forms. However it has some clearly visible outcomes in terms of deprivation of basic needs, starvation, unemployment, literacy and poverty. As stated by Mr. Jose Ugaz Chair Transparency International

"In too many countries, people are deprived of their most basic needs and go to bed hungry every night because of corruption, while the powerful and corrupt enjoy lavish lifestyles with impunity".

To measure the level of corruption in different world countries Transparency International issues Corruption Perceptions Index (CPI) every year. This index is based on expert opinions from public. The index score varies from zero to 100. The higher the index scores the lower level of perceived corruption. We use Corruption Perceptions Index by Transparency International to see how the perceived corruption influences firm's leverage in different economic blocks. However we are taking the same score in decimal percentage form.

3.3.2.3 Measurement of Economic Freedom (ECOF)

The Heritage Foundation and the Wall Street Journal issue index of economic freedom for different world economies. The index is a composite of 12 types of sub economic freedoms into 04 broader categories of economic freedom. To quantify the effect of the 12 types of freedoms are scaled from 0 to 100. The score for the economic freedom index has been obtained by the weighted average of all 12 freedoms. Our Study uses economic freedom index from Heritage foundation co published by Wall Street Journal from 2006 to 2016 for all the countries in our sample. We again make one adjustment to the aforementioned index by taking its value in decimal percentage form.

3.3.2.4 Measurement of Financial Development

A number of studies (i.e. Booth et al., 2001; Fan et al., 2006; Frank & Goyal, 2009; La Porta et al., 1998; Wald, 1999) suggest that some country specific attributes may be held responsible by crossectional variation and inconsistencies in capital structure across the globe. One such country specific attribute may be difference in level of economic development. According to Myer (1989) difference in level of development of banks and financial markets can also impact the financing decisions of firms. Demirguc-Kunt and Maksimovic (1996) report a direct relationship between leverage and banks' development level in contrast to negative relationship between development level of stock market and leverage. Rajan and Zingales (2001) report that development of financial systems may cause access to debt market easier for some industries. They further suggest that need for physical collateral decreases as the level of financial development increases. Hence firms are expected to employ more debt. Fauver et al. (2003) also report accessibility to external capital depends on the development of financial structure of a country. Giannetti (2003) reports significant influence of stock market development on leverage decisions in European countries. Jong et al. (2008) report firms borrow more in countries where bond market is more developed.

So far different measures of financial development have been used in different studies e.g. bank deposit liabilities to GDP, ratio of market capitalization to GDP, ratio of liquid liabilities to GDP, ratio of assets of financial intuitions to GDP and ratio of deposits to GDP (King & Levine, 1993). Rajan and Zingales (2001) suggest better accounting standards and bank credit as proxies to measure financial development. De Jong et al. (2008) use three different proxies first: ratio of private plus public bond market capitalization scaled by GDP (for bond market development) second: ratio of stock market capitalization to GDP (for stock market development) third: a dichotomous variable to see whether financial system of a country is market based or bank based. Kayo and Kimura (2011) use ratio of private plus public bond market capitalization scaled by GDP for bond market development and ratio of stock market capitalization to GDP for stock market development.

Financial Structure Database of the World Bank measures financial development of a country based on four broader characteristics e.g. financial depth, access, efficiency and stability for financial institutions, bond market and capital markets. We use the following three measures from World Bank financial structure database. These measures represent the relative importance in terms of depth in stock market, bond market and banking sector of a country.

Measurement of Banking Sector Activity (BSAT) Different proxies in terms of access, depth, efficiency and stability of banking sector can be used to measure banking sector development in a country. But to avoid of multi-collinearity our study use only depth of financial institutions to assess banking sector development and activity. We use private credit by deposit money banks to gross domestic product to measure depth of banking sector (BSAT). BSAT measures the depth level of commercial banks of a country by evaluating value of total credit provided by banks to private sector relative to the size of the economy. Data for the said ratio have been collected from Financial Structure Database of World Bank from 2006 to 2016 for all the countries in our sample.

Measurement of Stock Markets Activity (CMAT) Our study uses depth of stock markets as a measure of capital market development in countries under investigation. To measure stock market activity in terms of stock market depth in different countries we use ratio of total value traded at stock market to gross domestic product (CMAT). This ratio measures the level of capital markets depth by evaluating value of total share transactions in the stock market relative to the size of the economy. The data for the said proxy has been collected from Financial Structure Database of World Bank from 2006 to 2016 for all the 27 countries in our sample.

Measurement of Bond Market Activity (BMAT) Our study again uses depth of bond markets in different countries of our sample as a measure of bond market development. To measure bond market activity in terms of bond market depth in different countries we use ratio of volume of corporate bond issuance to gross domestic product (BMAT). This ratio measures the level of bond markets depth by evaluating volume of new corporate bond issued by private entities (excluding financial, holding and insurance firms) in relation to the size of the economy. The data for the said proxy has been collected from Financial Structure Database of World Bank from 2006 to 2016 for all the 27 countries in our sample.

Table 3.6 summarizes our measurement of different Country specific independent variables and their symbols used in the analysis.

Table 3.6: Country's specific Explanatory Variables.

Variable	Symbol	Measurement
Legal System and its Enforcement	LEGL	Law and Order Index
Perceived Corruption	CPPI	Corruption Perceived Index
Economic Freedom	ECOF	Economic Freedom Index
Banking Sector Activity	BSAT	Private credit by deposit money banks to GDP
Capital Markets Activity	CMAT	Total Value Trade at Stock Market to GDP
Bond Market Activity	BMAT	Volume of corporate bond issuance to GDP

Data Sources: ICRG (PRS Group), Transparency International, Heritage Foundation, World Bank

3.4 Methodology

3.4.1 Importance of Panel Data Analysis

Use of panel data has significantly increased due to data availability, need to study complex human behavior and challenging methodology (Hsiao, 2007). Today's world is much closer due to globalization and massive technological advancements. The quest of researchers for more information, reliable forecasting and limitations of time series and cross-sectional data are some reasons of increased use of panel data studies. Crossectional data allows researchers to infer about sections only at the time of measurement only. The aforementioned data type may also suffer from biases like endogeneity and unobserved variables (Hausman, 1978; Holland, 1986). This limits its ability to do casual ordering. Similarly time series can infer about time. Panel data can help overcome the shortcomings of both time series and crossectional data types. Panel data is a combination of both crossectional *(i)* and time series *(t)* data. This combination of cross-sections and time series improves both quality and quantity. It is superior for analysis because it permits researchers to study the dynamics of change over crossectional units and time periods (Frees, 2004). Panel data has many advantages over time series and crossectional data in many ways. Baltagi (1995) suggests that neglecting heterogeneity issues due to veiled variables in crossectional or time series may lead to unfair and biased estimation. Panel data models can control for heterogeneity among cross-sections by allowing them for specific effects. By this we assume clustering for a specific section over time but not over other sections. In time series or crossectional data variables may perhaps be collinear over time or cross-sections respectively. But in contrast to time series (variability over time) or crossectional data (variability over cross-sections), panel data allow more variability both over time and cross sections thereby reducing the chances of collinearity among regressors. Panel data allow for more data points and observations both over multiple individuals and time periods thereby allowing for more degrees of freedom. The effect of important explanatory variables if excluded or omitted incorporates into error term making intercept significant. Panel data models can help remove the omitted variables bias. Besides that panel data models help us control the variations in the dependent variables that come from unobserved variables.

3.4.2 Model Specification

This study uses panel data models to empirically investigate the relationship between a set different debt ratios and firms' specific and country specific explanatory variables. As we first aim to investigate the reliable determinants of corporate borrowing across developed, emerging and developing countries and then see for any consistent pattern across. Many prior empirical studies (i.e. Hang & Hoa, 2016; Karacaer et al., 2016; Sayılgan et al., 2006) employ panel regression models to analyze the firm specific attributes of leverage in a single country context. De Jong et al. (2008) use country by country OLS regression to analyze firm specific determinants of leverage in 42 countries. In line with Booth et al. (2001) we run separate sets of panel regression models for each country, first to identify the important determinants of corporate borrowing in each country and then compare the results in order to assess the differences/similarities countries wise and block wise. To analyze the direct impact of country specific factors in each economic block, we run panel regression models with average long term debt ratios as explained variable and country specific factors in each block as our explanatory variables. Our panel is not balanced due to missing observations for cross-sections (both firm and country level) in some time periods. We analyze the effect of firm specific and country specific attributes separately on debt ratios using three panel data models under three assumptions. Pool or common constant model was estimated under the assumption of common intercept and homogeneity among crossectional units. To account for heterogeneity among units and allow each cross-section to have its own intercept using a dummy, Least Square Dummy Variable model (Fixed effects) was used. In error component model we assume that distribution of individual specific effects (α_i) are independent of the regressors. Therefore we add individual specific effects α_i in the model with the idiosyncratic error term (e_{it}) to have a composite error term $\varepsilon_{i,t}$, which equals $\alpha_i + e_{it}$. A Crossectional homogeneity hypothesis was assessed using Breusch Pagan LM test, while fixed and random effects were decided by Hausman_Chi^2. In panel data, problems like hetroskedasticity and autocorrelation may likely occur (Wijst & Thurik, 1993). To address the possibility of hetroskedastic standard errors, serial correlations and ensure the statistical validity of our regression results, we run our regression with standard errors adjusted for clusters in crossectional units (firms and country) as suggested by Petersen (2009). This method is also in line with Frank and Goyal (2009). Below section discusses each model in details.

3.4.3 Pooling OLS/Common Constant Model

In common constant model we neglect heterogeneity among cross-sectional observations and pool the data to run one grand regression ignoring the data is panel in nature. By this we assume common intercept and coefficients for all units and ignore significant cross-sectional and temporal effects. The very basic form of common constant model takes the form

$$Y_{it} = \alpha + X_{it}\beta_1 + u_{it}$$

If the underlying assumptions of homogeneity across sections hold true, then using pooled OLS or common constant model via equation has the full potency to estimate consistent and efficient coefficients for all predictors and is parsimonious option to exercise. In first place we extend this equation to our analysis and assume that there are no variations across firms and countries. Hence all the regression equations to predict ratio of long term and short term debt using firm specific factors take the form

$$\begin{aligned} LDBTA_{i,t} = \alpha &+ \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} \\ &+ \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVPi,t \\ &+ u_{it} \end{aligned} \tag{3.1}$$

$$\begin{aligned} SDBTA_{i,t} = \alpha &+ \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} \\ &+ \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVPi,t \\ &+ u_{it} \end{aligned} \tag{3.2}$$

To test the impact of country specific factors on average long term debt ratios across each economic block (developed, emerging, developing) over 2006 to 2016, our common constant model takes the form

$$\begin{aligned} \sum LDBTA_{i,t} = \alpha &+ \beta_1 LEGL_{i,t} + \beta_2 CPPI_{i,t} + \beta_3 ECOF_{i,t} + \beta_4 BSAT_{i,t} \\ &+ \beta_5 CMAT_{i,t} + \beta_6 BMAT_{i,t} + u_{it} \end{aligned} \tag{3.3}$$

3.4.4 Least Square Dummy Variable (LSDV) Model

By LSDV model we take heterogeneity among cross-sectional units into account and allow each unit to assume its own intercept value using dummy variable. To capture this heterogeneity we introduce time invariant variable (μ_i) into our model. By this we assume that intercept of the model does not vary our time and it does vary over cross-sections. However this model does not allow individuals a different slope. It remains the same for the parameters. The very basic form of LSDV model takes the form

$$Y_{it} = \alpha + \mu_i + X_{it}\beta_1 + u_{it}$$

The above equation can be rewrite as under if we replace the unit specific intercept with α_i

$$Y_{it} = \alpha_i + X_{it}\beta_1 + u_{it}$$

It must be noted that the time invariant variables (μ_i) capture the difference among cross-sections, but this difference is not due to X_{it} already included in our model but due to some unobserved variables. Thus if we could not include dummy to capture unobserved variation this will inflate our intercept leading to omitted variable biasness.

The individual specific intercept can be termed as left over variation that cannot be explained by the regressors. It can be recovered as following after estimation of the model.

$$\tilde{a}_i = \tilde{Y}_i - \acute{X}_i\widetilde{\beta}$$

To test the impact of firms' specific factors on long ($LDBTA_{i,t}$) and short term debt ratios ($SDBTA_{i,t}$), we rearrange the basic LSDV model with year fixed effects (γ_t). Our regression equations take the form

$$\begin{aligned} LDBTA_{i,t} = (\alpha + \mu_i) &+ \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} \\ &+ \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVPi,t \\ &+ \gamma_t + u_{it} \end{aligned} \tag{3.4}$$

$$
\begin{aligned}
SDBTA_{i,t} = {} & (\alpha + \mu_i) + \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} \\
& + \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVPi,t \\
& + \gamma_t + u_{it}
\end{aligned}
\tag{3.5}
$$

We use the following LSDV model separately for each economic block of countries to test the direct impact of country characteristics on average long term debt ratios ($\sum LDBTA_{i,t}$) in each block. Our LSDV model takes the form

$$
\begin{aligned}
\sum LDBTA_{i,t} = {} & (\alpha + \mu_i) + \beta_1 LEGL_{i,t} + \beta_2 CPPI_{i,t} + \beta_3 ECOF_{i,t} + \beta_4 BSAT_{i,t} \\
& + \beta_5 CMAT_{i,t} + \beta_6 BMAT_{i,t} + \gamma_t + u_{it}
\end{aligned}
\tag{3.6}
$$

Where

$\sum LDBTA_{i,t}$ = Average long term corporate debt ratio in country "i" at time period "t"

$\mathrm{LEGL}_{i,t}$ = Legal integrity and enforcement for country "i" at time period "t"

$\mathrm{CPPI}_{i,t}$ = Corruption perception index for country "i" at time period "t"

$\mathrm{ECOF}_{i,t}$ = Economic freedom index for country "i" at time period "t"

$\mathrm{BSAT}_{i,t}$ = Banking sector activity for country "i" at time period "t"

$\mathrm{CMAT}_{i,t}$ = Capital market activity for country "i" at time period "t"

$\mathrm{BMAT}_{i,t}$ = Bond market activity for country "i" at time period "t"

α = Shared y-intercept

α_i = Individual y-intercept

β_1 to β_9 = Slope coefficients for independent variables

γ_t = Year fixed effects

u_{it} = Stochastic error term for any unit (firm/country) "i" at time period "t"

ε_{it} = Composite error term for any unit (firm/country) "i" at time period "t"

3.4.5 Error Component Model/Random Effect Model

In the Fixed effects model we allow intercept to vary with cross-sections. To tap such variations we include an entity dummy. In random effect or error component model we assume the heterogeneity comes from some random error (ε_i) which is entity specific and distributed independently of regressors.

In error component model we allow entity specific intercept which does not vary over time. Consider the basic fixed model

$$Y_{it} = \alpha_i + X_{it}\beta_1 + u_{it} \tag{3.7}$$

As assumed by error component model the intercept of each entity (α_i) arise from common intercept (α) and some random variable (ε_i).

$$\alpha_i = \alpha + \varepsilon_i \tag{3.8}$$

Putting equation (3.8) in above equation (3.7) and rearranging we get

$$Y_{it} = \alpha + X_{it}\beta_1 + \varepsilon_i + u_{it} \tag{3.9}$$

Thus individual specific effects (ε_i) are added with the idiosyncratic or model specific error term (u_{it}) to have a composite error term ($\varepsilon_{i,t}$) for the model as follow

$$\varepsilon_{it} = \varepsilon_i + u_{it} \tag{3.10}$$

Putting equation (3.10) in above equation (3.9) and rearranging we get our base line error component model as follow

$$Y_{it} = \alpha + X_{it}\beta_1 + \varepsilon_{it}$$

Rearranging the above basic error component model for our analysis with year fixed effects (γ_t) our regression equations take the form

$$\begin{aligned} LDBTA_{i,t} &= \alpha + \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} \\ &+ \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVPi,t \\ &+ \gamma_t + \varepsilon_{it} \end{aligned} \tag{3.11}$$

$$\begin{aligned} SDBTA_{i,t} &= \alpha + \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} \\ &+ \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVPi,t \\ &+ \gamma_t + \varepsilon_{it} \end{aligned} \tag{3.12}$$

Where:

$\text{LDBTA}_{i,t}$ = Long term debt ratio for any unit (firm) "i" at time period "t"

$\text{SDBTA}_{i,t}$ = Short term debt ratio for any unit (firm) "i" at time period "t"

$\text{NDTS}_{i,t}$ = Non-debt tax shield for any unit (firm) "i" at time period "t"

$\text{TANG}_{i,t}$ = Tangibility for any unit (firm) "i" at time period "t"

$\text{UNIQ}_{i,t}$ = Uniqueness for any unit (firm) "i" at time period "t"

$\text{SIZE}_{i,t}$ = Size for any unit (firm) "i" at time period "t"

$\text{EVOL}_{i,t}$ = Earnings volatility for any unit (firm) "i" at time period "t"

$\text{GROW}_{i,t}$ = Growth for any unit (firm) "i" at time period "t"

$\text{PROF}_{i,t}$ = Profitability for any unit (firm) "i" at time period "t"

$\text{LIQD}_{i,t}$ = Liquidity for any unit (firm) "i" at time period "t"

$\text{DIVP}_{i,t}$ = Dividend payout per share for any unit (firm) "i" at time period "t"

α = Shared y-intercept

α_i = Individual y-intercept

β_1 to β_9 = Slope coefficients for independent variables

γ_t = Year fixed effects

u_{it} = Stochastic error term for any unit (firm/country) "i" at time period "t"

ε_{it} = Composite error term for any unit (firm/country) "i" at time period "t"

To test the direct impact of country specific factors in each block our random effects model takes the form

$$\begin{aligned}\sum_{LDBTA_{i,t}} &= \alpha + \beta_1 LEGL_{i,t} + \beta_2 CPPI_{i,t} + \beta_3 ECOF_{i,t} + \beta_4 BSAT_{i,t} \\ &+ \beta_5 CMAT_{i,t} + \beta_6 BMAT_{i,t} + \gamma_t + \varepsilon_{it}\end{aligned} \tag{3.13}$$

3.4.6 Breusch-Pagan LM Test for Random Effects

The assumption of homogeneity causes too much information loss in terms of variations among individuals. By making this assumption the true essence of panel data is sacrificed. There are good reasons to believe about unnoticed heterogeneity across sections (e.g. firms and countries). Therefore the results of the pooled OLS are suspicious and cannot be straight away accepted. To decide whether common constant model is fit to use or proceed for random effects, we use Breusch-Pagan Lagrange Multiplier Test for random effects. The underlying Hypotheses of Breusch-Pagan LM test is as follow

H_0: Variances across all cross-sectional units are zero.

H_1: Variances across all cross-sectional units are non-zero.

3.4.7 Fixed Effect Model Vs. Error Component Model and the Hausman Test

Hausman (1978) test has been used to decide whether the assumptions made for Random effect model hold true or otherwise. Basically Hausman statistic tests whether OLS or GLS would produce BLUE parameter estimates. The underlying hypothesis of Hausman statistic is

H_0: Entity specific effects (ε_i) are independently distributed (Random Effects are there)

H_1: Entity specific effects (ε_i) are not independently distributed (Fixed Effects are there)

In case of significant Hausman F-statistic we reject the null hypothesis and use fixed effects. Otherwise random effect model is used.

Chapter 4

Results

This chapter is about presentation and discussion of results. This chapter can be divided into three main sections. First section of this chapter presents and very briefly discusses descriptive statistics, correlation matrix and firm specific regression results for all the 27 countries separately. In second section we compare firm specific regression results across countries. The third section presents and discusses the direct impact of country specific effects on long term leverage ratio in developed, emerging and developing blocks.

4.1 US Results

4.1.1 Descriptive Summary and Correlation Matrix for US Firms

The descriptive statistics for 1510 US firms with a total of 13956 observations over 2006-16 have been presented in table 4.1. The table displays the overall mean, median, std.dev, minimum and maximum for 09 firm specific explanatory and 02 explained variables. Furthermore the "overall", "between" and "within" breakups for standard deviation, minimum and maximum have also been shown in the said table. The "between" variation shows how the values vary overtime from firm to firm and the "within" variation means how individual observations vary from the overall mean.

Median and Mean values of long term debt over total assets (LDBTA) across firms and data period are 0.235 and 0.250 respectively. LDBTA across US sample firms has an overall standard deviation of 0.182 with an overall minimum and maximum of 0.000 and 0.997 respectively. This means that varieties of firms from all equity to nearly 98% levered firms are included in our sample, or at least at some point of the data period they are all equity or 98% levered. In view of prevailing variations in debt choices we should rely on median values which are 0.235 for LDBTA. This means that majority of firms in US finance roundly 23.5% of their assets by long term debt. Median and Mean values of short term debt over total assets (SDBTA) are 0.000 and 0.017 respectively. SDBTA across US firms has an overall standard Deviation of 0.051 with an overall minimum and maximum of 0.000 and 0.923 respectively. Short term debt percentage also shows remarkable variation from firm to firm. It varies from 0% to 92.3%. However SDBTA represents 0% (when rounded to three decimal places) of short term leverage is use by majority of US firms. Examining the variation breakups reveal that most of the variation in all the variables is "between" variation. The reason may be that firms setup their leverage strategies independent from each other. Therefore we see most of variation is from cross-section to cross-section.

Table 4.1: Descriptive Statistics for US Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.235	.250	.182	.000	.997
	between			.170	.000	.967
	within			.086	-.321	.849
SDBTA	overall	.000	.017	.051	.000	.923
	between			.047	.000	.548
	within			.027	-.383	.503
NDTS	overall	.036	.043	.030	.000	.495
	between			.028	.000	.358
	within			.012	-.080	.379
TANG	overall	.248	.332	.258	.000	.990
	between			.251	.000	.985
	within			.050	-.088	.942
UNIQ	overall	.157	.184	.153	.000	.986
	between			.158	.000	.949

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.034	-.236	.818
SIZE	overall	7.451	7.306	2.078	.052	12.909
	between			2.190	.258	12.590
	within			.346	4.540	11.171
EVOL	overall	.017	.028	.041	.000	.879
	between			.048	.001	.817
	within			.028	-.264	.674
GROW	overall	.038	.053	.055	.000	.778
	between			.048	.001	.450
	within			.030	-.188	.655
PROF	overall	.123	.134	.072	.000	.805
	between			.059	.000	.478
	within			.044	-.245	.669
LIQD	overall	1.677	1.874	.971	.000	4.998
	between			.918	.068	4.991
	within			.481	-.748	4.915
DIVP	overall	.144	.301	.365	.000	1.000
	between			.298	.000	1.000
	within			.207	-.608	1.210

Table presents summary statistics for 1510 US firms using annual data 2006-2016

Table 4.2 presents the correlation coefficients between the explained and firm specific explanatory variables for US firms used in the analysis. The matrix shows that long term debt to asset ratios (LDBTA) are positively correlated with non NDTS, TANG, , SIZE, GROW and DIVP, and negatively correlated with PROF, LIQD, UNIQ and EVOL. However SDBTA exhibits positive correlation only with DIVP and EVOL and negative correlation with the rest of explanatory variables.

As far as multicollinearity is concerned we see somewhat higher correlation coefficients for UNIQ-TANG, GROW-TANG and GROW-NDTS. Alternative proxies didn't make any significant difference. But all these correlation coefficients are far below than problematic level (0.9). Generally serious multicollinearity issues arise when correlation coefficient 'r' value exceeds 0.9 or VIF value approaches to 10 (Asteriou, 2007). Thus we argue that all our correlation coefficients are far below the threshold level. We also checked VIF values and found less than 5. Based on Asteriou (2007), VIF and threshold value for coefficients of correlation suggest that there is no serious multicollinearity issue.

Table 4.2: Correlation Matrix for US Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.101*	1.000									
NDTS	.128*	-.112*	1.000								
TANG	.279*	-.058*	.347*	1.000							
UNIQ	-.146*	-.024*	.028*	-.454*	1.000						
SIZE	.229*	-.093*	-.136*	.161*	-.260*	1.000					
EVOL	-.111*	.034*	.193*	-.062*	.156*	-.332*	1.000				
GROW	.070*	-.053*	.433*	.570*	-.193*	.015	.090*	1.000			
PROF	-.066*	-.076*	.223*	-.055*	.065*	.006	.124*	.187*	1.000		
LIQD	-.296*	-.183*	-.118*	-.359*	.226*	-.268*	.111*	-.165*	.086*	1.000	
DIVP	.128*	.017	-.074*	.323*	-.240*	.278*	-.138*	.031*	-.105*	-.227*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*
Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables.
The sample contains 1510 US firms using annual data from 2006 to 2016.

4.1.2 Regression Results for US Firms

Tables 4.3 and 4.4 presents the regression results both for LSDV (fixed effects) and error component model (random effects) to test the impact of firms' specific attributes on long term debt ratios (LDBTA) and short term debt (SDBTA) in United States. In both cases Breusch-Pagan Lagrange Multiplier Test for random effects rejects our null hypotheses of zero crossectional variances across. Besides that the assumption of homogeneity across crossectional units in panel data is restrictive in nature and mostly not reported. Hence we are not reporting our results for common constant model. Hausman test is reported for both the models in both tables. Under Hausman test we reject our null hypotheses regarding independent distributions of entity specific effects (ε_i). Therefore we only explain coefficients of fixed effects model. In the subsequent results for other countries we follow the rule of explaining the results suggested under Hausman test statistic only.

Non debt tax shield (NDTS) works as substitute of interest tax shields. Therefore firms are expected to restrict leverage in presence of higher non debt tax shields (tax substitution hypothesis). As per table 4.3, NDTS has highest positive and robust coefficient. This implies that American non financial firms use more long term debt (LDBTA) even when depreciation and amortization expenses are high. This pattern is both in contradiction with tax substitution hypothesis and trade-off theory (H1). These results are also contrary to previous studies (e.g. DeAngelo & Masulis, 1980; Wald, 1999). The reason may be that proxies of non debt tax shields closely correlate with assets tangibility and according to Scott (1979) firms having tangible assets (means more depreciation and more non debt tax shields) can borrow at reasonably lower rates. Thus such firms with non debt tax shields can employ more debt in capital structure. Similar results have been reported by Bradley et al. (1984).

Size is considered as inverse proxy of bankruptcy costs (De Jong et al., 2008) hence larger firms can afford higher leverage. Positive and robust regression coefficient of firm size indicates that large non financial US firms make more use of long term leverage than their smaller counterparts, which supports H4. This pattern is in accordance with trade-off theory and in line with prior studies (Friend & Lang, 1988; Frank & Goyal, 2009; Fama & French, 2002; Wald, 1999).

Positive and significant regression coefficient of business risk (EVOL) reveals that American firms borrow more long term debt when earning volatility is high. This relationship is highly significant with probability of 1% error. Aggressive borrowing during periods of high earning volatility is contradiction of trade-off theory (H5) and prior literature (i.e. Fama & French, 2002; Frank & Goyal, 2009; Handoo & Sharma, 2014; Karacaer et al, 2016; Lemmon et al., 2008). However the same relationship in the US is in conformance with pecking order and many previous empirical studies (Kim & Sorensen, 1986; Nguyen & Ramachandran, 2006).

Our results show that US firms with higher growth opportunities make less use of long term debt, which is consistent with H6. Trade-off framework also expects growing firms to be less levered because growing firms are considered to be more risky than mature firms. Similar results have been reported in previous studies (e.g. Booth et al., 2001; Shyam-Sunder & Myers, 1999; Rajan & Zingales, 1995). Our results are contrary to pecking order and prior literature (i.e. Filsaraei et al., 2016; Kester, 1986; Michaelas et al., 1999; Wald, 1999).

As per our results profitable US firms use significantly lower level of long term leverage, which is contrary to H7. This implies that US firms prefer to avoid risky options and cost of information asymmetry when least risky options of financing are available internally. Negative and robust relationship between profitability and long term debt in the US is opposite to the predictions of trade off and some prior literature (i.e. Frank & Goyal. 2009; Long & Malitz, 1988). We argue that US non financial firms care more about cost of financial distress than high tax advantages when profitability is high. Our results in this regard are consistent with pecking order hypothesis and prior literature (Booth et al., 2001; Chaplinsky & Niehaus, 1993; Harris & Raviv, 1991 Shyam-Sunder & Myers, 1999; Supanvanij, 2006; Titman & Wessels, 1988; Wald, 1999).

Liquidity (LIQD) shows negative and highly significant (99%) coefficients for firms in the United States, which is inconsistent with H8. This means that highly liquid non financial US firms use less long term debt than their illiquid counterparts.

These results imply that managers accumulate liquid reserves using retained earnings for internal financing abilities to avoid cost of issuing new debt. These results confirm the predictions of pecking order hypothesis and are in line with previous research (Antoniou et al., 2002; Karacaer et al., 2016; Niu, 2009; Ozkan, 2001). Negative and highly significant coefficient of LIQD does not support the predictions of trade off and other empirical findings (like Harris & Raviv, 1990; Shleifer & Vishny, 1992; Feidakis & Rovolis, 2007).

Regression results also reveal that higher dividend paying non financial firms in the US employ more long term leverage, as indicated by positive coefficient of DIVP. This relationship is slightly significant and moderate at 90% confidence interval. These results are contrary to previous literature (i.e. Frank & Goyal, 2009; Yang et al., 2015) but in line with the trade off predictions and findings reported by Chang and Rhee (1990). Few studies like Lee and Xing (2004) and Chen et al. (2009) also suggest positive dividend-leverage relationship but suspect that firms may use dividends as means of profit channeling to shareholders. Ignoring the prospect of profit channeling in the US, we take positive DIVP-LDBTA relationship as an extension of trade off and accept our H9 in case of US firms.

We found no significant evidence regarding impact of asset structure (H2) and uniqueness (H3) on long term leverage in the US.

Table 4.4 presents the regression results both for LSDV (fixed effects) and error component model (random effects), to test the impact of firms' specific attributes on short term debt (SDBTA) in United States. Hausman test recommends the fixed effects model as appropriate model for prediction. As per fixed effects in table 4.4, only three firm specific attributes are significantly influencing choice of short term leverage in American non financial firms.

Wijst and Thurik (1993) suggest that firms with more tangible assets use less short term debt in the Netherlands. American results confirm these findings. As indicated by negative and robust coefficient of TANG, results show that firms with more tangible assets make less use of short term debt. Thus we suggest that trade off does not hold in this particular case. Thus we reject our H2 regarding positive TANG-SDBTA relationship.

Table 4.3: Regression Results for US Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.424***	(.111)	.394***	(.102)
TANG	.028	(.033)	.069***	(.022)
UNIQ	-.061	(.055)	-.037	(.034)
SIZE	.046***	(.007)	.028***	(.003)
EVOL	.125***	(.046)	.099**	(.044)
GROW	-.121***	(.043)	-.139***	(.042)
PROF	-.237***	(.037)	-.231***	(.034)
LIQD	-.019***	(.003)	-.021***	(.003)
DIVP	.009*	(.004)	.007	(.006)
Observations	13,956		13,956	
Number of id	1,510		1,510	
R-squared (Within)	.116		.111	
Between	.120		.158	
Overall	.102		.136	
F_Stat/Wald_Chi^2	65.16 (.000)		1826.10 (.000)	
rho	.798		.75	
Hausman_Chi^2	340.99 (.000)			
Breusch Pagan LM	29416.95 (.000)			
Alphafehat (Mean)	-3.09^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Wijst and Thurik, (1993) suggest that highly liquid firms may afford higher level of short term borrowings than their illiquid counterparts. However negative and robust coefficient of LIQD suggests that highly liquid American firms avoid using higher levels of short term borrowings, which contradicts H8. Many prior studies (Garcia-Teruel & Martinez-Solano, 2004; Ozkan, 2000; Scherr and Hullburt, 2001) support our results.

Results show that American firms paying higher portions of their earnings as dividends make more use of short term debt. This particular relationship is significant at 95% confidence interval. The reason may be that dividend paying firms are mostly mature with stable cash flows and less prone to financial distress. In this regard our results are both in compliance with trade off predictions and H9.

The rest of coefficients (H1, H3, H4, H5, H6, and H7,) are insignificant and have minimal or no potency to predict SDBTA.

TABLE 4.4: Regression Results for US Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	-.001	(.026)	-.046**	(.022)
TANG	-.026***	(.009)	-.028***	(.006)
UNIQ	-.014	(.013)	-.016**	(.008)
SIZE	-.003	(.002)	-.004***	(.001)
EVOL	.031	(.021)	.033	(.021)
GROW	.001	(.011)	.002	(.010)
PROF	-.013	(.012)	-.017	(.011)
LIQD	-.016***	(.001)	-.015***	(.001)
DIVP	.005**	(.002)	.005**	(.002)
Observations	13,956		13,956	
Number of id	1,510		1,510	
R-squared (Within)	.087		.086	
Between	.078		.97	
Overall	.073		.084	
F_Stat/Wald_Chi^2	47.04(.000)		1324.60 (.000)	
rho	.734		.713	
Hausman_Chi^2	48.07 (.000)			
Breusch Pagan LM	27997.7 (.000)			
Alphafehat (Mean)	-5.76^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Regression results for LDBTA and SDBTA reveals that firm specific factors are more strongly reflected in decisions related to long term debt financing than short run in United States.

4.2 UK Results

4.2.1 Descriptive Summary and Correlation Matrix for UK Firms

Table 4.5 shows the descriptive summary for 362 UK firms with a total of 3493 observations over 2006-16. Median and Mean values of long term debt over total assets (LDBTA) across firms and data period are 0.187 and 0.216 respectively. LDBTA across UK firms has an overall standard deviation of 0.165 with an overall minimum and maximum of 0.000 and 0.954 respectively. In terms of leverage variation we state that our sample exhibits firms, which shows zero leverage to 95.4% leverage at least at some point of our data period. Relying on median values we say that firms in UK finance 18.7% of their assets with long term debt. Median and Mean values of short term debt over total assets (SDBTA) are 0.004 and 0.027 respectively. SDBTA across UK firms has an overall standard Deviation of 0.055 with an overall minimum and maximum of 0.000 and 0.591 respectively.

The descriptive summary of UK firms also reveals that most of the variation in all the variables is "between" variation. In line with US results, UK's results also reveal that most of the variation is from overall mean (within).

Table 4.5: Descriptive Statistics for UK Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.187	.216	.165	.000	.954
	between			.148	.001	.870
	within			.082	-.376	.750
SDBTA	overall	.004	.027	.055	.000	.591
	between			.041	.000	.446
	within			.037	-.419	.403
NDTS	overall	.033	.039	.026	.000	.231
	between			.024	.001	.187
	within			.011	-.040	.126
TANG	overall	.214	.277	.245	.000	.966
	between			.241	.002	.949
	within			.050	-.101	.743

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	overall	.198	.221	.175	.000	.944
	between			.170	.000	.870
	within			.065	-.278	.963
SIZE	overall	6.114	6.103	2.329	.186	12.927
	between			2.412	.249	12.673
	within			.328	4.072	7.906
EVOL	overall	.015	.025	.039	.000	.998
	between			.044	.002	.586
	within			.028	-.192	.868
GROW	overall	.030	.043	.044	.000	.555
	between			.034	.001	.208
	within			.028	-.096	.424
PROF	overall	.115	.127	.067	.000	.580
	between			.057	.016	.390
	within			.037	-.050	.443
LIQD	overall	1.228	1.358	.720	.070	4.958
	between			.673	.194	4.063
	within			.355	-1.449	3.540
DIVP	overall	.337	.365	.345	.000	1.000
	between			.269	.000	1.000
	within			.223	-.517	1.274

Table presents summary statistics for 362 British firms using annual data 2006-2016

Correlation matrix (4.6) for UK firms presents the correlation coefficients between the explained and firm specific explanatory variables. The matrix shows LDBTA is positively correlated with NDTS, TANG, SIZE, GROW and DIVP and negatively correlated with UNIQ, EVOL and LIQD. However SDBTA exhibits positive correlation only with UNIQ and EVOL and negative correlation with the rest of explanatory variables.

Generally serious multicollinearity issues arise when correlation coefficient ‘r’ value exceeds 0.9 or VIF value approaches to 10 (Asteriou, 2007). Thus we argue that all our correlation coefficients are far below the threshold level suggested by Asteriou (2007). VIF values were also checked and found less than 3 hence no serious issue of multicollinearity is there in the data.

TABLE 4.6: Correlation Matrix for UK Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.154*	1.000									
NDTS	.121*	-.012	1.000								
TANG	.300*	-.049*	.147*	1.000							
UNIQ	-.138*	.019	.038*	-.244*	1.000						
SIZE	.286*	-.133*	-.001	.209*	-.315*	1.000					
EVOL	-.001	.088*	.097*	-.062*	.117*	-.254*	1.000				
GROW	.110*	-.044*	.362*	.462*	-.092*	.094*	.024	1.000			
PROF	-.102*	-.093*	.387*	.019	-.036*	.162*	.058*	.287*	1.000		
LIQD	-.141*	-.167*	-.148*	-.153*	.025	-.113*	.024	.005	.079*	1.000	
DIVP	.187*	-.129*	.060*	.090*	-.103*	.334*	-.154*	.039*	.063*	-.081*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*
Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables.
The sample contains 362 UK firms using annual data from 2006 to 2016.

4.2.2 Regression Results for UK Firms

Table 4.7 presents the regression results both for fixed effects and random effects to test the impact of firms' specific attributes on long term debt ratios (LDBTA) in United Kingdom. Breusch-Pagan Lagrange Multiplier Test for random effects rejects our null hypotheses of zero crossectional variances across. Under Hausman test we reject our null hypotheses regarding independent distributions of entity specific effects (ε_i).

Results of fixed effect model reported in Table 4.7 reveal that asset structure is significantly affecting long term debt in non financial firms of UK. Positive and slightly robust coefficient of TANG means that firms with greater tangible assets use more long term leverage than firms with low asset tangibility, which supports H2. These results justify the theoretical predictions of trade off. Many previous studies (Bevan & Danbolt, 2004; Booth et al., 2001; Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999) also support our findings.

Negative and moderately robust regression coefficient of uniqueness suggests that unique British firms avoid employing more debt. This particular pattern is consistent both with trade off and H3. Titman and Wessels (1988) suggest that unique firms are more expose to higher costs of financial distress than common firms. Hence to avoid bankruptcy such unique firms are expected to use less leverage. Our findings are in line with Titman and Wessels (1988).

According to trade off predictions larger firms are more able to make diversified portfolios and decrease risk of financial distress as a consequence larger firms can afford to enjoy benefits of financial leverage. Positive regression coefficient of firm size indicates that large non financial firms in the UK make more use of long term leverage than their smaller counterparts. This relationship is highly robust and in accordance with trade-off theory (H4). Our findings can be supported by prior findings (Frank & Goyal, 2009; Wald, 1999).

According to trade off borrowing increases risk of financial bankruptcy even further if earning volatility is already higher. However positive and significant regression coefficient of earning volatility reveals that British firms borrow more long term debt when earning volatility is high. This relationship is slightly significant with probability of 10% error. Aggressive borrowing during periods of high earning volatility in the UK is contrary to trade-off theory (H5). However consistent with pecking order, similar results are reported by previous studies (MacKie-Mason, 1990; Nguyen & Ramachandran, 2006).

Results also suggest that profitable British firms use significantly lower level of long term leverage. This implies that UK firms prefer to use least risky options of financing using internal resources and avoid risky options and cost of information asymmetry. This observed pattern in the UK is opposite to the predictions of trade off (H7) and some prior literature (i.e. Frank & Goyal. 2009; Long & Malitz, 1988). Our results regarding negative leverage-profitability relationship are consistent with pecking order hypothesis and literature (i.e. Frank & Goyal, 2009; Ozkan, 2001; Shyam-Sunder & Myers, 1999).

Results suggest that rest of the explanatory variables such as NDTS, GROW, LIQD and DIVP have no significant potency to determine long term debt in the UK.

Table 4.8 presents the regression results both for fixed effects and random effects, to test the impact of firms' specific attributes on short term debt (SDBTA) in United Kingdom. Hausman test recommends the fixed effects model as appropriate model for prediction. Fixed effects in table 4.8 show that only asset structure (TANG), profitability (PROF) and liquidity (LIQD) are the three firm specific attributes that significantly influence choice of short term leverage in British firms.

Results show that British firms with more tangible assets make less use of short term debt, as indicated by negative coefficient of TANG. This relationship is highly significant at 99%. Trade off expects firms with higher assets tangibility to be more levered because tangible assets serve as a good collateral. But we suggest that trade off (H2) does not hold. Wijst and Thurik (1993) reports similar findings regarding asset structure and short term debt in the Netherlands.

Negative and slightly significant (90%) slope of PROF reveals that highly profitable firms in the UK are less reliant on short term external debt. Again this

Table 4.7: Regression Results for UK Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.144	(.281)	.201	(.237)
TANG	.143*	(.082)	.137***	(.043)
UNIQ	-.079**	(.034)	-.056*	(.029)
SIZE	.038***	(.012)	.020***	(.004)
EVOL	.232*	(.128)	.271*	(.140)
GROW	.051	(.098)	.029	(.096)
PROF	-.145**	(.091)	-.127*	(.086)
LIQD	-.006	(.007)	-.007	(.006)
DIVP	.015	(.011)	.018*	(.010)
Observations	3,493		3,493	
Number of id	362		362	
R-squared (Within)	.074		.069	
Between	.136		.173	
Overall	.139		.158	
F_Stat/Wald_Chi^2	12 (.000)		310.3 (.000)	
rho	.760		.682	
Hausman_Chi^2	44.45 (.000)			
Breusch Pagan LM	6775.8 (.000)			
Alphafehat (Mean)	1.49^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

observed pattern negate the theoretical predictions of trade off. Similar findings have been reported by Wijst and Thurik (1993). Thus we suggest that H7 cannot be substantiated.

Although trade off expects that highly liquid firms have more ability to service debt, hence liquid firms should borrow more. However in contradiction with trade off (H8) our results suggest that highly liquid British firms are least levered. These findings are in line with pecking order and Scherr and Hullburt (2001).

The rest of coefficients are insignificant and have minimal or no potency to predict SDBTA in the UK.

TABLE 4.8: Regression Results for UK Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.153	(.103)	.049	(.071)
TANG	-.077***	(.023)	-.028***	(.009)
UNIQ	.016	(.014)	.000	(.010)
SIZE	-.002	(.004)	-.002**	(.001)
EVOL	.010	(.041)	.027	(.038)
GROW	.023	(.034)	.013	(.029)
PROF	-.041*	(.024)	-.049**	(.021)
LIQD	-.029***	(.004)	-.024***	(.003)
DIVP	-.004	(.003)	-.004	(.003)
Observations	3,493		3,493	
Number of id	362		362	
R-squared (Within)	.094		.090	
Between	.036		.063	
Overall	.038		.058	
F_Stat/Wald_Chi^2	15.4 (.000)		305.1 (.000)	
rho	.587		.495	
Hausman_Chi^2	59.26 (.000)			
Breusch Pagan LM	3631.74 (.000)			
Alphafehat (Mean)	-1.14^{-10}			

Robust standard errors in parentheses
*** $p < .01$, ** $p < .05$, * $p < .1$

In line with United States, regression results show that firm specific factors are more strongly reflected in decisions related to long term debt financing than short run in the UK as well.

4.3 Japanese Results

4.3.1 Descriptive Summary and Correlation Matrix for Japanese Firms

The descriptive statistics for 1214 Japanese firms with a total of 12221 observations over 2006-16 have been presented in table 4.9.

Median and Mean values of LDBTA across firms and data period are 0.132 and 0.160 respectively. LDBTA across Japanese sample firms has an overall standard deviation of 0.127 with an overall minimum and maximum of 0.000 and 0.874 respectively. This means that our sample for Japanese some firms have zero leverage at some point, while some firms are as much levered as 87.4%. Based on median LDBTA values we say that majority of Japanese firms finance 13.2% of their total assets trough long term debt. Long term debt ratios and its overall standard deviation in Japan are lower than that in US and UK.

Median and Mean values of short term debt over total assets (SDBTA) are 0.073 and 0.096 respectively. SDBTA across Japanese firms has an overall standard Deviation of 0.090 with an overall minimum and maximum of 0.000 and 0.637 respectively. Comparing these descriptive with US and UK we see that Japanese firms use more short term debt than US and UK firms with slightly higher overall standard deviations.

The descriptive summary for Japanese firms to somewhat reveals different variations break-ups than US and UK. For example “between” and “within” variations in both EVOL and GROW are roughly equal. DIVP shows more “within” variation than “between” variation. The rest of variables exhibit more “between” variation (similar to UK and US). The difference between these differences may the financial system of Japanese economy.

Table 4.9: Descriptive Statistics for Japanese Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.132	.160	.127	.000	.874
	between			.117	.000	.697
	within			.048	-.190	.484
SDBTA	overall	.073	.096	.090	.000	.637
	between			.080	.000	.439
	within			.041	-.133	.554
NDTS	overall	.034	.037	.022	.000	.266
	between			.020	.002	.120
	within			.009	-.037	.247
TANG	overall	.326	.347	.174	.002	.936
	between			.169	.011	.912
	within			.039	-.118	.831
UNIQ	overall	.161	.182	.116	.000	.747

Variable		Median	Mean	Std. Dev.	Min	Max
	between			.115	.007	.694
	within			.021	-.058	.604
SIZE	overall	11.155	11.389	1.657	7.218	17.702
	between			1.653	7.725	17.404
	within			.170	9.112	12.809
EVOL	overall	.011	.016	.016	.000	.275
	between			.011	.001	.128
	within			.012	-.107	.163
GROW	overall	.032	.040	.034	.000	.420
	between			.025	.001	.147
	within			.023	-.091	.407
PROF	overall	.079	.084	.043	.000	.419
	between			.035	.013	.255
	within			.025	-.070	.296
LIQD	overall	1.406	1.545	.729	.114	4.973
	between			.690	.208	4.891
	within			.292	-.426	4.751
DIVP	overall	.258	.361	.305	.000	1.000
	between			.168	.000	.960
	within			.256	-.374	1.270

Table presents summary statistics for 1214 Japanese firms using annual data 2006-2016

Table 4.10 presents the correlation coefficients between the 02 explained and 09 firm specific explanatory variables for Japanese firms used in the analysis. LDBTA is positively correlated with NDTS, TANG, EVOL, GROW, DIVP and negative with the rest with exception to SIZE and negative with the rest of 03 variables. Short term debt to asset ratios (SDBTA) show positive correlation coefficient with tangibility, earning volatility and dividend payout per share in Japanese firms. SDBTA is negatively associated with the rest of explanatory variables.

As per Asteriou (2007) criteria (r=09 or VIF=10) for serious multicollinearity, some seemingly higher correlation coefficients in the matrix pose no serious issue of multicollinearity.

TABLE 4.10: Correlation Matrix for Japanese Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	.037*	1.000									
NDTS	.224*	-.082*	1.000								
TANG	.442*	.049*	.390*	1.000							
UNIQ	-.003	-.107*	.061*	-.083*	1.000						
SIZE	.123*	-.188*	.170*	.011	-.139*	1.000					
EVOL	.017	.031*	.165*	-.107*	.061*	-.127*	1.000				
GROW	.183*	-.099*	.535*	.387*	-.040*	.155*	.044*	1.000			
PROF	-.070	-.275*	.511*	.067*	.092*	.139*	.149*	.354*	1.000		
LIQD	-.363*	-.424*	-.107*	-.442*	.188*	-.050*	.114*	-.101*	.188*	1.000	
DIVP	.047*	.018*	.085*	.031*	.102*	.026*	.003	.014	-.278*	.005	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*
Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables.
The sample contains 1214 Japanese firms using annual data from 2006 to 2016.

4.3.2 Regression Results for Japanese Firms

Table 4.11 presents the regression results both for fixed effects and random effects to explore the likely impact of firms' specific attributes on long term debt ratios (LDBTA) for Japanese non financial sector. Breusch-Pagan Lagrange Multiplier Test for random effects rejects our null hypotheses of zero crossectional variances across. Under Hausman test we reject our null hypotheses regarding independent distributions of entity specific effects (ε_i).

Table 4.11 reports positive and highly robust coefficient of non debt tax shield (NDTS), which rejects H1. These results suggest that Japanese firms use more debt when depreciation and amortization expenses are high. According to trade off a firm having enough non debt tax shield should restrict borrowing, because firm can get the same benefit without any increase in probability of financial distress. Thus we argue that tax substitution (DeAngelo & Masulis, 1980) under trade off theory is not valid in case of Japanese non financial sector. Similar results have been reported in studies (e.g. Barclay et al., 1995; Bradley et al., 1984; Chaplinsky & Niehaus, 1993; Chang et al., 2009) previously.

Asset tangibility in Japan is significantly affecting long term debt in non financial firms. Positive coefficient of tangibility means that firms with higher tangible assets use more long term leverage in Japan. This relationship is highly robust at 99%. These results justify the theoretical predictions of trade off (H2). A number of previous studies (Bevan & Danbolt, 2004; Booth et al., 2001; Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999) support our findings.

Results suggest that unique non financial firms in the Japan restrict debt in their capital structures. This particular relationship is moderately significant at 95% confidence. Titman and Wessels (1988) suggest that unique firms are more expose to higher costs of financial distress than common firms. Hence to avoid bankruptcy unique firms are expected to use less leverage. Our findings are in line with (i.e. Frank & Goyal, 2009; Titman & Wessels, 1988) and trade off predictions (H3).

Regression results also show that large Japanese firms in non financial sector are more levered than smaller firms, which is in line with H4. This particular relationship is highly robust at 99% confidence. Positive size coefficient is in accordance with trade-off theory and prior literature (Frank & Goyal, 2009; Wald, 1999).

In contradiction to trade-off theory, the regression coefficient for earning volatility (EVOL) is positive and robust with 95% probability. These results suggest that Japanese firms borrow aggressively in periods of high earning volatility. Similar findings have been reported in previous studies (MacKie-Mason, 1990; Nguyen & Ramachandran, 2006). Thus under trade-off framework H5 does not hold grounds in Japan.

Japanese results show that profitable firms use significantly lower level of long term leverage as indicated by negative and highly robust coefficient of PROF. This particular pattern suggests that profitable firms in Japan prefer least risky internal resources of financing than debt. These predictions are in line with a number of prior studies (e.g. Akhtar & Oliver, 2009; Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016; Lemmon et al., 2008; Ozkan, 2001; Shyam-Sunder & Myers, 1999) and consistent with pecking order. Therefore in regards to profitability-leverage relationship, we say that trade off (H7) is not valid in Japan.

More liquidity implies that a firm is less likely to face financial bankruptcy. Therefore trade off predicts that higher liquid firms can afford higher financial leverage. Japanese regression results reveal highly liquid non financial Japanese firms use more long term debt than their illiquid counterparts, which supports H8. This observed pattern is strong and highly significant (99%) as indicated by positive slope of liquidity. Previous empirical results (Feidakis & Rovolis, 2007; Harris & Raviv, 1990) confirm these findings.

Dividend paying firms are expected to be profitable and mature (Gaver & Gaver, 1993). As probability of financial distress is lower for profitable firms then according to trade off, dividend paying firms are expected to afford more long term leverage. However regression results reveal that higher dividend paying firms in Japan employ less long term leverage. This relationship is moderately significant at 95% confidence interval. Thus H9 under trade off in Japan can be disapproved.

Our findings are in agreement with Frank and Goyal (2009); Yang et al. (2015) and contrary to Chen et al. (2009). We found no support regarding H6 in Japanese non financial sector.

TABLE 4.11: Regression Results for Japanese Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.362***	(.124)	.326***	(.116)
TANG	.227***	(.029)	.249***	(.022)
UNIQ	-.086**	(.043)	-.023	(.027)
SIZE	.036***	(.009)	.017***	(.003)
EVOL	.192**	(.092)	.185**	(.089)
GROW	-.012	.032)	-.006	(.031)
PROF	-.479***	(.041)	-.470***	(.039)
LIQD	.010***	(.004)	.004	(.003)
DIVP	-.008**	(.003)	-.008***	(.003)
Observations	12,221		12,221	
Number of id	1,214		1,214	
R-squared (Within)	.129		.123	
Between	.122		.223	
Overall	.123		.211	
F_Stat/Wald_Chi^2	81.4 (.000)		1909 (.000)	
rho	0.852		.803	
Hausman_Chi^2	381.1(.000)			
Breusch Pagan LM	34943(.000)			
Alphafehat (Mean)	3.06^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Regression results to test the impact of firms' specific attributes on short term debt (SDBTA) in Japanese firms are illustrated in Table 4.12. Fixed effects report that asset tangibility, size, growth, profitability and liquidity are five significant determinants of short term borrowings in Japan. Results show that TANG and PROF are negative and highly significant at 99%. This implies that as asset tangibility and profitability increases, firms need for short term borrowings declines, which is contradictory to trade off (H2 & H7). Previous studies (i.e. Wijst & Thurik, 1993; Scherr & Hullburt, 2001) confirm our results.

Large firms are expected to deal easily with bankruptcy costs (Titman & Wessels, 1988) hence trade off expects large firms to use higher financial leverage. Slope of SIZE shows significant (95%) positive impact on SDBTA in Japanese case. This implies that larger Japanese firm use more short term leverage than their smaller counterparts. Thus H4 validates trade off in case in Japan.

Growth firms are expected to have more uncertainty in comparison to mature firms. Therefore under trade off framework growing firms should be less reliant on financial leverage. Japanese output as indicated by negative and robust coefficient of growth options implies that growing Japanese firms restrict long term borrowing, which supports trade off (H6). These findings are contradictory to Barclays and Smith (1995) results suggesting firms with fewer investment opportunities are less levered.

Finally our results suggest that higher liquid firms avoid using higher short term debt ratios in Japan. This pattern is highly significant and contradictory to trade off (H8). Our findings are in line with those of Ozkan (2000). The rest of coefficients have no significant potential to determine short term debt ratios in Japan.

TABLE 4.12: Regression Results for Japanese Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.125	(.082)	.109	(.074)
TANG	-.107***	(.021)	-.097***	(.015)
UNIQ	.049	(.026)	.009	(.016)
SIZE	.011**	(.005)	.005***	(.001)
EVOL	.118*	(.055)	.098*	(.055)
GROW	-.051**	(.022)	-.044**	(.021)
PROF	-.363***	(.029)	-.374***	(.027)
LIQD	-.065***	(.004)	-.063***	(.003)
DIVP	-.003	(.002)	-.003	(.002)
Observations	12,221		12,221	
Number of id	1,214		1,214	
R-squared (Within)	.319		.3174	
Between	.129		.255	
Overall	.160		.268	
F_Stat/Wald_Chi^2	260 (.000)		5517 (.000)	
rho	.820		.771	
Hausman_Chi^2	71.26 (.000)			
Breusch Pagan LM	32054 (.000)			
Alphafehat (Mean)	1.52^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.4 South Korean Results

4.4.1 Descriptive Summary and Correlation Matrix for South Korean Firms

Table 4.13 is consisting of descriptive summary for 868 non financial Korean firms with a total of 7736 observations over 2006-16. Median and Mean values of long term debt over total assets (LDBTA) across South Korean firms and data period are 0.099 and 0.128 respectively. LDBTA across Korean sample has an overall standard deviation of 0.116 with an overall minimum and maximum of 0.000 and 0.661 respectively. Korean firm also use lower long term debt than their counterparts in US and UK.

Median and Mean values of short term debt over total assets (SDBTA) are 0.128 and 0.149 respectively. SDBTA across Korean firms has an overall standard deviation of 0.119 with an overall minimum and maximum of 0.000 and 0.662 respectively. A comparison of long term and short term debt financing for Korean firms reveal that Korean firms on average use more short term debt than long term. Average and median short term debt ratios in Korea are far greater than firms in US and UK.

The descriptive summary South Koran firms show that overall variation in DIVP is roughly equal “between” and “within”. The same is also revealed in the descriptive summaries of USA, UK and Japan. For the rest of variables most of variation generates from “between”.

Table 4.13: Descriptive Statistics for South Koran Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.099	.128	.116	.000	.661
	between			.092	.000	.598
	within			.069	-.169	.576
SDBTA	overall	.128	.149	.119	.000	.662
	between			.100	.000	.567
	within			.068	-.212	.532
NDTS	overall	.030	.037	.030	.000	.719
	between			.025	.001	.248

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.017	-.154	.605
TANG	overall	.359	.362	.178	.001	.946
	between			.164	.003	.896
	within			.079	-.102	.848
UNIQ	overall	.105	.149	.135	.005	.992
	between			.132	.012	.959
	within			.048	-.412	.844
SIZE	overall	12.245	12.570	1.600	9.104	19.385
	between			1.545	9.372	18.850
	within			.404	9.348	14.728
EVOL	overall	.021	.032	.038	.000	.811
	between			.032	.003	.374
	within			.029	-.163	.626
GROW	overall	.038	.057	.061	.000	.694
	between			.038	.000	.417
	within			.047	-.357	.608
PROF	overall	.078	.089	.059	.000	.642
	between			.043	.004	.334
	within			.041	-.125	.567
LIQD	overall	1.291	1.500	.832	.041	4.981
	between			.706	.200	4.685
	within			.481	-1.039	5.216
DIVP	overall	.223	.438	.431	.000	1.000
	between			.305	.000	1.000
	within			.313	-.462	1.347

Table presents summary statistics for 868 South Korean firms using annual data 2006-2016

Table 4.14 presents correlation matrix for Korean firms shows that the correlation coefficients of LDBTA are positive with NDTS, TANG, SIZE and GROW and negative with the rest of independent regressors. SDBTA is positively correlated with EVOL and TANG and negatively correlated with rest of variables.

This matrix shows no significant higher correlation coefficients among explanatory variables that may pose any serious multicollinearity issues. All of our correlation coefficients are far below than threshold (0.9). We also checked VIP values and found them below 5 and insignificant. Hence based on Asteriou (2007), we declare that our data does not suffer from problematic multicollinearity issues.

Table 4.14: Correlation Matrix for South Korean Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.073*	1.000									
NDTS	.162*	-.042*	1.000								
TANG	.359*	.070*	.268*	1.000							
UNIQ	-.015	-.129*	.058*	.112*	1.000						
SIZE	.287*	-.171*	-.029*	.089*	-.045*	1.000					
EVOL	-.014	.017	.091*	-.108*	.032*	-.232*	1.000				
GROW	.186*	-.065*	.375*	.366*	-.015	.001	.046*	1.000			
PROF	-.078*	-.215*	.482*	.027*	.049*	.014	.176*	.313*	1.000		
LIQD	-.322*	-.488*	-.133*	-.359*	.141*	-.179*	.088*	-.095*	.169*	1.000	
DIVP	-.052*	-.039*	.004	.007	-.026*	-.310*	.071*	.030*	.020	.145*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*
Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 868 South Korean firms using annual data from 2006 to 2016.

4.4.2 South Korean Regression Results

Table 4.15 presents the regression results to test the impact of firms' specific attributes on long term debt ratios (LDBTA) in South Korean firms. Both fixed effects and random effects are illustrated in the said table. According to Hausman test fixed effect is the appropriate model for prediction. Table 4.15 reports positive and highly significant (99%) coefficient of non debt tax shield. This means that Korean non financial firms use high long term debt when depreciation expense is higher. Direct relationship between non debt tax shields and long term leverage is in contradiction with trade off (H1) and rules out the tax substitution effect as reported in prior literature (e.g. DeAngelo & Masulis 1980; Deesomsak et al., 2004; Wald, 1999).

Korean results show positive and highly robust coefficient of TANG. This implies that Korean firms with greater tangible assets use more long term leverage than firms with low asset tangibility. These results justify the theoretical predictions of trade off (H2). These findings are also in line with previous studies (Bevan & Danbolt, 2004; Booth et al., 2001; Shyam-Sunder & Myers, 1999).

Unique firms have higher probability of financial distress than common businesses (Frank & Goyal, 2009; Titman & Wessels, 1988)). Thus under trade off proposition unique firms are expected to avoid higher financial leverage. Korean results suggest that firms with unique productions make more use of long term leverage as indicated by robust coefficient of UNIQ. These findings are contradictory to trade off predictions (H3).

Positive regression coefficient of firm size (SIZE) indicates that larger non financial Korean firms make more use of long term leverage than their smaller counterparts. This relationship is highly significant with a confidence level of 99%. This particular Korean pattern is consistent with trade-off theory (H4) and in line with prior studies (e.g. Akhtar & Oliver, 2009; Alves & Ferreira, 2011; Baker & Wurgler, 2002; Bevan & Danbolt, 2002; Wald, 1999). Our results in this regard are contrary previous findings (Kester, 1986; Kim & Sorensen, 1986).

Under theoretical proposition of trade off framework, firms with volatile earnings are expected to restrict long term borrowings, because borrowing can further exacerbate chances of financial distress. However results indicate that Korean firms also borrow aggressively when earning volatility is high. Positive and highly robust coefficient of earning volatility is inconsistent with theoretical proposition (H5). These results are consistent with pecking order and in agreement with previous studies (Boyle & Eckhold, 1997; MacKie-Mason, 1990; Nguyen & Ramachandran, 2006).

Theoretical proposition under trade off expects less financial leverage for growth firms, because such firms are more expose to bankruptcy than mature firms. Highly robust coefficient estimate of growth opportunities suggests that non financial growth firms in South Korea use higher long term leverage. Our findings regarding long term leverage-growth relationship are also opposite to trade off (H6).

Negative and highly significant slope of PROF implies that profitable Korean firms employ more long term leverage than their less or non-profitable counterparts. These results are contradictory to trade off (H7). However consistent with pecking order, similar results are reported in a number of prior studies (e.g. Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016; Lemmon et al., 2008; Michaelas et al., 1999; Ozkan, 2001; Wald, 1999).

The reported slopes for firm liquidity (H8) and dividend payout per share (H9) are insignificant having no potential to influence leverage in Korean non financial sector.

Table 4.16 shows the regression results about the impact of firms' specific attributes on short term debt ratios (SDBTA) in Korean non-Financial sector. The P-value of Hausman test coefficient is significant which means that least square dummy variable is appropriate one for the existing data of South Korean firms. According to fixed effect model a number of firm specific factors predict short term debt in South Korea.

Negative and slightly significant coefficient of TANG shows that firms with more tangible assets make less use of short term debt ratios in South Korea, which

Table 4.15: Regression Results for South Korean Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.397***	(.141)	.408***	(.117)
TANG	.123***	(.024)	.137***	(.019)
UNIQ	.049*	(.027)	.042**	(.019
SIZE	.032***	(.005)	.024***	(.002)
EVOL	.183***	(.039)	.197***	(.039)
GROW	.121***	(.028)	.129***	(.026)
PROF	-.264***	(.030)	-.280***	(.028)
LIQD	-.002	(.003)	-.007***	(.002)
DIVP	.002	(.004)	.002	(.004)
Observations	7,736		7,736	
Number of id	868		868	
R-squared (Within)	.101		.098	
Between	.264		.314	
Overall	.215		.249	
F_Stat/Wald_Chi^2	38.5 (.000)		1170 (.000)	
rho	.569		.495	
Hausman_Chi^2	98.7 (.000)			
Breusch Pagan LM	8326 (.000)			
Alphafehat (Mean)	2.36^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

contradicts trade off (H2). The possible reason may that Korean industrial group based financial system.

Slope of SIZE shows significant (95%) positive impact on short term borrowings, indicating the fact that large firms employ more short term debt. Berger and Udell (1998) report similar results confirming trade off prediction (H4).

Firms with less growth opportunities are likely to use less short term leverage (Barclays & Smith, 1995). However Scherr and Hulburt (2001) expect negative GROW-SDBTA relationship under trade off. Korean regression output reveals that firms having more growth opportunities are less levered. Thus in accordance with trade off, we accept H6.

According to Wijst and Thurik (1993) profitable firms are expected to avoid using short term debt. However trade off suggests that profitable firms have low probability of going into financial distress, hence such firms can enjoy benefits of leverage. Our results regarding short term leverage-profitability relationship does not confirm trade off (H7) in Korean context.

Under trade off framework liquid firms are expected to be highly levered on the virtue of their liquidity. Our results suggest that highly liquid Korean firms avoid using short term leverage as indicated by negative and highly robust liquidity coefficient, which supports (H8). Many prior studies (Ozkan, 2000; Scherr and Hullburt, 2001) also suggest liquid firms are mostly likely less levered.

Trade off predicts positive relationship between dividend payout and leverage. The reason is that dividend paying firms are mostly mature with stable cash flows and less prone to financial distress. However in contradiction to trade off (H9), Korean firms having higher dividend payouts are less levered. Similar findings have also been reported by Frank & Goyal (2009). Non debt tax shields (H1), uniqueness (H3) and business risk (H5) have statistically no potency to determine short term debt ratios in Korea.

Table 4.16: Regression Results for South Korean Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.188	(.141)	.109	(.134)
TANG	-.031*	(.016)	-.031**	(.014)
UNIQ	-.002	(.027)	-.032	(.021)
SIZE	.011**	(.005)	.009***	(.002)
EVOL	.019	(.05)	.007	(.044)
GROW	-.054**	(.023)	-.054**	(.022)
PROF	-.167***	(.027)	-.190***	(.024)
LIQD	-.064***	(.003)	-.067***	(.003)
DIVP	-.008**	(.004)	-.010***	(.003)
Observations	7,736		7,736	
Number of id	868		868	
R-squared (Within)	.270		.261	
Between	.150		.352	
Overall	.173		.322	
F_Stat/Wald_Chi^2	127 (.000)		2881 (.000)	
rho	.699		.594	
Hausman_Chi^2	226.4 (.000)			
Breusch Pagan LM	10117.6 (.000)			
Alphafehat (Mean)	8.23^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.5 Canadian Results

4.5.1 Descriptive Summary and Correlation Matrix for Canadian Firms

Our sample for Canadian non financial firms comprises a total of 315 non financial firms with 2701 observations over 2006 to 2016. Table 4.17 presents the summary statistics for Canadian firms. Median and Mean of long term debt ratios for Canadian firms are 23% and 25% respectively. The overall variation in terms of standard deviation is 17.1% with an overall minimum and maximum of 0 and 98.9% respectively. These statistics are closely resembles to firms in the United States.

The same table reveals that Canadian firms on average use 3% of short term debt financing. However for majority of firms short term debt financing make nearly zero (when rounded) percent of their total assets. The overall standard deviation in short term debt ratios is 7.8%. Looking at minimum and maximum values for SDBTA reveal that firms use 0% to 89.2% short term financing in Canada. It's interesting to see that most of the variation in all the variables is "between" variation. These descriptive results are very much similar to that of US firms.

TABLE 4.17: Descriptive Statistics of Canadian Firms

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.230	.250	.171	.000	.989
	between			.150	.000	.741
	within			.089	.210	.767
SDBTA	overall	.000	.030	.078	.000	.892
	between			.071	.000	.544
	within			.040	.279	.540
NDTS	overall	.042	.052	.039	.000	.571
	between			.038	.000	.301
	within			.018	-.090	.332
TANG	overall	.432	.445	.280	.000	.987
	between			.275	.000	.966
	within			.067	-.018	.877

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	overall	.082	.114	.122	.000	.833
	between			.122	.000	.705
	within			.055	-.207	.561
SIZE	overall	6.957	6.901	1.987	.464	11.386
	between			2.045	.687	11.040
	within			.400	4.592	8.581
EVOL	overall	.020	.035	.046	.000	.725
	between			.060	.002	.618
	within			.031	-.207	.504
GROW	overall	.051	.072	.072	.000	.570
	between			.059	.000	.328
	within			.046	-.147	.385
PROF	overall	.115	.124	.070	.000	.611
	between			.058	.000	.420
	within			.049	-.164	.504
LIQD	overall	1.384	1.583	.932	.000	4.972
	between			.844	.000	4.696
	within			.519	-.409	4.473
DIVP	overall	.254	.411	.411	.000	1.000
	between			.323	.000	1.000
	within			.263	-.489	1.320

Table presents summary statistics for 315 Canadian firms using annual data 2006-2016

To have a feel of multicollinearity issues, correlation matrix between the explained and firm specific explanatory variables for 315 Canadian firms is reported in Table 4.18. The matrix shows that LDBTA is positively associated with NDTS, TANG, SIZE and DIVP and negative with the rest. SDBTA is positively correlated with EVOL and UNIQ and negatively correlated with rest of independent variables.

Generally serious multicollinearity issues arise when correlation coefficient ‘r’ value exceeds 0.9 or VIF value approaches to 10 (Asteriou, 2007). Thus we argue that based on correlation coefficients and VIP factor there are no significant multicollinearity issues among the explanatory variables.

Table 4.18: Correlation Matrix for Canadian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.126*	1.000									
NDTS	.004	-.113*	1.000								
TANG	.166*	-.129*	.381*	1.000							
UNIQ	-.069*	.108*	-.003	-.234*	1.000						
SIZE	.158*	-.230*	-.094*	.204*	-.333*	1.000					
EVOL	-.170*	.018	.252*	.089*	.106*	-.289*	1.000				
GROW	-.038*	-.109*	.405*	.550*	-.080*	.027	.187*	1.000			
PROF	-.135*	-.127*	.334*	.007	-.109*	-.047*	.177*	.223*	1.000		
LIQD	-.322*	-.160*	-.069*	-.167*	.064*	-.170*	.160*	-.097*	.141*	1.000	
DIVP	.195*	-.077*	.004	-.013	-.072*	.205*	-.167*	-.106*	-.002	-.125*	1.000

*** $p < .01$, ** $p < .05$, * $p < .1$

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 315 Canadian firms using annual data from 2006 to 2016.

4.5.2 Canadian Regression Results

Table 4.19 presents the regression results both for fixed effects and random effects to test the impact of firms' specific attributes on long term debt ratios (LDBTA) in Canadian firms. As per fixed effect model, Asset structure is significantly affecting long term debt in non-financial firms of Canada. Positive and slightly robust coefficient of TANG means that firms with greater tangible assets use more long term debt than firms with low asset tangibility. These results justify the theoretical predictions of trade off (H2) and are in line with previous studies (Booth et al., 2001; Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999). In the Canadian context firms' size is another highly significant firm's attribute of long term borrowings. Positive regression coefficient of firm size (SIZE) indicates that larger Canadian firms make more use of long term leverage than their smaller counterparts. Trade off also expect larger firms to be more levered due to low probability of bankruptcy. Thus H4 does not validate trade-off theory. Our results in this regard are in line with prior studies (Frank & Goyal, 2009; Wald, 1999).

Canadian results suggest positive and significant coefficient for business risk (EVOL) indicating Canadian firms aggressively borrow long term debt when business risk is high. Aggressive borrowing during periods of high earning volatility is contradiction of trade-off theory (H5) and prior literature (i.e. Fama & French, 2002; Frank & Goyal; 2009; Handoo & Sharma, 2014; Karacaer et al, 2016; Lemmon et al., 2008). However similar results have been reported in prior literature (MacKie-Mason, 1990; Nguyen & Ramachandran, 2006).

Theoretical proposition under trade off suggests that profitable firms are in good position to benefit from financial leverage. However profitability (PROF) shows negative and slightly robust coefficient for firms in the Canada. This implies that highly profitable firms avoid using long term leverage in their capital structures. Instead they prefer their least risky internal sources of financing than risky debt from external sources. These predictions are in line with a number of prior studies (e.g. Bevan & Danbolt, 2002; Fama & French, 2002; Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016). Thus theoretical proposition (H7) under trade off does not stands true in Canada.

We found no other firm specific factor with significant potency to determine long term leverage in the Canadian context.

Table 4.19: Regression Results for Canadian Firms.

VARIABLES	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	-.137	(.173)	-.183	(.147)
TANG	.253***	(.066)	.139***	(.042)
UNIQ	.041	(.044)	.017	(.042)
SIZE	.051***	(.014)	.021***	(.006)
EVOL	.157*	(.080)	.033	(.069)
GROW	.001	(.064)	-.040	(.067)
PROF	-.124*	(.067)	-.152**	(.063)
LIQD	-.005	(.006)	-.017***	(.006)
DIVP	-.006	(.012)	.006	(.011)
Observations	2,701		2,701	
Number of id	315		315	
R-squared (Within)	.129		.110	
Between	.037		.086	
Overall	.047		.093	
F_Stat/Wald_Chi^2	17.5 (.000)		298 (.000)	
sigma_u	.181		.125	
sigma_e	.088		.088	
rho	.807		.667	
Hausman_Chi^2	353.5 (.000)			
Breusch Pagan LM	4020.6 (.000)			
Alphafehat (Mean)	-1.69^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Regression output to test the impact of firm specific attributes on short term leverage ratio for Canadian firms is illustrated in Table 4.20. Unlike US, Japan, UK and Korea, Hausman test is insignificant which means error component model to suitable to use. As per Hausman recommendation random effects suggest that increase in assets tangibility decreases short term leverage. Negative and robust relationship between asset structure and short term leverage is opposite to what trade off predicts (H2).

Under trade off framework, large firms are expected to deal easily with bankruptcy costs (Titman & Wessels, 1988) than smaller firms hence expected to use higher financial leverage. However, our results suggest that larger firms in Canada rely less on short term borrowings, which does not support (H4). These predictions are in line with the findings of Garcia-Teruel and Martinez-Solano (2004).

We also found negative and slightly significant slope of GROW revealing that Canadian growing firms use less short term borrowings. Barclays and Smith (1995) and Scherr and Hulburt (2001) also suggest less short term borrowings for growth firms. Inverse short term leverage-growth relationship is consistent with theoretical predictions of trade off (H6).

Canadian results suggest that profitability is another robust predictor of short term borrowing. In contradiction to trade off (H7), Canadian profitable firms use less short term debt than their less profitable counterparts. Similar results regarding profitability and short term debt have been reported in previous literature (Wijst & Thurik, 1993).

Liquidity of Canadian firms is another highly significant predictor of short term borrowings in Canadian non financial sector. Negative slope of LIQD suggests that highly liquid firms in Canada are less levered. Our results are in line with Ozkan (2000) and Scherr and Hullburt (2001), however contrary to what trade off predicts (H8).

We found no other significant determinant of short term borrowings from the rest of explanatory variables in the Canadian context.

TABLE 4.20: Regression Results for Canadian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.072	(.095)	.021	(.082)
TANG	-.046***	(.015)	-.039***	(.012)
UNIQ	-.035*	(.019)	-.029	(.017)
SIZE	-.007	(.005)	-.009***	(.002)
EVOL	-.044	(.037)	-.031	(.032)
GROW	-.031	(.022)	-.038*	(.022)
PROF	-.064**	(.027)	-.070***	(.022)
LIQD	-.022***	(.003)	-.021***	(.003)
DIVP	-.001	(.006)	-.002	(.005)
Observations	2,701		2,701	
Number of id	315		315	
R-squared (Within)	.098		.096	
Between	.104		.128	
Overall	.098		.114	
F_Stat/Wald_Chi^2	12.80 (.000)		298 (.000)	
rho	.732		.715	
Hausman_Chi^2	13.54 (.1396)			
Breusch Pagan LM	3924.3 (.000)			
Alphafehat (Mean)	5.11^{-11}			

Robust standard errors in parentheses
*** $p < .01$, ** $p < .05$, * $p < .1$

4.6 Australian Results

4.6.1 Descriptive Summary and Correlation Matrix for Australian Firms

The descriptive statistics for 350 Australian firms with a total of 2721 observations over 2006-16 have been presented in table 4.21.

Median and Mean values of long term debt over total assets (LDBTA) across firms and data period are 0.176 and 0.191 respectively. LDBTA across Australian firms has an overall standard deviation of 0.157 with an overall minimum and maximum of 0.000 and 0.905 respectively. Median and Mean values of short term debt over total assets (SDBTA) are 0.000 and 0.029 respectively. SDBTA across Australian firms has an overall standard Deviation of 0.068 with an overall minimum and maximum of 0.000 and 0.785 respectively. Debt ratios across Australian firms are somewhat similar to that of US, UK and Canada, while different than that of Korean and Japanese statistics. In line with the previous results we see most of the variation is between firm to firm.

Table 4.21: Descriptive Statistics for Australian Firms

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.176	.191	.157	.000	.905
	between			.134	.000	.682
	within			.088	-.310	.710
SDBTA	overall	.000	.029	.068	.000	.785
	between			.055	.000	.437
	within			.049	-.248	.615
NDTS	overall	.031	.041	.041	.000	.938
	between			.041	.000	.344
	within			.023	-.130	.695
TANG	overall	.210	.284	.250	.000	.971
	between			.252	.000	.956
	within			.074	-.239	.728
UNIQ	overall	.162	.208	.183	.000	.928
	between			.179	.000	.860
	within			.084	-.275	.657
SIZE	overall	5.594	5.760	2.027	.102	11.928
	between			2.073	.102	11.469
	within			.449	2.946	7.940
EVOL	overall	.026	.054	.106	.000	2.626
	between			.136	.004	1.194
	within			.072	-.786	1.727

Variable		Median	Mean	Std. Dev.	Min	Max
GROW	overall	.031	.057	.077	.000	.704
	between			.077	.000	.612
	within			.038	-.172	.369
PROF	overall	.117	.138	.109	.000	1.518
	between			.094	.002	1.002
	within			.070	-.805	.678
LIQD	overall	1.433	1.631	.891	.018	4.993
	between			.812	.250	4.993
	within			.546	-.696	4.776
DIVP	overall	.359	.373	.367	.000	1.000
	between			.283	.000	1.000
	within			.242	-.514	1.248

Table presents summary statistics for 350 Australian firms using annual data 2006-2016

To have a feel of multicollinearity, correlation matrix for 02 dependent and 09 firms' related independent variables for Aussies firms is presented in Table 4.22. The said matrix shows that long term debt ratios in Australian firms are positively correlated with tangibility, size, growth and dividend payout per share and negative with the rest of explanatory variables. Similarly short term leverage ratios are positively correlated only with earning volatility and negatively correlated with rest of explanatory variables. NDTS, TANG and GROW have seemingly higher coefficients but the highest coefficient we found is 0.44. Variance inflation factors were also checked to assess multicollinearity issue and found to be less than 5. According to Asteriou (2007) serious multicollinearity issues arise when correlation coefficient 'r' value exceeds 0.9 or VIF value approaches to 10. Thus based on threshold 'r' and VIF, we argue that VIF values and all correlation coefficients are far below the threshold posing no serious multicollinearity issues in the data.

Table 4.22: Correlation Matrix for Australian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.136*	1.000									
NDTS	-.017	-.043*	1.000								
TANG	.232*	-.023	.351*	1.000							
UNIQ	-.120*	-.023	-.097*	-.233*	1.000						
SIZE	.278*	-.076*	-.031	.268*	-.246*	1.000					
EVOL	-.123*	.043*	.130*	-.007	.040	-.286*	1.000				
GROW	.076*	-.064*	.434*	.442*	-.054*	.064*	.082*	1.000			
PROF	-.092*	-.148*	.358*	.022	-.103*	-.060*	.196*	.190*	1.000		
LIQD	-.233*	-.238*	-.063*	-.100*	.028	-.139*	.098*	-.054*	.091*	1.000	
DIVP	.124*	-.161*	-.120*	-.028	-.006	.343*	-.225*	-.057*	.117*	-.022	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*
Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables.
The sample contains 350 Australian firms using annual data from 2006 to 2016.

4.6.2 Australian Regression Results

Table 4.23 presents the regression results to test the impact of firms' specific attributes on long term debt ratios (LDBTA) in Australian firms. Both fixed effects and random effects are illustrated in the said table. As per table 4.23, only five out of nine firm specific variables significantly determine long term borrowings in Australia. Asset tangibility is significantly affecting long term debt in Australian non financial firms. Positive coefficient of TANG means that Aussies firms with more tangible assets use more long term leverage. This relationship is statistically robust and in line with our theoretical proposition (H2). Our results are also in agreement with the previous findings of (Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999). According to theoretically proposition of trade off, firm's size is an inverse proxy of financial bankruptcy. Therefore larger firms are expected to use high financial leverage. As indicated by positive regression coefficient of firm size (SIZE), we argue that large Australian firms use more long term leverage than their smaller counterparts. This relationship is highly significant and consistent with trade off (H4). Positive short term leverage-size relationship is in accordance with prior findings (Akhtar & Oliver, 2009; Wald, 1999) as well. Results show that profitable Australian firms use significantly lower level of long term leverage as revealed by negative and moderately significant (95%) coefficient of PROF. This means that profitable Aussies firms prefer to avoid risky options and cost of information asymmetry when least risky options of financing are available internally. Negative and significant relationship between profitability and long term debt in the Australia is conflicting to theoretical proposition (H7). These findings also contradict some prior literature (i.e. Frank & Goyal. 2009; Long & Malitz, 1988). However, consistent with pecking order, a number of studies (Booth et al., 2001; Harris & Raviv, 1991 Shyam-Sunder & Myers, 1999; Wald, 1999) support our results.

Liquidity shows negative and highly significant (99%) coefficient for Australian firms. This means that highly liquid non financial firms in Australia use less long term debt than their illiquid counterparts. These results imply that managers accumulate liquid reserves using retained earnings for internal financing abilities to avoid cost of issuing new debt (pecking order hypothesis). These results are in line with previous research (Karacaer et al., 2016; Ozkan, 2001). Negative and highly significant coefficient of LIQD does not support the predictions of trade off (H8) and other empirical findings (Harris & Raviv, 1990; Feidakis & Rovolis, 2007).

Finally, our results show that Australian dividend paying firms use significantly lower long term leverage than their non-paying counterparts. Our findings are in agreement with Frank and Goyal (2009); Yang et al. (2015) and contrary to Chen et al. (2009). Mostly profitable and mature firms are expected to have higher dividend payouts than growing firms (Smith & Watts, 1992). As profitable firms are less prone to financial distress then according to trade off, dividend paying firms are expected to afford more long term leverage. However our findings are inconsistent with trade off (H9). Results suggest that rest of the explanatory variables have no significant potency to determine long term debt in the Australian context.

Table 4.23: Regression Results for Australian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.055	(.101)	.010	(.092)
TANG	.093*	(.053)	.077**	(.035)
UNIQ	-.025	(.028)	-.014	(.026)
SIZE	.052***	(.009)	.030***	(.004)
EVOL	.064	(.056)	.029	(.046)
GROW	-.007	(.052)	-.043	(.057)
PROF	-.088**	(.038)	-.088**	(.038)
LIQD	-.015***	(.005)	-.018***	(.004)
DIVP	-.025**	(.010)	-.016*	(.010)
Observations	2,721		2,721	
Number of id	350		350	
R-squared (Within)	.117		.110	
Between	.119		.134	
Overall	.115		.132	
F_Stat/Wald_Chi^2	16 (.000)		325 (.000)	
rho	.723		.629	
Hausman_Chi^2	39.4 (.000)			
Breusch Pagan LM	3531 (.000)			
Alphafehat (Mean)	-3.72^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

Table 4.24 presents the regression results both for LSDV (fixed effects) and error component model (random effects), to test the impact of firms' specific attributes on short term debt (SDBTA) in Australian firms. As per Hausman test fixed effects is the appropriate model for prediction. Regression results in Table 4.24 reports that firms with greater assets tangibility employ less short term leverage in Australia. Negative and highly significant (99%) coefficient of TANG suggests that trade off prediction (H2) regarding TANG-SDBTA in Australia cannot be validated. Previous empirical results (Wijst and Thurik, 1993) support our findings.

Large firms generally are supposed to better handle problem of information asymmetry and are less likely to default on debt obligations. Hence such firms can afford higher levels of debt ratios according to trade off. However Australian results suggest the opposite. SIZE-SDBTA relationship is slightly robust and negative in Australia. This means that larger firms follow pecking order by using internal resources. Therefore theoretical proposition of trade off (H4) cannot be validated in Australian context.

According to Diamond (1991) firms with higher business risk are expected to use more short term debt due to its feasibility compared to long term debt. In this similar fashion we found Australian firms borrow more short term debt when earning volatility is high. Aggressive borrowing during periods of high business risk is contradictory to trade off (H5).

Regarding liquidity, a number of empirical studies (Garcia-Teruel & Martinez-Solano, 2004; Scherr & Hulburt, 2001) suggest that liquid firms are less reliant on short term borrowings. In line with these findings we found slope of LIQD as negative and highly significant in Australia. This suggests that highly liquid firms borrow significantly lower than their illiquid counterparts. These findings are contrary to trade off (H8).

The rest of coefficients are insignificant and have minimal or no significant potency to predict short term borrowings in Australia.

TABLE 4.24: Regression Results for Australian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.007	(.046)	.003	(.039)
TANG	-.045***	(.014)	-.016	(.011)
UNIQ	.007	(.012)	-.006	(.011)
SIZE	-.008*	(.004)	-.004***	(.001)
EVOL	.092***	(.029)	.078***	(.026)
GROW	-.024	(.022)	-.030	(.020)
PROF	-.027	(.020)	-.045**	(.018)
LIQD	-.025***	(.003)	-.023***	(.003)
DIVP	-.004	(.004)	-.090**	(.004)
Observations	2,721		2,721	
Number of id	350		350	
R-squared (Within)	.102		.0969	
Between	.076		.1266	
Overall	.072		.1033	
F_Stat/Wald_Chi^2	13.5(.000)		302(.000)	
rho	.563		.466	
Hausman_Chi^2	32.77(.000)			
Breusch Pagan LM	1184(.000)			
Alphafehat (Mean)	2.56^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.7 French Results

4.7.1 Descriptive Summary and Correlation Matrix for French Firms

The descriptive statistics for 387 French firms with a total of 3616 observations over 2006-16 have been presented in table 4.25. Median and Mean values of long term debt over total assets (LDBTA) across firms and data period are 0.145 and 0.169 respectively. LDBTA across French firms exhibits an overall standard deviation of

0.137 with an overall minimum and maximum of 0.000 and 0.940 respectively. Median and Mean values of short term debt over total assets (SDBTA) are 0.019 and 0.047 respectively. The overall standard deviation in SDBTA across French firms is 0.068 with an overall minimum and maximum of 0.000 and 0.644 respectively.

DIVP is the only variable that has more "within" variation than "between". All the rest of variables have more "between" variation like in other countries.

Table 4.25: Descriptive Statistics for French Firms

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	Overall	.145	.169	.137	.000	.940
	between			.127	.000	.913
	within			.062	-.174	.626
SDBTA	overall	.019	.047	.068	.000	.644
	between			.060	.000	.361
	within			.037	-.197	.462
NDTS	overall	.028	.034	.037	.000	.718
	between			.030	.000	.431
	within			.022	-.374	.655
TANG	overall	.120	.182	.178	.000	.985
	between			.177	.003	.985
	within			.040	-.098	.846
UNIQ	overall	.207	.234	.184	.000	.975
	between			.175	.000	.861
	within			.072	-.277	.852
SIZE	overall	5.733	6.105	2.334	.028	12.548
	between			2.343	1.113	12.366
	within			.306	2.600	7.687
EVOL	overall	.014	.024	.033	.000	.452

Variable		Median	Mean	Std. Dev.	Min	Max
	between			.028	.001	.203
	within			.023	-.132	.296
GROW	overall	.030	.041	.046	.000	.741
	between			.035	.000	.381
	within			.029	-.118	.535
PROF	overall	.093	.101	.058	.000	.656
	between			.045	.003	.288
	within			.038	-.093	.610
LIQD	overall	1.361	1.524	.742	.040	4.994
	between			.705	.040	4.630
	within			.329	-.419	5.217
DIVP	overall	.000	.163	.285	.000	1.000
	between			.189	.000	1.000
	within			.216	-.576	1.072

Table presents summary statistics for 387 French firms using annual data 2006-2016

Table 4.26 presents the correlation coefficients between the explained and firm specific explanatory variables for French firms used in the analysis. The matrix shows that LDBTA is positively correlated with NDTS, TANG, SIZE, DIVP and GROW and negative with the rest of regressors. SDBTA is positively correlated with NDTS, UNIQ, SIZE and EVOL and negatively correlated with rest of variables. Based on Asteriou (2007) criteria for serious multicollinearity issues, we declare that there are no multicollinearity related issues among the explanatory variables for French sample.

TABLE 4.26: Correlation Matrix for French Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.036*	1.000									
NDTS	.090*	.003	1.000								
TANG	.379*	-.017	.199*	1.000							
UNIQ	-.067*	.064*	.127*	.034*	1.000						
SIZE	.303*	.023	-.058*	.231*	-.144*	1.000					
EVOL	-.128*	.050*	.164*	-.115*	.014	-.365*	1.000				
GROW	.116*	-.046*	.361*	.304*	-.005	-.015	.034*	1.000			
PROF	-.091*	-.153*	.263*	.102*	-.016	.017	.060*	.198*	1.000		
LIQD	-.222*	-.247*	-.086*	-.057*	.141*	-.249*	.100*	-.067*	.220*	1.000	
DIVP	.012	-.075*	-.019	.122*	-.044*	.092*	-.051*	.022	.096*	.044*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 387 French firms using annual data from 2006 to 2016.

4.7.2 French Regression Results

Table 4.27 presents the regression results both for fixed effects and random effects to explore the likely impact of firms' specific attributes on long term debt ratios (LDBTA) for France. As per Hausman test recommendation fixed effect model reveals that that firm size (SIZE) is positively and significantly (99%) affecting LDBTA in France. This means that larger French firms borrow more long term debt than their smaller counterparts. This relationship is consistent with trade-off theory (H4) and in line with Wald (1999) and many other studies. Business risk is another moderately significant determinant of long term borrowings in French context. In contradiction with trade off (H5), positive regression coefficient of business risk (EVOL) reveals that French firms borrow more long term debt when earning volatility is high. This relationship is moderately significant with probability of 5% error. Aggressive borrowing of French firms during periods of high earning volatility is contradiction of prior literature (i.e. Booth et al., 2001; Frank & Goyal, 2009).

Our results show that highly profitable French firms use low level of financial leverage, which contradicts trade off (H7). This implies that firms in France avoid external risky sources of financing especially when least risky options are available internally. In line with pecking order, a number of prior studies (e.g. Akhtar & Oliver, 2009; Fama & French, 2002; Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016; Kester, 1986; Lemmon et al., 2008; Shyam-Sunder & Myers, 1999; Wald, 1999) found similar results.

The slope coefficient for firm's liquidity (LIQD) reveals that liquid firms in France are less levered. This relationship has 95% level of significance. Negative slope coefficient of liquidity negates trade off (H8) and previous literature (Feidakis & Rovolis, 2007; Harris & Raviv, 1990). These results confirm the predictions of pecking order hypothesis and previous research findings (Niu, 2009; Ozkan, 2001).

Finally our results show that the rest of the explanatory variables are not significantly determining long term leverage.

Table 4.27: Regression Results for French Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.062	(.068)	.060	(.065)
TANG	.048	(.048)	.133***	(.045)
UNIQ	-.006	(.023)	-.007	(.020)
SIZE	.040***	(.010)	.023***	(.003)
EVOL	.223**	(.105)	.187*	(.099)
GROW	.000	(.061)	.017	(.059)
PROF	-.268***	(.062)	-.272***	(.058)
LIQD	-.013**	(.006)	-.013**	(.006)
DIVP	-.004	(.006)	-.006	(.006)
Observations	3,616		3,616	
Number of id	387		387	
R-squared (Within)	.084		.075	
Between	.151		.230	
Overall	.128		.188	
F_Stat/Wald_Chi^2	15 (.000)		378 (.000)	
rho	.799		.731	
Hausman_Chi^2	74 (.000)			
Breusch Pagan LM	7835 (.000)			
Alphafehat (Mean)	3.51^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Regression results about the impact of firms' specific factors on short term debt ratios in France are reported in Table 4.28. Both fixed and random effects are reported in the said table. However Hausman test recommend fixed effect model as appropriate model. According to fixed effects model a number of firm's specific attributes significantly predict short term debt ratios in France.

Negative and slightly significant slope of tangibility suggest that French firms with higher tangible assets use low short term debt ratios. This particular pattern does not support trade off (H2). However pecking order and some previous reported literature (Wijst & Thurik, 1993) support our findings.

According to trade off unique firms are expected to avoid using higher debt ratios. This is because assets of such firms are not easily redeployable and cost of financial distress is higher also for such firms (Titman & Wessels, 1988). Interestingly we see that such unique firms in France borrow aggressively in short run. Thus our H3 regarding negative UNIQ-SDBTA relationship under trade off is not supported in French format.

Larger firms are more suitable to enjoy benefits of short term borrowings (Berger & Udell, 1998). This is because such firms are stable and have enough strength to fulfill their short term obligations. In line with trade off (H4) our results show positive and slightly significant size coefficient. This means that large non financial French firms make more use of short term borrowings.

Business risk is another significant determinant of short term borrowings in France. According to our results firms with high volatile earnings in France exhibit aggressive behavior by using more short term debt ratios. This relationship is moderately significant at 95%. Inconsistent with trade off (H5), Diamond (1991) findings support our results.

Like most of other countries in our sample, French results show that highly profitable firms are less levered even in short run. Under framework of trade off, as profitable firms have low chances of going into financial distress, therefore expected to exploit benefits of leverage. But results in French case contradict these lines (H7). In line with pecking order, Wijst and Thurik (1993) report similar findings in the Netherlands.

Finally, liquid firms are expected to use more short term debt under trade off. However French regression output suggests that liquid firms are significantly less levered in short run than their illiquid counterparts in France. Negative and highly robust (99%) slope of liquidity is contradictory to trade off (H8). However a number of studies (Garcia-Teruel & Martinez-Solano, 2004; Scherr & Hulburt, 2001) support our findings.

The rest of coefficients are insignificant predictors of short term debt.

Table 4.28: Regression Results for French Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.008	(.040)	.002	(.032)
TANG	-.041*	(.022)	-.031**	(.013)
UNIQ	.030**	(.015)	.037***	(.012)
SIZE	.009*	(.005)	.002	(.002)
EVOL	.099**	(.041)	.099**	(.040)
GROW	-.027	(.025)	-.030	(.025)
PROF	-.042**	(.020)	-.049**	(.020)
LIQD	-.029***	(.004)	-.028***	(.003)
DIVP	.002	(.003)	.000	(.003)
Observations	3,616		3,616	
Number of id	387		387	
R-squared (Within)	.091		.087	
Between	.046		.102	
Overall	.045		.080	
F_Stat/Wald_Chi^2	16.1 (.000)		349.25 (.000)	
rho	.724		.670	
Hausman_Chi^2	24.53 (.000)			
Breusch Pagan LM	6465 (.000)			
Alphafehat (Mean)	5.98^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.8 German Results

4.8.1 Descriptive Summary and Correlation Matrix for German Firms

Table 4.29 the descriptive statistics for 317 German firms with a total of 2812 observations over 2006-16 have been presented in.

Median and Mean values of long term debt over total assets (LDBTA) across German firms and data period are 0.179 and 0.197 respectively. LDBTA across German sample firms has an overall standard deviation of 0.148 with an overall minimum and maximum of 0.000 and 0.907 respectively. Median and Mean values of short term debt over total assets (SDBTA) are 0.000 and 0.022 respectively. SDBTA across has an overall standard Deviation of 0.052 with global minimum and maximum of 0.000 and 0.559 respectively. The between and within variation are roughly equal as per GROW is concerned. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.29: Descriptive Statistics for German Firms

Variable			Mean	Std. Dev.	Min	Max
LDBTA	overall	.179	.197	.148	.000	.907
	between			.139	.000	.907
	within			.074	-.289	.692
SDBTA	overall	.000	.022	.052	.000	.559
	between			.049	.000	.510
	within			.037	-.250	.423
NDTS	overall	.036	.043	.032	.000	.813
	between			.028	.000	.240
	within			.019	-.194	.615
TANG	overall	.218	.249	.188	.000	.951
	between			.181	.003	.862
	within			.051	-.383	.603
UNIQ	overall	.186	.193	.131	.000	.793
	between			.124	.000	.608
	within			.052	-.318	.776
SIZE	overall	5.605	5.977	2.297	.030	12.769
	between			2.322	.030	12.286
	within			.305	3.659	7.660
EVOL	overall	.020	.032	.046	.000	.705

Variable			Mean	Std. Dev.	Min	Max
	between			.051	.005	.659
	within			.034	-.198	.512
GROW	overall	.037	.047	.043	.000	.519
	between			.032	.000	.160
	within			.031	-.089	.423
PROF	overall	.106	.117	.072	.000	.893
	between			.072	.015	.666
	within			.044	-.143	.757
LIQD	overall	1.590	1.765	.866	.091	4.993
	between			.792	.170	4.677
	within			.463	-.949	4.169
DIVP	overall	.151	.263	.318	.000	1.000
	between			.238	.000	1.000
	within			.213	-.626	1.172

Table presents summary statistics for 317 German firms using annual data 2006-2016

Table 4.30 presents the correlation coefficients between the explained and firm specific explanatory variables for German firms. The matrix shows that LDBTA are positively correlated with NDTS, TANG, SIZE and GROW variables and negative with the rest. Short term debt to total assets in Germany is positively correlated with NDTS, TANG and EVOL and negatively correlated with rest of variables. Based on threshold correlation coefficient and VIF values suggested by Asteriou (2007) as a sign of serious multicollinearity issues, we declare that there are no significant multicollinearity issues among the explanatory variables.

Table 4.30: Correlation Matrix for German Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.063*	1.000									
NDTS	.080*	.052*	1.000								
TANG	.375*	.015	.340*	1.000							
UNIQ	-.019	-.018	.084*	-.022	1.000						
SIZE	.066*	-.048*	-.145*	.020	-.209*	1.000					
EVOL	-.002	.020	.093*	-.090*	.052*	-.293*	1.000				
GROW	.146*	-.001	.224*	.325*	-.056*	.047*	.006	1.000			
PROF	-.123*	-.077*	.252*	-.026	.038*	-.085*	.170*	.094*	1.000		
LIQD	-.227*	-.216*	-.120*	-.175*	.160*	-.238*	.085*	-.021	.185*	1.000	
DIVP	-.019	-.074*	-.033	.019	-.030	.264*	-.124*	-.046*	.149*	.019	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*
Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables.
The sample contains 317 German firms using annual data from 2006 to 2016.

4.8.2 German Regression Results

Table 4.31 presents the regression results for German firms. Fixed effects as reported in Table 4.31 suggest that only four variables significantly affect long term borrowings in German non financial sectors. Tangible assets are considered as good collateral for debt and instrumental to minimize risk of financial bankruptcy thus under trade off firms with more such assets can borrow more. According to German regression results, tangibility has a positive and highly significant (99%) coefficient estimate. This indicates that higher tangibility of firm assets is directly and significantly influencing long term debt, which supports trade off (H2). Such findings are in agreement with previous studies (Bevan & Danbolt, 2004; Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999).

Firm size is another significant predictor of long term borrowings in Germany. Positive and highly robust slope of size suggests that larger German firms make more use of financial leverage than their smaller counterparts. As larger firms are expected to have more internal resources for financing, hence pecking order expects such firms to use low financial leverage. Thus we say that our results are in perfect contradiction to pecking order and previous findings (i.e. Kester, 1986; Kim & Sorensen, 1986). Positive SIZE-LDBTA relationship is in accordance with trade off (H4) and prior literature like Wald (1999). Negative and highly significant (99%) coefficient of PROF implies that German firms prefer to avoid risky options and cost of information asymmetry when least risky options of financing are available internally. Robust inverse relationship between profitability and long term debt in Germany is opposite to the predictions of trade off (H7). However, pecking order hypothesis and prior literature (Booth et al., 2001; Titman & Wessels, 1988; Wald, 1999) justify our findings.

Liquidity of German firms is another significant predictor of long term borrowings in Germany. Liquidity (LIQD) shows negative and slightly significant (90%) coefficient in German results. This means that highly liquid non financial German firms use less long term debt than their illiquid counterparts, which is inconsistent with H8. Our findings confirm the predictions of pecking order and previous research (Antoniou et al., 2002; Karacaer et al., 2016; Niu, 2009; Ozkan, 2001).

Finally, our results show that no other regressors have significant potency to determine long term leverage in Germany.

TABLE 4.31: Regression Results for German Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.146	(.127)	.099	(.118)
TANG	.306***	(.057)	.291***	(.044)
UNIQ	.001	(.048)	.030	(.043)
SIZE	.037***	(.011)	.010***	(.004)
EVOL	.124	(.096)	.132	(.089)
GROW	-.059	(.065)	-.034	(.065)
PROF	-.369***	(.057)	-.336***	(.054)
LIQD	-.010*	(.005)	-.013***	(.005)
DIVP	-.002	(.009)	-.004	(.009)
Observations	2,812		2,812	
Number of id	317		317	
R-squared (Within)	.145		.135	
Between	.056		.120	
Overall	.089		.164	
F_Stat/Wald_Chi^2	21 (.000)		425 (.000)	
rho	.821		.718	
Hausman_Chi^2	78 (.000)			
Breusch Pagan LM	5080 (.000)			
Alphafehat (Mean)	-3.00^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

Regression output for German firms is illustrated here in Table 4.32. Hausman test statistic is insignificant which means error component model is suitable to use. As per Hausman recommendation of random effects, only four firm specific variables significantly determine level of short term borrowings in Germany. Results show that asset structure (TANG), size (SIZE), profitability (PROF) and liquidity (LIQD) are all significantly and negatively related to level of short term borrowings. This means that German firms having higher tangible assets, larger in size, profitable than others or more liquid than their counterparts restrict borrowings in short run. This particular pattern is against trade off (H2, H4, H7 & H8). However theory about internal reliance for financings (pecking order) justifies all these negative slopes. Similar and supportive results for tangibility (Wijst & Thurik, 1993), size (Garcia-Teruel and Martinez-Solano, 2004), profitability (Wijst & Thurik, 1993) and liquidity (Ozkan, 2000; Scherr & Hullburt, 2001) are reported prior to this study.

Rest of the regressors and insignificant with various signs, hence have no potential to determine short term debt ratios in Germany.

TABLE 4.32: Regression Results for German Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.020	(.040)	.030	(.035)
TANG	-.017	(.020)	-.019*	(.012)
UNIQ	-.013	(.016)	-.009	(.013)
SIZE	.000	(.004)	-.003***	(.001)
EVOL	.009	(.025)	.007	(.022)
GROW	.016	(.029)	.013	(.028)
PROF	-.064**	(.028)	-.064***	(.022)
LIQD	-.016***	(.003)	-.016***	(.002)
DIVP	.002	(.004)	.000	(.003)
Observations	2,812		2,812	
Number of id	317		317	
R-squared (Within)	.056		.055	
Between	.059		.091	
Overall	.047		.062	
F_Stat/Wald_Chi^2	7.35 (.000)		176 (.000)	
rho	.607		0.484	
Hausman_Chi^2	9(.548)			
Breusch Pagan LM	1461 (.000)			
Alphafehat (Mean)	5.69^{-14}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.9 Italian Results

4.9.1 Descriptive Summary and Correlation Matrix for Italian Firms

Our sample for Italian firm comprises a total of 156 non financial firms with a total of 1373 observations over 2006-16. Descriptive summary of independent and dependent variables for Italian firms is presented in table 4.33. The said table reveals that Median and Mean values of long term debt over total assets (LDBTA) across firms and data period are 0.187 and 0.205 respectively. LDBTA across Italian sample firms has an overall standard deviation of 0.150 with an overall minimum and maximum of 0.000 and 0.984 respectively. Median and Mean values of short term debt over total assets (SDBTA) are 0.053 and 0.078 respectively. SDBTA across Italian firms has an overall standard Deviation of 0.086 with an overall minimum and maximum of 0.000 and 0.739 respectively. The between and within variation are roughly equal as per SDBTA and DIVP is concerned. All the rest of variables have more "between" variation than "within" variation.

Table 4.33: Descriptive Statistics for Italian Firms

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.187	.205	.150	.000	.984
	between			.135	.000	.660
	within			.074	-.338	.769
SDBTA	overall	.053	.078	.086	.000	.739
	between			.068	.000	.451
	within			.060	-.148	.683
NDTS	overall	.032	.036	.023	.000	.225
	between			.021	.000	.142
	within			.009	-.020	.127
TANG	overall	.190	.239	.190	.000	.940
	between			.175	.001	.842
	within			.076	-.089	.788
UNIQ	overall	.136	.159	.141	.000	.957
	between			.137	.000	.651

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.063	-.332	.625
SIZE	overall	6.368	6.605	1.872	2.070	12.081
	between			1.857	2.842	11.850
	within			.303	4.743	7.900
EVOL	overall	.014	.021	.023	.000	.361
	between			.032	.003	.361
	within			.016	-.043	.212
GROW	overall	.026	.037	.042	.000	.559
	between			.064	.000	.559
	within			.027	-.066	.413
PROF	overall	.086	.095	.062	.000	.449
	between			.052	.001	.319
	within			.034	-.072	.276
LIQD	overall	1.278	1.384	.627	.095	4.955
	between			.554	.332	3.913
	within			.313	.059	3.386
DIVP	overall	.000	.222	.328	.000	1.000
	between			.216	.000	.884
	within			.247	-.528	1.111

Table presents summary statistics for 156 Italian firms using annual data 2006-2016

Table 4.34 presents the correlation coefficients between the explained and firm specific explanatory variables for Italian firms used in the analysis. The matrix reveals positive association between LDBTA and NDTS, TANG, SIZE, GROW. However, long term debt ratios in Italy are negatively correlated with UNIQ, PROF, EVOL, LIQD and DIVP. Short term asset to debt ratios in Italy is positively correlated with NDTS, UNIQ, GROW and EVOL and negatively correlated with rest of variables. As all our correlation coefficients are far below than 0.9. Therefore problematic multicollinearity issues according to Asteriou (2007) are not there. Also based on VIP factor of 5 and significance level of 95%, we found no significant multicollinearity issues among the explanatory variables.

Table 4.34: Correlation Matrix for Italian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.242*	1.000									
NDTS	.159*	.008	1.000								
TANG	.240*	-.002	.266*	1.000							
UNIQ	-.080*	.044	-.089*	-.091*	1.000						
SIZE	.320*	-.192*	-.066*	.205*	-.151*	1.000					
EVOL	-.090*	.092*	.143*	-.123*	.092*	-.290*	1.000				
GROW	.091*	.023	.281*	.407*	-.097*	.061*	.127*	1.000			
PROF	-.071*	-.155*	.265*	-.020	-.018	.009	.077*	.157*	1.000		
LIQD	-.299*	-.319*	-.197*	-.154*	.165*	-.151*	.003	-.111*	.289*	1.000	
DIVP	.004	-.074*	-.037	.151*	-.019	.164*	-.076*	.060*	.132*	.046	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 156 Italian firms using annual data from 2006 to 2016.

4.9.2 Italian Regression Results

Table 4.35 presents the regression results both for fixed effects and random effects to test the impact of firms' specific attributes on long term debt ratios (LDBTA) in Italy. Fixed effect model predicts that out of 09 predictors, only two variables uniqueness (UNIQ) and size (SIZE) are significant determinants of long term borrowing in Italian non financial sector. Positive slope of UNIQ indicates that highly unique Italian firms borrow more long term debt. This particular relationship is slightly significant at 90% confidence. These results are opposite to the findings of Titman and Wessels (1988) and trade off framework (H3).

Theoretical proposition under trade off and previous literature (Friend & Lang, 1988; Frank & Goyal, 2009; Fama & French, 2002; Wald, 1999) expects size as inverse proxy of financial distress. Hence larger firms are expected to afford higher leverage ratios. Like most of other countries in the sample, the slope coefficient of SIZE is positive and moderately significant (95%). This indicates that large Italian firms make more use of long term leverage than their smaller counterparts, which supports H4. All the remaining firm' specific regressors are insignificant and have no potential to determine long term leverage ratios in Italian non financial sector.

Table 4.36 presents the regression results both for LSDV (fixed effects) and error component model (random effects), to test the impact of firms' specific attributes on short term debt (SDBTA) in Italy. According to Hausman test fixed effects is more suitable than random effects model. Fixed effects suggest that highly unique Italian firms rely more on short term borrowing as indicated by positive slope of UNIQ. According to trade off, unique firms are expected to avoid higher debt ratios because such firms are more prone to higher cost of financial distress (Titman & Wessels, 1988). Thus in Italian context H3 cannot be validated.

On the other hand SIZE-SDBTA relationship is positive and moderately significant at 95%. This pattern is in compliance with trade off (H4), suggesting larger Italian firms borrow more short term leverage than their smaller counterparts. Empirical studies (Berger & Udell, 1998; Scherr & Hulburt, 2001) found similar results.

Table 4.35: Regression Results for Italian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	-.067	(.464)	.095	(.438)
TANG	.042	(.062)	.049	(.053)
UNIQ	.117*	(.066)	.081	(.054)
SIZE	.052**	(.020)	.030***	(.007)
EVOL	-.094	(.287)	-.053	(.287)
GROW	.008	(.088)	.062	(.091)
PROF	-.051	(.122)	-.009	(.111)
LIQD	-.007	(.011)	-.015	(.010)
DIVP	-.016	(.010)	-.016*	(.010)
Observations	1,373		1,373	
Number of id	156		156	
R-squared (Within)	.050		.041	
Between	.082		.122	
Overall	.110		.143	
F_Stat/Wald_Chi^2	4 (.000)		74.4 (.000)	
rho	.772		.670	
Hausman_Chi^2	40 (.000)			
Breusch Pagan LM	2209 (.000)			
Alphafehat (Mean)	-1.28^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Firms with less growth opportunities are likely to use less short term leverage (Barclays & Smith, 1995). However, trade off predicts that due to higher probability of bankruptcy, growth firms should restrict borrowings. In line with trade off (H6), results show that Italian firms with higher growth opportunities are less levered in short run. This particular pattern is moderately significant (95%). Our findings in this regard are consistent with Scherr and Hulburt (2001).

Under the framework of trade off, profitable and liquid firms are expected to employ more debt in their capital structure. This is because profitable and liquid firms have low probability of financial distress. However results regarding Italian non financial firms suggest that both profitable and liquid firms are significantly less levered, which contradicts both H7 and H8. Ozkan (2000) suggests similar findings.

The rest of regressors' coefficients are insignificant and have minimal and no potency to predict SDBTA.

Table 4.36: Regression Results for Italian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	-.141	(.285)	-.180	(.236)
TANG	.018	(.026)	.004	(.022)
UNIQ	.068*	(.040)	.034	(.034)
SIZE	.024**	(.010)	.005*	(.003)
EVOL	.233	(.169)	.143	(.157)
GROW	-.165**	(.075)	-.067	(.098)
PROF	-.178**	(.081)	-.141**	(.061)
LIQD	-.067***	(.010)	-.060***	(.008)
DIVP	.002	(.008)	.002	(.007)
Observations	1,373		1,373	
Number of id	156		156	
R-squared (Within)	.200		.179	
Between	.002		.139	
Overall	.012		.155	
F_Stat/Wald_Chi^2	15 (.000)		278 (.000)	
rho	.720		.461	
Hausman_Chi^2	56 (.000)			
Breusch Pagan LM	848 (.000)			
Alphafehat (Mean)	3.12^{-10}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.10 Swiss Results

4.10.1 Descriptive Summary and Correlation Matrix for Swiss Firms

The descriptive statistics for 80 Swiss firms with a total of 776 observations over 2006-16 have been presented in table 4.37. The summary reveals that Swiss firms on average use 17.1% long term debt to finance their assets. However the median reveals that that majority of firms use up to 15.3% of long term debt for assets financing purposes. Long term debt to total assets ratios across Swiss sample firms has an overall standard deviation of 0.144 with an overall minimum and maximum of 0.000 and 0.778 respectively.

Median and Mean values of short term debt over total assets (SDBTA) are 0.003 and 0.025 respectively. SDBTA across Swiss firms has an overall standard Deviation of 0.043 with an overall minimum and maximum of 0.000 and 0.349 respectively. The between and within variations are roughly equal as per SDBTA and DIVP are concerned. All the rest of variables have more “between” variation than “within” variation.

Table 4.37: Descriptive Statistics for Swiss Firms

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.153	.171	.144	.000	.778
	between			.128	.000	.769
	within			.065	-.132	.476
SDBTA	overall	.003	.025	.043	.000	.349
	between			.029	.000	.119
	within			.031	-.094	.334
NDTS	overall	.037	.039	.018	.000	.166
	between			.017	.008	.095
	within			.009	-.034	.112
TANG	overall	.223	.286	.205	.004	.945
	between			.207	.011	.894
	within			.043	.071	.546
UNIQ	overall	.216	.228	.125	.000	.635
	between			.122	.021	.593

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.040	-.042	.413
SIZE	overall	7.464	7.377	1.769	3.151	12.377
	between			1.784	3.697	11.673
	within			.296	5.451	9.082
EVOL	overall	.014	.021	.021	.000	.163
	between			.020	.003	.128
	within			.015	-.061	.097
GROW	overall	.034	.042	.035	.000	.315
	between			.028	.005	.181
	within			.021	-.027	.210
PROF	overall	.118	.123	.054	.000	.396
	between			.046	.024	.262
	within			.030	-.002	.294
LIQD	overall	1.631	1.813	.770	.299	4.859
	between			.770	.752	4.485
	within			.410	.518	3.953
DIVP	overall	.259	.301	.314	.000	1.000
	between			.224	.000	.856
	within			.228	-.555	1.210

Table presents summary statistics for 80 Swiss firms using annual data 2006-2016

Table 4.38 presents the correlation coefficients between the explained and firm specific explanatory variables for Swiss firms used in the analysis. The matrix shows Long term debt financing are positively correlated with NDTS, TANG, SIZE and GROW and negatively correlated with the rest of explanatory variables. SDBTA is positively correlated with UNIQ, SIZE and GROW and negatively correlated with rest of variables.

Some seemingly higher correlation coefficients in the matrix were suspected for multicollinearity. Therefore values of variance inflation factor were checked. But no such issues among the explanatory variables were found. Besides VIF, our correlation coefficients are far below than 0.9, thus according to Asteriou (2007) there is no multicollinearity issue in the data.

Table 4.38: Correlation Matrix for Swiss Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.133*	1.000									
NDTS	.234*	-.019	1.000								
TANG	.403*	-.029	.453*	1.000							
UNIQ	-.227*	.062	.015	-.223*	1.000						
SIZE	.162*	.075*	-.179*	-.016	-.143*	1.000					
EVOL	-.042	-.026	.078*	-.137*	.135*	-.215*	1.000				
GROW	.247*	.023	.408*	.586*	-.049	-.012	.044	1.000			
PROF	-.107*	-.062	.259*	-.001	-.044	.136*	.067	.290*	1.000		
LIQD	-.264*	-.217*	-.171*	-.139*	.236*	-.160*	.059	-.080*	.076*	1.000	
DIVP	-.067	-.021	.026	.051	-.102*	.218*	-.168*	.072*	.134*	-.042	1.000

*** $p < .01$, ** $p < .05$, * $p < .1$

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 80 Swiss firms using annual data from 2006 to 2016.

4.10.2 Swiss Regression Results

Table 4.39 presents the regression results to test the determinants of firms' specific attributes on long leverage ratio in Swiss non financial firms. Breusch-Pagan LM Test for random effects rejects the possibility of zero crossectional variances. Under Hausman accepts our null hypotheses regarding independent distributions of entity specific effects (ε_i). Therefore random effect model is correct model in Swiss case. Both fixed effects and random effects are illustrated in the said table. But we focus on random effects in Table 4.39. Asset tangibility is positive and significantly (90%) affecting long term debt in Swiss firms. Tangible assets are considered good collateral for creditors. Therefore trade off also expects more financial leverage for firms having more tangible assets. Our findings are consistent with trade off (H2) and previous studies (Bevan & Danbolt, 2004; Shyam-Sunder & Myers, 1999).

Unique Swiss firms make less use of leverage. As indicated by significant negative coefficient of UNIQ with 5% error level. Due to higher risk for bankruptcy, unique firms are expected to restrict borrowings as per trade off proposition. Thus H3 under trade off framework could be substantiated in Swiss case. Our findings are similar to Titman and Wessels (1988) and Frank and Goyal (2009). Result show that larger firms in Switzerland use more long term leverage than their smaller counterparts. These findings are highly robust with 99% confidence. This particular Swiss pattern is consistent with trade-off theory (H4) and in line with prior studies (e.g. Akhtar & Oliver, 2009; Alves & Ferreira, 2011; Bevan & Danbolt, 2002).

Trade off suggests that profitability has inverse relationship with chances of financial distress. Hence theoretically higher leverage is expected from profitable firms to get tax benefits in terms of interest tax shields. However results suggest that Swiss firms avoid higher long term debt ratios as indicated by negative and highly robust (99%) coefficient for profitability, this is opposite to trade off (H7). In line with pecking order, similar results were reported by prior literature (e.g. Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016; Lemmon et al., 2008; Michaelas et al., 1999; Ozkan, 2001; Wald, 1999).

We find no impact of business risk, growth options, liquidity and dividend paying nature of firms in Switzerland in terms of significant regression coefficients.

TABLE 4.39: Regression Results for Swiss Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.573	(.517)	.679	(.504)
TANG	.123	(.140)	.163*	(.090)
UNIQ	-.178*	(.103)	-.163**	(.082)
SIZE	.0264	(.017)	.023***	(.007)
EVOL	.281	(.286)	.312	(.273)
GROW	-.080	(.237)	-.049	(.213)
PROF	-.422***	(.150)	-.412***	(.139)
LIQD	-.004	(.011)	-.006	(.010)
DIVP	-.006	(.017)	-.010	(.017)
Observations	776		776	
Number of id	80		80	
R-squared (Within)	.089		.087	
Between	.209		.253	
Overall	.200		.239	
F_Stat/Wald_Chi^2	3.2 (.000)		91.4 (.000)	
rho	.745		.725	
Hausman_Chi^2	13.2 (.214)			
Breusch Pagan LM	1668 (.000)			
Alphafehat (Mean)	1.52^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Table 4.40 shows the regression results for Swiss firms in non-financial sector. The P-value of Hausman test coefficient is insignificant, which means that random effect model is appropriate one for the existing data of Swiss firms. Random effect panel in table 4.40 shows that only three factors are predicting short term leverage choice in Switzerland. As evident from positive slightly robust growth coefficient, Swiss growth firms (GROW) make more use of short term debt. Barclays and Smith (1995) also suggest that firms with more growth opportunities are likely to use more short term debt than their counterparts. But trade off suggests that mostly growth firms are new and probability of financial distress are higher for such firms, hence they are expected to avoid high debt ratios. Our results in this regard do not support trade off (H6) in Switzerland.

Wijst and Thurik (1993) confirm trade off in case liquidity-leverage relationship and contradict the same framework in case of profitability-leverage relationship. Our results contradict trade off (H7 & H8) in both cases. Negative and robust slopes of PROF and LIQD suggest that profitable and liquid firms in Switzerland are both less levered than their respective counterparts.

The remaining regressors have seemingly no potency to determine SDBTA in Swiss non financial firms included in our sample.

TABLE 4.40: Regression Results for Swiss Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.018	(.131)	.008	(.122)
TANG	-.060	(.038)	-.021	(.016)
UNIQ	.021	(.024)	.034	(.021)
SIZE	-.012*	(.006)	-.001	(.003)
EVOL	-.010	(.108)	-.018	(.100)
GROW	.077	(.051)	.088*	(.049)
PROF	-.133**	(.055)	-.087*	(.048)
LIQD	-.026***	(.006)	-.022***	(.004)
DIVP	-.007	(.005)	-.004	(.005)
Observations	776		776	
Number of id	80		80	
R-squared (Within)	.169		.158	
Between	.000		.022	
Overall	.019		.070	
F_Stat/Wald_Chi^2	7 (.000)		113 (.000)	
rho	.657		.457	
Hausman_Chi^2	18 (.060)			
Breusch Pagan LM	715 (.000)			
Alphafehat (Mean)	1.44^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.11 Brazilian Results

4.11.1 Descriptive Summary and Correlation Matrix for Brazilian Firms

Descriptive statistics for 190 Brazilian firms with a total of 1466 observations over 2006-16 have been presented in table 4.41. Median and Mean values LDBTA reveals that Brazilian firms use roughly 26% of long term debt financing across data period. LDBTA across Brazilian sample firms deviates from its global mean by 0.159. The said table also reveals that some firms at least at some point of time are zero levered or as much as 91% levered as shown by overall minimum and maximum of 0.0000 and 0.9099 respectively. Similarly Median and Mean values of short term debt over total assets (SDBTA) are 0.000 and 0.029 respectively. SDBTA across Brazilian firms has an overall standard deviation of 0.057 with an overall minimum and maximum of 0.000 and 0.495 respectively.

The "between" and "within" variations are roughly equal as per SDBTA, DIVP, PROF and EVOL are concerned. All the rest of variables have more "between" variation than "within" variation.

Table 4.41: Descriptive Statistics for Brazilian Firms

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.260	.265	.159	.000	.910
	between			.149	.004	.910
	within			.085	-.085	.625
SDBTA	overall	.000	.029	.057	.000	.495
	between			.049	.000	.495
	within			.043	-.223	.283
NDTS	overall	.032	.035	.023	.000	.185
	between			.020	.000	.122
	within			.013	-.023	.129
TANG	overall	.287	.304	.218	.000	.912
	between			.179	.004	.853
	within			.129	-.345	.843
UNIQ	overall	.000	.003	.012	.000	.277
	between			.011	.000	.092

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.010	-.090	.187
SIZE	overall	8.017	7.948	1.672	2.754	13.532
	between			1.775	2.754	12.678
	within			.476	4.965	9.807
EVOL	overall	.024	.035	.047	.000	.823
	between			.038	.000	.271
	within			.036	-.219	.587
GROW	overall	.043	.054	.054	.000	.667
	between			.034	.000	.186
	within			.044	-.122	.539
PROF	overall	.124	.138	.088	.000	1.337
	between			.065	.000	0419
	within			.061	-.098	1.227
LIQD	overall	1.479	1.630	.774	.094	4.928
	between			.719	.319	4.639
	within			.446	-.323	3.869
DIVP	overall	.300	.422	.352	.000	1.000
	between			.263	.000	1.000
	within			.254	-.471	1.253

Table presents summary statistics for 190 Brazilian firms using annual data 2006-2016

Correlation matrix (Table 4.42) for Brazilian firms shows non tax shields, size, growth opportunities and dividend payout per share have direct association with that long term debt ratios measured as long term debt to book values of total assets. All the rest of independent variables and LDBTA have negative association. Besides that it is evident from the table that Brazilian firms use higher short term debt financing when firms are facing with higher level of earnings volatility (EVOL). All the rest of 08 independent regressors are negatively associated with short term debt financing. Like all the previous results multicollinearity issues have been assessed trough significance levels of correlation coefficients and VIF. As per Asteriou (2007) criteria for problematic multicollinearity issue, we declare that our data does not suffer from seerious multicollinearity issues

TABLE 4.42: Correlation Matrix for Brazilian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.164*	1.000									
NDTS	.059*	-.027	1.000								
TANG	-.034	-.050	.228*	1.000							
UNIQ	-.124*	-.010	-.095*	.028	1.000						
SIZE	.248*	-.025	.090*	.050	-.247*	1.000					
EVOL	-.181*	.032	-.037	-.013	.034	-.232*	1.000				
GROW	.083*	-.027	.426*	.348*	-.052*	.039	-.004	1.000			
PROF	-.092*	-.003	.335*	.058*	-.031	.001	.293*	.196*	1.000		
LIQD	-.167*	-.149*	-.199*	-.138*	-.013	-.155*	.045	-.072*	-.110*	1.000	
DIVP	.034	-.067*	.116*	.038	-.136*	.169*	-.005	.029	.215*	-.162*	1.000

*** $p < .01$, ** $p < .05$, * $p < .1$

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 190 Brazilian firms using annual data from 2006 to 2016.

4.11.2 Brazilian Regression Results

Table 4.43 reports regression results for Brazilian non financial sector. According to LSDV model non debt tax shield (NDTS) and asset structure is insignificant in Brazil. Uniqueness aspect of Brazilian firms is negatively related with leverage. This relationship is moderately strong in terms of significance (90%) and supportive of H3. Previous studies such as Frank and Goyal (2009); Titman and Wessels (1988) also support our findings.

Brazilian regression results suggest that higher growth (GROW) firms in Brazil use more long term debt than mature firms. This relationship is robust at 90%, and inconsistent with theoretical proposition H6. However the same findings are consistent with pecking theory and contrary to prior literature (e.g. Booth et al., 2001; Frank & Goyal, 2009).

Our results also show that highly profitable firms in Brazil are least levered than less profitable firms as pecking order predicts. These results are highly significant with 1% error margin. Similar results were found by prior studies (e.g. Akhtar & Oliver, 2009; Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016). Thus we conclude that our H7 is inconsistent and does not hold grounds in Brazil.

Negative slope coefficient for liquidity reveals that liquid firms in Brazil use less financial leverage. This relationship is strong with 5% probability of error. This particular pattern observed in Brazil is consistent with pecking order, however inconsistent with H8.

Finally, we found that Brazilian dividend paying firms use significantly lower long term leverage than their non-paying firms. Similar relationship is suggested by Frank and Goyal (2009); Yang et al. (2015). Therefore hypothesis 9 regarding positive DIVP-LDBTA relationship as per trade off does not hold in Brazil. We found non-debt tax shields, asset structure and earning variations as insignificant predictors of long term leverage in Brazil.

Table 4.43: Regression Results for Brazilian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.463	(.316)	.425	(.283)
TANG	-.029	(.031)	-.036	(.028)
UNIQ	-.201*	(.115)	-.259**	(.131)
SIZE	.024	(.016)	.020***	(.007)
EVOL	.008	(.091)	-.034	(.093)
GROW	.124*	(.064)	.148**	(.064)
PROF	-.231***	(.065)	-.221***	(.062)
LIQD	-.018**	(.008)	-.018**	(.007)
DIVP	-.028**	(.012)	-.027**	(.011)
Observations	1,466		1,466	
Number of id	190		190	
R-squared (Within)	.162		.161	
Between	.036		.040	
Overall	.102		.106	
F_Stat/Wald_Chi^2	12.2 (.000)		245 (.000)	
rho	.756		.696	
Hausman_Chi2	44.3 (.000)			
Breusch Pagan LM	2179 (.000)			
Alphafehat (Mean)	2.72^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Regression output for Brazilian firms are shown in Table 4.44 both for fixed effects and random effects, to test the impact of firms' specific attributes on short term debt (SDBTA). The random effects as recommended by Hausman test suggest that Brazilian firms having more tangible assets (TANG), liquidity (LIQD) and higher dividend payout per share (DIVP) employ less short term debt in their capital structure. Regression slopes for TANG, LIQD and DIVP are negative and highly robust at 99% probability level. A number of empirical studies (Frank & Goyal, 2009; Martinez-Solano, 2004; Scherr & Hullburt, 2001; Wijst & Thurik, 1993) confirm our findings. As these findings do not validate trade off, hence we reject H2, H8 and H9.

Apart from three variables all the rest of explanatory variables are insignificant to predict short term borrowings in Brazil.

TABLE 4.44: Regression Results for Brazilian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.082	(.118)	.015	(.095)
TANG	-.027**	(.011)	-.025***	(.009)
UNIQ	-.123	(.134)	-.118	(.103)
SIZE	.003	(.005)	-.001	(.002)
EVOL	-.001	(.038)	.004	(.036)
GROW	-.005	(.030)	-.003	(.028)
PROF	-.006	(.022)	-.012	(.019)
LIQD	-.022***	(.004)	-.019***	(.003)
DIVP	-.015***	(.006)	-.014***	(.005)
Observations	1,466		1,466	
Number of id	190		190	
R-squared (Within)	.088		.086	
Between	.003		.015	
Overall	.036		.047	
F_Stat/Wald_Chi^2	6.05 (.000)		113 (.000)	
rho	0.564		.416	
Hausman_Chi2	8.3 (.060)			
Breusch Pagan LM	546 (.000)			
Alphafehat (Mean)	2.56^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.12 Chinese Results

4.12.1 Descriptive Summary and Correlation Matrix for Chinese Firms

Our sample for Chinese non financial Chinese firms comprises 661 Chinese firms with a total of 5804 observations over 2006-16. Summary statistics for Chinese firms have been presented in table 4.45. Median and Mean values of long term debt over total assets (LDBTA) across firms and data period are 0.117 and 0.151 respectively. This means that unlike US and UK Chinese firms make less use of long term debt to finance their assets. The overall minimum and maximum leverage variation id shows that standard deviation of 0.136 with global minimum and maximum of 0.000 and 0.875 respectively.

Similarly Median and Mean values of short term debt over total assets (SDBTA) are 0.131 and 0.149 respectively. SDBTA across Chinese firms has an overall standard Deviation of 0.115 with an overall minimum and maximum of 0.000 and 0.849 respectively.

The "between" and "within" variations are roughly equal as per EVOL is concerned. DIVP and GROW have higher "within" variation than "between" variation. All the rest of variables have more "between" variation than "within" variation.

Table 4.45: Descriptive Statistics for Chinese Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.117	.151	.136	.000	.875
	between			.112	.000	.668
	within			.075	-.239	.783
SDBTA	overall	.131	.149	.115	.000	.849
	between			.094	.000	.538
	within			.071	-.161	.704
NDTS	overall	.027	.030	.018	.000	.154
	between			.016	.001	.130
	within			.009	-.038	.105
TANG	overall	.399	.412	.220	.000	.975
	between			.201	.001	.924
	within			.090	-.215	1.146
UNIQ	overall	.097	.118	.092	.000	.810
	between			.090	.003	.674
	within			.033	-.157	.502
SIZE	overall	8.673	8.820	1.337	4.909	14.693
	between			1.244	5.891	14.350

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.533	5.502	12.208
EVOL	overall	.015	.023	.031	.000	.842
	between			.022	.003	.288
	within			.025	-.254	.577
GROW	overall	.050	.065	.056	.000	.477
	between			.036	.001	.226
	within			.044	-.105	.424
PROF	overall	.071	.081	.053	.000	.569
	between			.040	.006	.246
	within			.035	-.077	.489
LIQD	overall	1.092	1.206	.681	.075	4.991
	between			.556	.229	4.147
	within			.423	-1.091	4.945
DIVP	overall	.000	.099	.207	.000	1.000
	between			.115	.000	1.000
	within			.179	-.350	1.008

Table presents summary statistics for 661 Chinese firms using annual data 2006-2016

Table 4.46 presents the correlation coefficients between the explained and firm specific explanatory variables for Chinese firms used in the analysis. The matrix shows long term debt ratios in China are positively correlated with non debt tax shields, asset structure, size, growth and dividend payout per share. Long term leverage and rest of explanatory variables exhibit negative association. It is also evident from the matrix that firms with more non debt tax shields, asset tangibility and earnings volatility make more use of short term financing. Short term debt ratios have inverse association with rest of independent variables. To be very conservative we double check the multicollinearity (MC) issue for Chinese data also. There is no correlation coefficient equal or greater than 0.9 as suggested threshold level by Asteriou (2007) to suspect any data for serious multicollinearity issues. We also calculated VIF values to assess any significant multicollinearity issue but found no evidence regarding problematic MC.

Table 4.46: Correlation Matrix for Chinese Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.195*	1.000									
NDTS	.098*	.068*	1.000								
TANG	.397*	.073*	.602*	1.000							
UNIQ	-.216*	-.065*	-.048*	-.111*	1.000						
SIZE	.246*	-.153*	.063*	.071*	-.271*	1.000					
EVOL	-.016	.043*	.116*	.078*	-.011	-.102*	1.000				
GROW	.215*	-.056*	.242*	.459*	-.025	.070*	.038*	1.000			
PROF	-.044*	-.187*	.417*	.264*	-.025	.074*	.186*	.253*	1.000		
LIQD	-.192*	-.404*	-.293*	-.448*	.199*	-.171*	.021	-.136*	.060*	1.000	
DIVP	.014	-.127*	.025	-.015	-.010	.209*	-.079*	-.018	.115*	.044*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 661 Chinese firms using annual data from 2006 to 2016.

4.12.2 Chinese Regression Results:

Chinese regression results regarding long term leverage and firm's specific attributes are reported in table 4.47. As per fixed effects, show positive and robust slope for asset structure (TANG). This implies that Chinese firms with more tangible assets borrow more long term debt. This pattern support trade off (H2). Previous studies (Bevan & Danbolt, 2004; Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999) report similar findings.

Titman and Wessels (1988) report that unique firms are more vulnerable to financial distress hence such firms are expected to avoid higher long term leverage. As per trade off, uniqueness show negative and slightly robust coefficient estimate suggesting unique non financial firms in China avoid more long term debt, which supports H3.

Size is generally considered as inverse proxy of financial distress. Therefore according to trade off, larger firms are supposed to afford higher financial leverage. Our results show that larger Chinese firms are more levered than their smaller counterparts. Size coefficient is robust with 1% probability of error. These results are in line with prior studies (e.g. Akhtar & Oliver, 2009; Fama & French, 2002; Frank & Goyal, 2009; Gaud, et al., 2005; Wald, 1999) and trade off proposition (H4). Positive and moderately significant GROW coefficient suggests that Chinese firms with higher growth opportunities (GROW) make more use of long term debt. This relationship is inconsistent with both H6 and previous findings (e.g. Booth et al., 2001; Shyam-Sunder & Myers, 1999; Rajan & Zingales, 1995). However pecking order supports this particular pattern.

In agreement with a number of previous studies (e.g. Akhtar & Oliver, 2009; Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016; Kester, 1986; Lemmon et al., 2008), we found that highly profitable Chinese firms use less long term leverage. This relationship is strong with 99% confidence interval. This pattern is inconsistent with H7. Pecking order suggests that profitable firms are better positioned to use internal sources than opting for risky outside sources like debt. Our findings in this regard can be justified by pecking order.

Positive slope coefficient for firm liquidity (LIQD) reveals that liquid Chinese firms are highly levered. Positive significant leverage-liquidity relationship is in line with theoretical proposition of trade off (H8). Prior studies (Feidakis & Rovolis, 2007; Harris & Raviv, 1990) reports similar findings.

Finally, our results show that non-debt tax shields, business risk and dividends paying nature of firms have no or minimal potency to determine long term leverage in China.

TABLE 4.47: Regression Results for Chinese Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.250	(.221)	-.060	(.205)
TANG	.163***	(.033)	.207***	(.028)
UNIQ	-.087*	(.052)	-.133***	(.034)
SIZE	.041***	(.007)	.028***	(.004)
EVOL	-.033	(.078)	-.036	(.076)
GROW	.087**	(.040)	.091**	(.040)
PROF	-.330***	(.050)	-.335***	(.046)
LIQD	.009*	(.005)	.010**	(.005)
DIVP	.001	(.008)	-.001	(.008)
Observations	5,804		5,804	
Number of id	661		661	
R-squared (Within)	.141		.136	
Between	.238		.315	
Overall	.197		.248	
F_Stat/Wald_Chi^2	42 (.000)		1121.4 (.000)	
rho	.637		.554	
Hausman_Chi^2	237 (.000)			
Breusch Pagan LM	7951 (.000)			
Alphafehat (Mean)	1.10^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Chinese regression results regarding impact of firm's specific attributes on long term leverage are reported in table 4.48. Hausman test is significant, which means fixed effect model is reliable than random effects. Table 4.48 reports that Chinese firms having higher non debt tax shields (due to depreciation and amortization expense) use higher short term debt in their capital as indicated by positive moderately robust slope for NDTS. Thus we say that short term leverage-non debt tax shields relationship does not support trade off (H1). This particular pattern is opposite to prior findings (Garcia-Teruel & Martinez-Solano, 2004). However Wijst and Thurik (1993) report similar findings regarding depreciation charges and short term debt in the Netherlands. According to table 4.48 tangibility has negative and robust coefficient indicating that Chinese firms with more tangible assets make less use of short term debt, which is contradictory to H2. Findings of Wijst and Thurik (1993) support our results.

Growth of Chinese firms is another slightly significant (90%) determinant of short term debt ratios in China. As evident from negative GROW coefficient, we suggest that growing Chinese firms avoid using higher level of short term debt. In line with Scherr and Hulburt (2001) our results confirm trade off (H6).

Although trade off predicts positive impact of profitability, liquidity and dividend payout on financial leverage of a firm. However PROF, LIQD and DIVP have negative and significant slopes. This means that Chinese highly profitable, liquid and divided paying firms are less levered. All these three patterns do not support trade off (H7, H8 & H9). Prior literature such as Frank and Goyal (2009) and Ozkan (2000) support our findings.

The rest of coefficients are insignificant to predict SDBTA in Chinese sample of firms.

Table 4.48: Regression Results for Chinese Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.401**	(.201)	.360**	(.176)
TANG	-.058**	(.023)	-.059***	(.018)
UNIQ	-.010	(.054)	-.025	(.035)
SIZE	.006	(.006)	.006**	(.003)
EVOL	.067	(.088)	.076	(.095)
GROW	-.054*	(.030)	-.056**	(.029)
PROF	-.295***	(.043)	-.310***	(.040)
LIQD	-.068***	(.005)	-.070***	(.004)
DIVP	-.018**	(.007)	-.020***	(.007)
Observations	5,804		5,804	
Number of id	661		661	
R-squared (Within)	.230		.228	
Between	.208		.287	
Overall	.203		.249	
F_Stat/Wald_Chi^2	77 (.000)		1754 (.000)	
rho	.616		.554	
Hausman_Chi^2	36 (.000)			
Breusch Pagan LM	6342 (.000)			
Alphafehat (Mean)	1.04^{-10}			

Robust standard errors in parentheses
*** $p < .01$, ** $p < .05$, * $p < .1$

4.13 Indian Results

4.13.1 Descriptive Summary and Correlation Matrix for Indian Firms

The descriptive statistics for 1117 Indian firms with a total of 10201 observations over 2006-16 have been presented in table 4.49. Median and Mean values of long term debt over total assets across Indian firms and data period are 0.185 and 0.217 respectively. LDBTA across Indian firms has an overall standard deviation of 0.167 from overall mean with an overall minimum and maximum of 0.000 and 0.938 respectively.

Median and Mean values of short term debt over total assets (SDBTA) are 0.133 and 0.150 respectively. SDBTA across Indian firms has an overall standard Deviation of 0.118 with an overall minimum and maximum of 0.000 and 0.965 respectively. Unlike previous results of other countries Indian firms are comparably more levered in terms of total debt.

The "between" and "within" variations are roughly equal for EVOL, PROF and LIQD. DIVP has higher "within" variation. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.49: Descriptive Statistics for Indian Firms

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.185	.217	.167	.000	.938
	between			.146	.000	.808
	within			.090	-.288	.788
SDBTA	overall	.133	.150	.118	.000	.965
	between			.096	.000	.592
	within			.069	-.275	.865
NDTS	overall	.028	.032	.019	.000	.312
	between			.016	.001	.111
	within			.012	-.053	.264
TANG	overall	.395	.397	.196	.000	.984
	between			.169	.018	.864
	within			.101	-.287	1.098
UNIQ	overall	.116	.138	.105	.000	.980
	between			.088	.000	.621
	within			.063	-.387	.894
SIZE	overall	8.355	8.483	1.871	1.896	15.771
	between			1.710	4.396	14.396

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.703	1.062	13.765
EVOL	overall	.023	.032	.033	.000	.836
	between			.021	.004	.213
	within			.027	-.169	.655
GROW	overall	.051	.075	.078	.000	.815
	between			.043	.000	.255
	within			.067	-.162	.760
PROF	overall	.110	.117	.067	.000	.722
	between			.047	.002	.327
	within			.049	-.151	.674
LIQD	overall	1.274	1.414	.673	.017	4.977
	between			.502	.119	4.859
	within			.482	-1.600	5.019
DIVP	overall	.100	.184	.258	.000	1.000
	between			.158	.000	1.000
	within			.207	-.705	1.093

Table presents summary statistics for 1117 Indian firms using annual data 2006-2016

Table 4.50 presents the correlation coefficients between the explained and firm specific explanatory variables for Indian firms used in the analysis. The matrix shows that LDBTA has a direct association with non debt tax shields, asset structure of the firms, size and growth, while negative association with the rest of the variables. Unlike other countries, short term debt financing have negative association with all firms specific independent variables. As per Asteriou (2007) criteria (r=09 or VIF=10) for serious multicollinearity, we declare that there are no significant multicollinearity issues among the explanatory variables.

TABLE 4.50: Correlation Matrix for Indian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.188*	1.000									
NDTS	.182*	-.084*	1.000								
TANG	.394*	-.187*	.383*	1.000							
UNIQ	-.064*	-.144*	.027*	-.008	1.000						
SIZE	.209*	-.226*	-.072*	.050*	-.027*	1.000					
EVOL	-.015	-.001	.093*	-.010	-.004	-.140*	1.000				
GROW	.078*	-.138*	.119*	.371*	-.032*	.047*	.037*	1.000			
PROF	-.155*	-.089*	.273*	.031*	-.044*	-.013	.216*	.165*	1.000		
LIQD	-.236*	-.212*	-.126*	-.269*	.010	-.104*	.073*	-.010	.175*	1.000	
DIVP	-.068*	-.072*	.037*	.021*	.056*	.028*	.014	.040*	.073*	.038*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 1117 Indian firms using annual data from 2006 to 2016.

4.13.2 Indian Regression Results

Indian regression results to test the impact of firm's specific attributes on long term leverage are reported in table 4.51. LSDV model shows that Indian non financial firms use more long term debt when depreciation expenses are high. Positive and highly significant NDTS coefficient is both in contradiction with tax substitution hypothesis and trade-off theory (H1). These results are also contrary to previous studies (e.g. DeAngelo & Masulis, 1980; Wald, 1999). However similar results have been reported in Bradley et al. (1984).

Asset structure is significantly affecting long term debt in a direct manner in India. Positive coefficient of TANG means that firms with greater tangible assets use more long term leverage than other firms with low asset tangibility. This relationship is highly significant at 99% confidence level. These results justify the theoretical predictions of trade off (H2) and findings in previous studies (Bevan & Danbolt, 2004; Booth et al., 2001; Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999).

Size of Indian firms is another significant predictor of long term leverage in Indian non-financial sector. Positive and highly significant (99%) slope of firm size means that larger firms in India use higher level of financial leverage in their capital structures. As our findings are in agreement with trade off, hence we endorse H4.

Growth opportunities to Indian firms also significantly influence their borrowing behavior. Negative and robust slope of GROW indicates that growing Indian firms refrain from external sources for financing needs. Negative growth coefficient is consistent with trade-off (H6). Similar results have been reported in previous studies (e.g. Booth et al., 2001; Shyam-Sunder & Myers, 1999; Rajan & Zingales, 1995). Our results are contrary to pecking order and prior literature (i.e. Filsaraei et al., 2016; Kester, 1986; Michaelas et al., 1999; Wald, 1999).

Our results show that higher liquid Indian firms rely less on external borrowings. Highly significant (99%) slope of LIQD means that highly liquid Indian firms use less long term debt, which does not support theoretical proposition (H8). However, these findings can be justified under pecking order hypothesis and previous research (Antoniou et al., 2002; Karacaer et al., 2016; Niu, 2009; Ozkan, 2001).

Finally we found no other firm specific attribute that significantly predict long term borrowings in Indian non financial sector.

TABLE 4.51: Regression Results for Indian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.462***	(.142)	.562***	(0.136)
TANG	.147***	(.018)	.182***	(0.016)
UNIQ	-.001	(.021)	-.020	(0.019)
SIZE	.008***	(.003)	.014***	(0.002)
EVOL	.0581	(.064)	.082	(0.064)
GROW	-.248***	(.021)	-.244***	(0.020)
PROF	-.042	(.026)	-.091***	(0.025)
LIQD	-.012***	(.003)	-.014***	(0.003)
DIVP	-.008	(.006)	-.014**	(0.006)
Observations	10,201		10,201	
Number of id	1,117		1,117	
R-squared (Within)	.090		.088	
Between	.306		.338	
Overall	.227		.253	
F_Stat/Wald_Chi^2	37.5 (.000)		1309 (.000)	
Rho	.673		.570	
Hausman_Chi^2	682 (.000)			
Breusch Pagan LM	11122 (.000)			
Alphafehat (Mean)	-1.48^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Table 4.52 presents the regression results for determinants of short term debt ratios Indian firms. Output of fixed effects reveals that Indian firms with more tangible assets (TANG), larger in size (SIZE) and highly liquid (LIQD) are less levered, as indicated by negative and highly significant (99%) coefficients. Trade off predicts that tangibility, size and liquidity are all positive associated with leverage.

Therefore we say that our results regarding H2, H4 and H8 do not confirm trade off.

Results also suggest two positive and slightly significant coefficients for uniqueness (UNIQ) and earning volatility (EVOL). This means that unique and risky firms employ more short term leverage in India. Aggressive borrowings by unique and high risk firms again violate the predictions of trade off. In fact this observed pattern can be attributed to pecking order. Thus we reject H3 & H5 also in Indian context. We argue that in terms of significant firm specific predictors of short term debt, we found no evidence of trade off in India.

TABLE 4.52: Regression Results for Indian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.054	(.078)	-.038	(.072)
TANG	-.070***	(.011)	-.084***	(.010)
UNIQ	.031*	(.018)	-.015	(.016)
SIZE	-.007***	(.002)	-.012***	(.001)
EVOL	.092*	(.047)	.072	(.045)
GROW	-.003	(.013)	-.007	(.013)
PROF	-.003	(.021)	-.014	(.020)
LIQD	-.022***	(.002)	-.026***	(.002)
DIVP	-.002	(.004)	-.003	(.004)
Observations	10,201		10,201	
Number of id	1,117		1,117	
R-squared (Within)	.091		.088	
Between	.167		.222	
Overall	.141		.177	
F_Stat/Wald_Chi^2	38(.000)		1144(.000)	
rho	.619		.537	
Hausman_Chi^2	376(.000)			
Breusch Pagan LM	10928(.000)			
Alphafehat (Mean)	3.02^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.14 Indonesian Results

4.14.1 Descriptive Summary and Correlation Matrix for Indonesian Firms

The descriptive statistics for 146 Indonesian firms with a total of 1266 observations over 2006-16 have been presented in table 4.53. Descriptive summary reveals that on average Indonesian firms finance 22.6% of their total assets with long term debt. As we see higher variation of long term debt financing as evident from minimum and maximum values, we should rely on median leverage values of Indonesian firms. The median 19.9% for LDBTA means majority of Indonesian firms use roughly 20% long term debt financing. LDBTA across Indonesian firms has an overall standard deviation of 0.168 with an overall minimum and maximum of 0.000 and 0.867 respectively. Median and Mean values of short term debt over total assets (SDBTA) are 0.044 and 0.089 respectively with an overall standard deviation of 0.111 and overall minimum and maximum of 0.000 and 0.591 respectively.

The "between" and "within" variations are roughly equal for EVOL. DIVP and GROW have higher "within" variation than "between" variation. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.53: Descriptive Statistics for Indonesian Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.199	.226	.168	.000	.867
	between			.154	.001	.867
	within			.091	-.196	.635
SDBTA	overall	.044	.089	.111	.000	.591
	between			.092	.000	.448
	within			.064	-.191	.543
NDTS	overall	.038	.046	.037	.000	.652
	between			.031	.003	.181
	within			.024	-.088	.557
TANG	overall	.409	.425	.209	.000	.943
	between			.192	.022	.900
	within			.092	-.060	1.110

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	overall	.101	.142	.120	.000	.800
	between			.115	.010	.593
	within			.045	-.221	.588
SIZE	overall	14.241	13.607	3.050	3.819	19.383
	between			2.696	5.580	18.721
	within			1.486	7.016	21.485
EVOL	overall	.022	.031	.033	.001	.318
	between			.023	.003	.148
	within			.025	-.095	.236
GROW	overall	.048	.066	.064	.000	.469
	between			.040	.001	.202
	within			.051	-.088	.384
PROF	overall	.118	.135	.089	.000	.885
	between			.073	.026	.504
	within			.057	-.097	.714
LIQD	overall	1.389	1.631	.889	.025	4.983
	between			.732	.062	4.114
	within			.583	-.435	4.418
DIVP	overall	.000	.038	.182	.000	1.000
	between			.128	.000	.800
	within			.137	-.762	.947

Table presents summary statistics for 146 Indonesian firms using annual data 2006-2016

Table 4.54 presents the correlation coefficients between the explained and firm specific explanatory variables for Indonesian firms used in the analysis. The matrix shows that LDBTA correlates directly with NDTS, TANG, GROW and EVOL and inversely with the rest of explanatory variables.

Dividend paying and large firms makes more use of short term debt financing. Rests of the firm specific attributes are inversely correlated with short term debt choice in Indonesia. Multicollinearity issue among independent variables was crossed checked trough correlation coefficient and VIF. We found all our correlation coefficients far below 0.9 and VIF values less than 5. As per Asteriou (2007) criteria (r=09 or VIF=10) for serious multicollinearity, we declare that there are no significant multicollinearity issues in the data.

Table 4.54: Correlation Matrix for Indonesian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.263*	1.000									
NDTS	.238*	-.137*	1.000								
TANG	.365*	-.178*	.343*	1.000							
UNIQ	-.107*	-.199*	.083*	.068*	1.000						
SIZE	-.033	.027	-.058*	-.120*	.022	1.000					
EVOL	.003	-.090*	.081*	.067*	-.070*	-.116*	1.000				
GROW	.145*	-.102*	.202*	.317*	.026	.106*	.087*	1.000			
PROF	-.153*	-.187*	.327*	.006	-.058*	.115*	.324*	.221*	1.000		
LIQD	-.301*	-.294*	-.228*	-.264*	.106*	-.032	.038	-.111*	.226*	1.000	
DIVP	-.057*	.003	-.008	.067*	.099*	-.067*	-.009	-.019	-.077*	-.057*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 146 Indonesian firms using annual data from 2006 to 2016.

4.14.2 Indonesian Regression Results

Regression output for fixed and random effects in case of Indonesian firms is reported in Table 4.55. Fixed effects reveal that only two firm specific factors (profitability and liquidity) are significantly predicting borrowing behavior in Indonesia. Highly profitable firms in Indonesia avoid borrowing huge long term debt. Negative and moderately significant (95%) profitability coefficient is inconsistent with H7. However, this particular pattern can be justified under pecking order and several prior studies (e.g. Akhtar & Oliver, 2009; Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016; Lemmon et al., 2008).

Liquidity is another significant predictor of long term leverage in Indonesia. Under trade off framework, highly liquid firms are expected to be less exposed to bankruptcy. Therefore such firms may afford higher financial leverage (Shleifer & Vishny, 1992). But slope coefficient for liquidity shows that highly liquid Indonesian firms are less levered than their illiquid counterparts. These findings does not support theoretical proposition (H8). On the other hand pecking order hypothesis and previous findings (Antoniou et al., 2002; Karacaer et al., 2016) support our results. We found all the rest of regressors as insignificant to predict long term leverage in Indonesia.

Table 4.56 shows the regression output both for LSDV and error component model, to analyze the impact of firms' specific factors on short term debt in Indonesian non financial sector. Hausman test in case of Indonesia suggests that fixed effects are appropriate for analysis. Results from fixed effects suggest only four significant determinants of short term debt in Indonesia. Garcia-Teruel and Martinez-Solano (2004) support tax substitution hypothesis by reporting negative relationship between depreciation charges and short term borrowings. But positive robust coefficient of non debt tax shield reveals that Indonesian firms with higher depreciation and amortization expense employ more short term ratios. This relationship negates the predictions of tax substitution hypothesis and trade off (H1). Our results however, complement Wijst and Thurik (1993) findings.

TABLE 4.55: Regression Results for Indonesian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.024	(.163)	.241*	(.142)
TANG	.087	(.058)	.143***	(.050)
UNIQ	.043	(.122)	.055	(.077)
SIZE	.002	(.003)	.001	(.003)
EVOL	-.019	(.153)	.011	(.148)
GROW	-.098	(.080)	-.072	(.073)
PROF	-.184**	(.074)	-.236***	(.066)
LIQD	-.020**	(.008)	-.021***	(.008)
DIVP	-.014	(.027)	-.026	(.030)
Observations	1,266		1,266	
Number of id	146		146	
R-squared (Within)	.087		.080	
Between	.258		.371	
Overall	.160		.230	
F_Stat/Wald_Chi^2	5.3 (.000)		157 (.000)	
rho	.694		.555	
Hausman_Chi^2	53.2 (.000)			
Breusch Pagan LM	1361 (.000)			
Alphafehat (Mean)	2.55^{-10}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

In line with pecking order justifications, Indonesian firms with more tangible assets avoid higher short term borrowings as indicated by negative tangibility coefficient. This relationship is robust at 95%. Our results are in line with Wijst and Thurik (1993) in this regard, but contradictory to trade off (H2).

Large firms are expected to deal easily with bankruptcy costs (Titman & Wessels, 1988) than smaller firms hence expected to use higher financial leverage. Size coefficient estimate is robust and positive indicating that larger firms in Indonesia are more levered than their smaller counterparts, which complements theoretical proposition (H4). Prior literature (Berger & Udell, 1998; Scherr & Hulburt, 2001) also report similar findings.

Wijst and Thurik, (1993) results suggest that highly liquid firms may afford higher level of short term borrowings. But Indonesian regression output suggests that like most other countries, highly liquid Indonesian firms are less levered in short run. Again we reject the prediction of trade off (H8). However many prior studies (Garcia-Teruel & Martinez-Solano, 2004; Ozkan, 2000; Scherr and Hullburt, 2001) complement our findings.

The rest of 05 coefficients are insignificant and have minimal and no potency to predict short term leverage in Indonesia.

Table 4.56: Regression Results for Indonesian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.176*	(.095)	.104	(.081)
TANG	-.066**	(.031)	-.089***	(.026)
UNIQ	-.049	(.046)	-.086**	(.036)
SIZE	.005**	(.002)	.004**	(.002)
EVOL	-.105	(.116)	-.106	(.111)
GROW	.028	(.046)	.018	(.043)
PROF	-.059	(.042)	-.076**	(.038)
LIQD	-.039***	(.006)	-.040***	(.006)
DIVP	.000	(.018)	.000	(.018)
Observations	1,266		1,266	
Number of id	146		146	
R-squared (Within)	.150		.146	
Between	.128		.185	
Overall	.122		.159	
F_Stat/Wald_Chi^2	10 (.000)		221 (.000)	
rho	.645		.598	
Hausman_Chi^2	28 (.000)			
Breusch Pagan LM	1699 (.000)			
Alphafehat (Mean)	-7.89^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.15 Malaysian Results

4.15.1 Descriptive Summary and Correlation Matrix for Malaysian Firms

The descriptive statistics for 352 Malaysian firms with a total of 2943 observations over 2006-16 have been presented in table 4.57.

Median and Mean values of long term debt over total assets across Malaysian firms and data period are 0.106 and 0.143 respectively. LDBTA across Malaysian sample firms has an overall standard deviation of 0.134 from its overall mean. Overall minimum and maximum are 0.000 and 0.823 respectively. Median and Mean values of short term debt over total assets (SDBTA) are 0.066 and 0.100 respectively. SDBTA across Malaysian firms has an overall standard Deviation of 0.106 with an overall minimum and maximum of 0.000 and 0.553 respectively.

The “between” and “within” variations are roughly equal for GROW. All the rest of variables with exception to EVOL have more “between” variation than “within” variation.

Table 4.57: Descriptive Statistics for Malaysian Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.106	.143	.134	.000	.823
	between			.113	.000	.708
	within			.071	-.176	.698
SDBTA	overall	.066	.100	.106	.000	.553
	between			.091	.000	.427
	within			.055	-.271	.433
NDTS	overall	.025	.030	.026	.000	.331
	between			.025	.001	.187
	within			.010	-.030	.197
TANG	overall	.339	.353	.209	.000	.948
	between			.198	.001	.846
	within			.079	-.129	.755
UNIQ	overall	.102	.132	.109	.000	.963
	between			.099	.000	.690

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.057	-.315	.720
SIZE	overall	5.975	.227	1.571	2.948	11.797
	between			1.542	3.044	11.373
	within			.346	4.168	9.601
EVOL	overall	.021	.032	.040	.000	.595
	between			.027	.004	.188
	within			.032	-.143	.439
GROW	overall	.027	.041	.046	.000	.464
	between			.032	.000	.179
	within			.033	-.137	.327
PROF	overall	.082	.095	.085	.000	1.061
	between			.069	.012	.801
	within			.041	-.129	.423
LIQD	overall	1.571	1.805	.948	.026	4.998
	between			.826	.184	4.520
	within			.550	-.691	5.329
DIVP	overall	.068	.206	.278	.000	1.000
	between			.201	.000	.927
	within			.189	-.540	1.100

Table presents summary statistics for 352 Malaysian firms using annual data 2006-2016

Table 4.58 presents the correlation coefficients between the explained and firm specific explanatory variables for Malaysian firms used for analysis. The matrix shows that long term debt has a direct correlation with non debt tax shields, tangibility, size, uniqueness and growth and inverse association with business risk, profitability and liquidity. Similarly short term debt ratios are positively correlated with tangibility and negatively correlated with the rest of explanatory variables. Generally serious multicollinearity issues arise when correlation coefficient 'r' value exceeds 0.9 or VIF value approaches to 10 (Asteriou, 2007). Thus we argue that all our correlation coefficients are far below the threshold level and VIF less than 3 hence no serious issue of multicollinearity is there in the data.

Table 4.58: Correlation Matrix for Malaysian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.204*	1.000									
NDTS	.055*	-.043*	1.000								
TANG	.126*	.002	.479*	1.000							
UNIQ	.000	-.151*	.078*	.089*	1.000						
SIZE	.366*	-.106*	-.137*	-.027	-.193*	1.000					
EVOL	-.036	-.059*	.100*	-.033	.052*	-.194*	1.000				
GROW	.145*	-.050*	.361*	.391*	.001	.104*	-.034	1.000			
PROF	-.032	-.113*	.379*	.078*	-.083*	.076*	.167*	.248*	1.000		
LIQD	-.253*	-.388*	-.121*	-.269*	.033	-.086*	-.032	-.096*	.066*	1.000	
DIVP	-.066*	-.096*	.069*	-.004	-.067*	.266*	-.076*	.079*	.306*	.096*	1.000

*** $p < .01$, ** $p < .05$, * $p < .1$

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 352 Malaysian firms using annual data from 2006 to 2016.

4.15.2 Malaysian Regression Results

Table 4.59 presents the regression results regarding firm's attributes and long term leverage for Malaysian firms. According to fixed effect model a number of firm specific attributes are related to long term debt ratios in Malaysia. Fixed effects regarding Malaysian firms suggest that Asset structure is significantly affecting long term debt in non financial firms of Malaysia. Positive tangibility coefficient means that firms with greater tangible assets use more long term leverage than other firms with low asset tangibility. This relationship is slightly significant at 99% confidence level. These results justify the theoretical predictions of trade off (H2). These findings are also in line with previous studies (Bevan & Danbolt, 2004; Frank & Goyal, 2009).

Positive and robust regression coefficient of firm size indicates that larger non financial Malaysian firms make more use of long term leverage. Positive leverage-size relationship is in accordance with trade-off theory (H4) and in line with prior studies (Friend & Lang, 1988; Frank & Goyal, 2009; Fama & French, 2002; Wald, 1999).

Our results show that Malaysian firms with higher growth opportunities make more use of long term debt. Positive and significant (90%) growth coefficient is contrary to trade-off (H6). These results do not support previous studies (e.g. Booth et al., 2001; Shyam-Sunder & Myers, 1999; Rajan & Zingales, 1995).

Profitability is another significant predictor of long term leverage in Malaysia. According to results profitable Malaysian firms use significantly lower level of long term leverage. This implies that profitable non financial firms in Malaysia prefer to avoid risky financing options and cost of information asymmetry when least risky options are available internally. Negative and significant relationship between profitability and long term debt in the Malaysian context is opposite to the predictions of trade off (H7) and some prior literature (i.e. Frank & Goyal. 2009; Long & Malitz, 1988). Based on our results we argue that Malaysian non financial firms care more about cost of financial distress than high tax advantages when profitability is high. Our results in this regard are consistent with pecking order hypothesis and prior literature (Booth et al., 2001; Shyam-Sunder & Myers, 1999; Supanvanij, 2006).

Liquidity shows negative and slightly significant coefficient for Malaysian firms. This means that highly liquid non financial firms use less long term debt than their illiquid counterparts. These results confirm the predictions of pecking order hypothesis and are in line with previous research (Karacaer et al., 2016; Ozkan, 2001). Negative significant coefficient of liquidity does not support the predictions of trade off (H8) and other empirical findings (like Harris & Raviv, 1990). We found non-debt tax shields, uniqueness, earning volatility and dividend payout as insignificant predictors of long term debt ratios in Malaysia.

TABLE 4.59: Regression Results for Malaysian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.283	(.278)	.238	(.231)
TANG	.116***	(.037)	.089***	(.031)
UNIQ	.026	(.038)	.031	(.034)
SIZE	.077***	(.012)	.048***	(.005)
EVOL	.058	(.062)	.049	(.061)
GROW	.105*	(.060)	.130**	(.058)
PROF	-.151**	(.064)	-.171***	(.050)
LIQD	-.009**	(.004)	-.013***	(.003)
DIVP	-.014	(.009)	-.019**	(.008)
Observations	2,943		2,943	
Number of id	352		352	
R-squared (Within)	.166		.155	
Between	.195		.225	
Overall	.185		.207	
F_Stat/Wald_Chi^2	26 (.000)		541 (.000)	
rho	.758		.638	
Hausman_Chi^2	57.3 (.000)			
Breusch Pagan LM	4727 (.000)			
Alphafehat (Mean)	-4.64^{-12}			

Robust standard errors in parentheses
*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4.60 reports that only three independent variables are significantly predicting short term debt ratios in Malaysia. According to trade off, generally tangible assets are considered as good collateral and firms having more of it are expected to use more financial leverage. But Malaysian firms having more tangible assets make less use of short term debt, which contradicts H2. This relationship is significant with 99% probability. Wijst and Thurik (1993) also report negative relationship between asset structure and short term debt in the Netherlands.

Malaysian firms exhibit conservative behavior by borrowing less when earnings are highly volatile. Negative and slightly significant slope of earning volatility supports trade off (H5). Our results contradict Diamond (1991) suggesting that in case of higher business risk short term debt may be a good idea for firms.

In line with pecking order and Scherr and Hullburt (2001), our results suggest that highly liquid Malaysian firms are least levered. As these predictions are contrary to trade off, therefore we reject H8. Besides asset tangibility, earning volatility and liquidity, we found no significant determinant of short term debt in Malaysia.

TABLE 4.60: Regression Results for Malaysian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.021	(.165)	.025	(.136)
TANG	-.051***	(.019)	-.047***	(.016)
UNIQ	-.049	(.061)	-.070	(.051)
SIZE	.009	(.007)	.003	(.003)
EVOL	-.078*	(.047)	-.097**	(.045)
GROW	-.050	(.042)	-.046	(.041)
PROF	-.065	(.051)	-.074	(.046)
LIQD	-.038***	(.004)	-.040***	(.003)
DIVP	-.005	(.006)	-.004	(.006)
Observations	2,943		2,943	
Number of id	352		352	
R-squared (Within)	.178		.174	
Between	.122		.225	
Overall	.127		.205	
F_Stat/Wald_Chi^2	28 (.000)		636 (.000)	
rho	.720		.674	
Hausman_Chi^2	28.2 (.000)			
Breusch Pagan LM	5180 (.000)			
Alphafehat (Mean)	7.2^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.16 South African Results

4.16.1 Descriptive Summary and Correlation Matrix for South African Firms

The descriptive statistics for 100 South African firms with a total of 990 observations over 2006-16 have been presented in table 4.61.

Median and Mean values for our first dependent variable (LDBTA) measured as long term debt over total assets across South Africa is 0.109 and 0.149 respectively. LDBTA across South African sample firms has an overall standard deviation of 0.153 with an overall minimum and maximum of 0.000 and 0.923 respectively. Median and Mean values of our second dependent variable (SDBTA) measured as short term debt over total assets (SDBTA) is 0.017 and 0.052 respectively. SDBTA across South African firms has an overall standard deviation of 0.079 with an overall minimum and maximum of 0.000 and 0.410 respectively. Table 4.61 also shows that "between" and "within" variations are roughly equal for EVOL and GROW like Malaysian firms. DIVP has higher "within" variation than "between" variation. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.61: Descriptive Statistics for South African Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.109	.149	.153	.000	.923
	between			.130	.001	.673
	within			.083	-.524	.504
SDBTA	overall	.017	.052	.079	.000	.410
	between			.064	.000	.320
	within			.045	-.214	.317
NDTS	overall	.033	.038	.028	.000	.279
	between			.024	.001	.129
	within			.014	-.063	.188
TANG	overall	.325	.342	.235	.000	.895
	between			.227	.002	.827
	within			.063	-.022	.652
UNIQ	overall	.135	.166	.152	.000	.921

Variable		Median	Mean	Std. Dev.	Min	Max
	between			.132	.000	.790
	within			.074	-.306	.816
SIZE	overall	8.475	8.374	1.854	3.158	13.473
	between			1.867	3.985	12.756
	within			.445	6.014	10.319
EVOL	overall	.022	.035	.046	.000	.611
	between			.032	.006	.191
	within			.035	-.156	.455
GROW	overall	.054	.067	.061	.000	.648
	between			.043	.000	.211
	within			.044	-.091	.594
PROF	overall	.142	.162	.108	.000	.958
	between			.087	.000	.592
	within			.065	-.324	.584
LIQD	overall	1.454	1.643	.774	.153	4.993
	between			.636	.442	3.745
	within			.463	-.491	4.062
DIVP	overall	.000	.181	.291	.000	1.000
	between			.198	.000	.818
	within			.211	-.637	1.090

Table presents summary statistics for 100 South African firms using annual data 2006-2016

Table 4.62 presents the correlation coefficients between the explained and firm specific explanatory variables for South African firms used in the analysis. The matrix shows that long term debt ratios in South African firms are positively correlated with non debt tax shields, tangibility, size, dividend payout per share and growth and negatively correlated with the rest of independent variables. However short term debt ratios are positively correlated only with only uniqueness and negatively correlated with the rest of explanatory variables. To check the issue of multicollinearity variance inflation factors were calculated and found less than 5. We also examined correlation coefficients and found no coefficient equal or greater than threshold (0.9) that may pose multicollinearity. Hence based on Asteriou (2007), we declare that there are no significant multicollinearity issues among the explanatory variables.

Table 4.62: Correlation Matrix for South African Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.143*	1.000									
NDTS	.196*	-.189*	1.000								
TANG	.256*	-.201*	.488*	1.000							
UNIQ	-.093*	.095*	-.214*	-.291*	1.000						
SIZE	.179*	-.170*	.121*	.217*	-.242*	1.000					
EVOL	-.003	-.008	-.008	.098*	-.076*	-.118*	1.000				
GROW	.102*	-.122*	.480*	.564*	-.234*	.138*	.095*	1.000			
PROF	-.125*	-.089*	.259*	.161*	-.051	.060	.199*	.349*	1.000		
LIQD	-.226*	-.223*	-.266*	-.156*	.052	.004	.091*	-.149*	.082*	1.000	
DIVP	.032	-.026	.009	.056	-.012	.232*	.022	.088*	.133*	.022	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 100 South African firms using annual data from 2006 to 2016.

4.16.2 South African Regression Results

Table 4.63 presents the regression results to explore firms' specific determinants of long term debt ratios (LDBTA) in South Africa. As Hausman suggests, fixed effect model shows that only size and profitability are significant variables to predict leverage in South Africa.

Regression results suggest that larger South African firms are more levered than smaller firms as evident from positive and moderately significant size coefficient. Positive regression coefficient of firm size is in accordance with trade-off theory (H4) and in line with prior studies (Frank & Goyal, 2009; Wald, 1999). These results are opposite to the findings of Kester, (1986) and pecking order predictions.

Profitability is another positive and highly robust predictor of long term leverage. Results show that profitable South African firms use significantly lower level of long term leverage. These predictions are inconsistent with H7. However pecking order hypothesis and a number of prior studies (e.g. Akhtar & Oliver, 2009; Fama & French, 2002; Friend & Lang, 1988; Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016) supports our findings. Other regressors of our model have mixed signs of slope and are insignificant.

Table 4.64 presents the regression results both for LSDV and error component model to investigate firms' specific determinants of short term debt (SDBTA) in South Africa.

As per Hausman recommendation random effects suggest negative and moderately significant tangibility slope. This means that firms with more tangible assets avoid short leverage in South Africa. Negative relationship between asset structure and short term leverage is opposite to what trade off predicts (H2).

Large firms have low risk of financial bankruptcy costs (Titman & Wessels, 1988) than smaller firms hence expected to use higher financial leverage. However, our results suggest that larger South African firms rely less on short term borrowings. These predictions are contradictory to trade off (H4). Similar findings are reported by Garcia-Teruel and Martinez-Solano (2004).

TABLE 4.63: Regression Results for South African Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.349	(.320)	.353	(.307)
TANG	.082	(.099)	.104	(.074)
UNIQ	.058	(.048)	.046	(.045)
SIZE	.048**	(.022)	.026**	(.010)
EVOL	.108	(.112)	.116	(.106)
GROW	-.074	(.126)	-.073	(.122)
PROF	-.299***	(.076)	-.308***	(.072)
LIQD	-.006	(.013)	-.008	(.012)
DIVP	-.028	(.017)	-.028*	(.016)
Observations	990		990	
Number of id	100		100	
R-squared (Within)	.157		.149	
Between	.051		.088	
Overall	.081		.120	
F_Stat/Wald_Chi^2	8.11 (.000)		158 (.000)	
rho	.748		.663	
Hausman_Chi^2	24 (.000)			
Breusch Pagan LM	1672 (.000)			
Alphafehat (Mean)	-8.55^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Liquidity of South African firms is another highly significant predictor of short term borrowings in South Africa. Negative liquidity coefficient suggests that highly liquid firms are less levered in South Africa. Our results do not support trade off (H8). However, pecking order and previous literature (Ozkan, 2000 Scherr & Hullburt, 2001) validate our results.

Dividend paying firms are expected to be mature and profitable (Smith & Watts, 1992). Then we theoretically propose that dividend paying firms should have low risk of bankruptcy under trade off framework. Hence such firms may use more leverage. Regression output suggests that South African firms paying more dividends per share use more short term debt per assets than non paying firms. Positive and slightly significant slope of DIVP supports theoretical proposition under trade off (H9). Our results complement previous literature (Chang & Rhee, 1990; Chen et al., 2009; Lee & Xing, 2004).

Rest of our regressors have insignificant slopes, which means that during our data period (2006-2016) these variables have no potency to predict short term borrowing in South Africa.

TABLE 4.64: Regression Results for South African Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	-.029	(.129)	-.117	(.133)
TANG	-.041	(.034)	-.054**	(.024)
UNIQ	-.033	(.020)	-.025	(.022)
SIZE	-.005	(.006)	-.006*	(.003)
EVOL	.014	(.050)	.017	(.050)
GROW	.066	(.080)	.062	(.081)
PROF	-.003	(.032)	.000	(.032)
LIQD	-.035***	(.006)	-.034***	(.006)
DIVP	.018*	(.010)	.017*	(.010)
Observations	990		990	
Number of id	100		100	
R-squared (Within)	.156		.154	
Between	.057		.088	
Overall	.090		.115	
F_Stat/Wald_Chi^2	8 (.000)		167 (.000)	
rho	.675		.652	
Hausman_Chi^2	12 (.29)			
Breusch Pagan LM	1787 (.000)			
Alphafehat (Mean)	-1.75^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.17 Turkish Results

4.17.1 Descriptive Summary and Correlation Matrix for Turkish Firms

Table 4.65 reports descriptive summary for Turkish firms. A total of 120 non financial firms from Turkey with a total of 1050 observations over 2006-16 are included in our sample.

Median and Mean values of long term debt over total assets across firms and data period are 0.145 and 0.184 respectively. LDBTA across Turkish sample firms has an overall standard deviation of 0.167 with an overall minimum and maximum of 0.000 and 0.917 respectively.

Median and Mean values of short term debt over total assets (SDBTA) are 0.048 and 0.087 respectively. SDBTA across Turkish firms has an overall standard deviation of 0.111 with an overall minimum and maximum of 0.000 and 0.883 respectively. Table 4.65 shows that "between" and "within" variations are roughly equal for SDBTA, EVOL and PROF. Dividend payout per share exhibits more within variation. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.65: Descriptive Statistics for Turkish Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.145	.184	.167	.000	.917
	between			.141	.002	.551
	within			.099	-.266	.766
SDBTA	overall	.048	.087	.111	.000	.883
	between			.078	.000	.467
	within			.081	-.211	.787
NDTS	overall	.030	.032	.022	.000	.185
	between			.019	.000	.100
	within			.013	-.029	.133
TANG	overall	.349	.353	.189	.000	.985
	between			.179	.015	.970
	within			.075	-.055	.679

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	overall	.122	.137	.092	.000	.563
	between			.087	.017	.384
	within			.031	-.042	.339
SIZE	overall	6.428	6.494	1.548	2.021	10.771
	between			1.543	2.241	9.564
	within			.471	4.776	7.971
EVOL	overall	.024	.033	.028	.001	.269
	between			.022	.002	.152
	within			.021	-.084	.150
GROW	overall	.037	.058	.090	.000	.947
	between			.079	.000	.813
	within			.050	-.594	.380
PROF	overall	.093	.101	.061	.001	.349
	between			.047	.006	.274
	within			.042	-.037	.268
LIQD	overall	1.446	1.634	.838	.157	4.937
	between			.763	.235	4.651
	within			.495	.216	3.994
DIVP	overall	.000	.147	.321	.000	1.000
	between			.192	.000	1.000
	within			.273	-.603	1.047

Table presents summary statistics for 120 Turkish firms using annual data 2006-2016

To assess the direction of association and issue of multicollinearity pair wise correlation matrix for our explained and firm specific explanatory variables has been reported in Table 4.66 for Turkish firms. The matrix shows that long term debt financing in Turkish firms is positively associated with non debt tax shields, tangibility, uniqueness, size and growth and negatively correlated with the rest of independent variables. Similarly short term debt to assets ratio is positively correlated with non debt tax shields, uniqueness, earning volatility and growth and negatively correlated with the rest of explanatory variables. Serious multicollinearity issues arise when correlation coefficient 'r' value exceeds 0.9 or VIF value approaches to 10 (Asteriou, 2007). Thus we argue that based on correlation coefficients and VIP factor there are no serious multicollinearity issues among the explanatory variables.

TABLE 4.66: Correlation Matrix for Turkish Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.118*	1.000									
NDTS	.091*	.027	1.000								
TANG	.190*	-.069*	.314*	1.000							
UNIQ	.091*	.016	.123*	.032	1.000						
SIZE	.153*	-.058	.099*	.005	.153*	1.000					
EVOL	-.058	.077*	.072*	.001	-.015	-.318*	1.000				
GROW	.168*	.041	.317*	.235*	-.060	.106*	.105*	1.000			
PROF	-.092*	-.126*	.369*	.011	-.196*	.149*	.157*	.167*	1.000		
LIQD	-.345*	-.324*	.006	-.165*	-.076*	-.047	-.032	-.084*	.206*	1.000	
DIVP	-.064*	-.066*	-.053	-.025	-.045	-.142*	.081*	-.045	.082*	.140*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*
Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 120 Turkish firms using annual data from 2006 to 2016.

4.17.2 Turkish Regression Results

Table 4.67 contains regression output regarding firm specific determinants of long term debt ratios for Turkish firms. Fixed effects model is best to use as per Hausman test. Fixed effect model reports that only three variables are significant determinants of long term debt in Turkey. In perfect accord with tax substitution hypothesis, Turkish firms with high non debt tax shields (due to higher depreciation and amortization expense) make less use of long term debt ratios. This relationship is robust (95%) and in line with prior findings (e.g. DeAngelo & Masulis 1980; Deesomsak et al., 2004; Wald, 1999). Thus we say that tax substitution hypothesis is valid, which is consistent with H1.

Positive long term leverage-uniqueness relationship as indicated by regression coefficient suggests that unique non financial firms in the Turkey employ more long term debt. This particular relationship is slightly significant at 90% confidence. Titman and Wessels (1988) suggest that unique firms are more exposed to higher costs of financial distress than common firms. Hence to avoid bankruptcy unique firms are expected to use less leverage. However our findings are opposite to Titman and Wessels (1988) and trade off (H3).

Size of the firm is another significant variable of long term borrowings in Turkey. Size is generally considered as inverse proxy of bankruptcy costs (De Jong et al., 2008). Hence under trade off proposition, larger firms are expected to make more use of financial leverage. As per results, positive regression coefficient of firm size indicates that larger non financial Turkey firms make more use of long term leverage. This relationship is highly significant and in accordance with trade-off theory (H4). These results are in line with prior studies (Friend & Lang, 1988; Frank & Goyal, 2009; Fama & French, 2002; Wald, 1999). We find no other independent variable as a significant predictor of LDBTA in Turkish non financial sector.

Table 4.67: Regression Results for Turkish Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	-.683**	(.318)	-.565*	(.297)
TANG	.074	(.069)	.100*	(.057)
UNIQ	.194*	(.116)	.161*	(.088)
SIZE	.088***	(.023)	.031***	(.010)
EVOL	.037	(.173)	.032	(.178)
GROW	.065	(.061)	.099*	(.055)
PROF	-.038	(.107)	-.097	(.110)
LIQD	-.012	(.008)	-.024***	(.007)
DIVP	.017	(.012)	.022*	(.013)
Observations	1,050		1,050	
Number of id	120		120	
R-squared (Within)	.168		.144	
Between	.018		.106	
Overall	.045		.138	
F_Stat/Wald_Chi^2	9.21(.000)		167(.000)	
rho	.776		.587	
Hausman_Chi^2	87.1(.000)			
Breusch Pagan LM	1137.8(.000)			
Alphafehat (Mean)	7.57^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Results of regression analysis carried out to know about determinants of short term borrowings in Turkey are reported in Table 4.68. Both fixed and random effects are presented in the said table. However Hausman test shows that individual specific effects are not independently distributed, therefore fixed effect is appropriate model to apply.

Regression coefficient of non debt tax shields is significant and positive indicating that Turkish firms having higher level of tax shields from annual depreciation and amortization make more use of short term debt. These results are not consistent with tax substitution effect and trade off (H1). These findings are also inconsistent with prior findings (Garcia-Teruel & Martinez-Solano, 2004). Generally highly unique firms are expected to be least levered due to high probability of financial distress (Titman & Wessels, 1988). Results suggest that unique Turkish firms employ lower short term leverage into their capital structure. This relationship is significant at 10% level of error. Turkish results in this regard support trade off (H3).

Liquidity and dividend payout per share also have negative significant coefficients. This implies that Turkish firms have more liquid assets and higher dividend payouts also avoid using more short term debt ratios. In both cases trade off does not hold ground. Hence H8 & H9 cannot be approved. All the remaining independent variables are affecting SDBTA in a minimal or insignificant manner.

Table 4.68: Regression Results for Turkish Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.34**	(.392)	.765**	(.305)
TANG	-.093	(.066)	-.090**	(.040)
UNIQ	-.199*	(.118)	-.116	(.074)
SIZE	.008	(.016)	.004	(.004)
EVOL	.194	(.236)	.209	(.226)
GROW	-.035	(.062)	-.012	(.060)
PROF	-.104	(.089)	-.115	(.075)
LIQD	-.051***	(.006)	-.048***	(.006)
DIVP	-.023*	(.012)	-.019	(.012)
Observations	1,050		1,050	
Number of id	120		120	
R-squared (Within)	.161		.158	
Between	.100		.169	
Overall	.105		.149	
F_Stat/Wald_Chi^2	9(.000)		190.4(.000)	
rho	.485		.381	
Hausman_Chi^2	25(.000)			
Breusch Pagan LM	702(.000)			
Alphafehat (Mean)	-2.91^{-10}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.18 Polish Results

4.18.1 Descriptive Summary and Correlation Matrix for Polish Firms

A total of 217 Polish non financial firms are included in our sample having 1990 firm-year observations. The descriptive summary for Polish non financial firms over 2006-16 have been presented in table 4.69. The said table displays the overall mean, median, std.dev, minimum and maximum for all the explanatory and explained variables. Furthermore the panel nature of the data has been utilized to show variation break ups. Median and Mean values of long term debt over total assets (LDBTA) across firms and data period are 0.100 and 0.131 respectively. LDBTA across Polish sample has an overall standard deviation of 0.130 with an overall minimum and maximum of 0.000 and 0.985 respectively.

Median and Mean values of short term debt over total assets (SDBTA) are 0.007 and 0.042 respectively. SDBTA across has an overall standard Deviation of 0.068 with an overall minimum and maximum of 0.000 and 0.650 respectively.

Variation break ups reveal that the “between” and “within” variations are roughly equal for SDBTA, EVOL, GROW and PROF. DIVP has higher “within” variation than “between” variation. All the rest of variables have more “between” variation than “within” variation.

Table 4.69: Descriptive Statistics for Polish Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.100	.131	.130	.000	.985
	between			.108	.000	.618
	within			.076	-.193	.695
SDBTA	overall	.007	.042	.068	.000	.650
	between			.047	.000	.228
	within			.050	-.187	.491
NDTS	overall	.034	.038	.025	.000	.205
	between			.022	.002	.149
	within			.012	-.050	.159

Variable		Median	Mean	Std. Dev.	Min	Max
TANG	overall	.329	.341	.217	.000	.967
	between			.208	.005	.929
	within			.074	-.013	.775
UNIQ	overall	.143	.170	.118	.000	.895
	between			.111	.000	.573
	within			.052	-.321	.575
SIZE	overall	5.617	5.762	1.680	1.096	11.120
	between			1.595	1.965	10.970
	within			.449	2.981	7.907
EVOL	overall	.024	.037	.047	.001	.519
	between			.038	.003	.312
	within			.035	-.189	.405
GROW	overall	.041	.058	.062	.000	.502
	between			.041	.001	.239
	within			.048	-.135	.428
PROF	overall	.093	.106	.070	.000	.637
	between			.052	.004	.330
	within			.048	-.115	.567
LIQD	overall	1.436	1.638	.806	.155	4.991
	between			.640	.262	4.185
	within			.526	-.511	5.044
DIVP	overall	.000	.074	.232	.000	1.000
	between			.117	.000	.625
	within			.199	-.551	.983

Table presents summary statistics for 217 Polish firms using annual data 2006-2016

Table 4.70 presents the correlation coefficients between the explained and firm specific explanatory variables for Polish firms used in the analysis. The matrix shows that long term leverage ratios are positively correlated with non debt tax shields, tangibility, uniqueness, size and growth and negatively correlated with the rest of independent variables. Short term leverage ratios are positively correlated with uniqueness, earning volatility and size. SDBTA is negatively correlated with the rest of explanatory variables. As all of our correlation coefficients are far below than threshold (0.9), hence based on Asteriou (2007), we declare that our data does not suffer from problematic multicollinearity issues.

Table 4.70: Correlation Matrix for Polish Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.173*	1.000									
NDTS	.171*	-.049*	1.000								
TANG	.218*	-.070*	.508*	1.000							
UNIQ	.049*	.008	.116*	.015	1.000						
SIZE	.184*	.001	.051*	.195*	-.250*	1.000					
EVOL	-.064*	.054*	.049*	-.101*	.044*	-.207*	1.000				
GROW	.113*	-.081*	.276*	.321*	.108*	-.030	.035	1.000			
PROF	-.060*	-.085*	.378*	.077*	.035	.004	.211*	.269*	1.000		
LIQD	-.285*	-.245*	-.118*	-.103*	.072*	-.177*	.050*	-.027	.181*	1.000	
DIVP	-.083*	-.081*	.054*	.064*	-.014	-.072*	.007	.038	.136*	.089*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 217 Polish firms using annual data from 2006 to 2016.

4.18.2 Polish Regression Results

Regression output regarding impact of firm's attributes on long term leverage ratios in Polish firms is presented in Table 4.71. Hausman test recommends fixed effects model is appropriate. Results of fixed effect model reveals positive regression coefficient of size (SIZE) indicating that larger Polish firms make more use of long term leverage than smaller firms. This relationship is highly significant with a confidence level of 99%. Positive long term leverage-size relationship is in accordance with trade-off theory and in line with prior studies (Frank & Goyal, 2009; Fama & French, 2002). Thus we accept our H4. A possible reason for this particular pattern may that size decreases the risk of financial bankruptcy (De Jong., 2008).

Trade off proposes that during volatile earning periods introduction of leverage would further push bankruptcy costs. Hence leverage during periods of turbulent earnings should be restricted. According to results Polish firms borrow more long term debt when earning volatility is high. This relationship is highly significant with probability of 1% error. Aggressive borrowing during periods of high earning volatility is contradiction of trade-off theory (H5). Positive earnings volatility slope in Poland is however in line with pecking order and many previous empirical studies (Nguyen & Ramachandran, 2006).

Coefficient of profitability suggests that profitable Polish firms use significantly lower level of long term leverage. This implies that profitable Polish firms avoid risky options when least risky sources of financing are available internally. Negative and significant (99%) relationship between profitability and long term debt in the Poland is opposite to both trade off (H7) and prior literature (i.e. Frank & Goyal. 2009; Long & Malitz, 1988). Based on our results we argue that Polish firms care more about cost of financial distress than high tax advantages when profitability is high. Our results are consistent with pecking order hypothesis and prior literature (Booth et al., 2001; Shyam-Sunder & Myers, 1999; Supanvanij, 2006).

Liquidity (LIQD) shows negative and highly significant (99%) coefficients for Polish firms. This means that highly liquid Polish firms use low level of long term debt ratios. These results confirm the predictions of pecking order hypothesis and are in line with previous research (Karacaer et al., 2016; Niu, 2009; Ozkan, 2001). Negative and highly significant coefficient of LIQD does not support the predictions of trade off and other empirical findings (like Harris & Raviv, 1990). Thus our hypothesis 8 regarding positive LIQID-LDBTA relationship under trade off could not be substantiated in Poland. The rest of regressors are insignificant to determine long term leverage in Poland.

TABLE 4.71: Regression Results for Polish Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.0004	(.281)	.038	(.285)
TANG	-.029	(.059)	-.011	(.041)
UNIQ	-.011	(.056)	-.019	(.049)
SIZE	.039***	(.010)	.023***	(.005)
EVOL	.249***	(.086)	.192**	(.083)
GROW	.057	(.061)	.081	(.060)
PROF	-.172***	(.062)	-.174***	(.059)
LIQD	-.025***	(.006)	-.027***	(.005)
DIVP	.014	(.010)	.009	(.010)
Observations	1,990		1,990	
Number of id	217		217	
R-squared (Within)	.113		.104	
Between	.050		.093	
Overall	.055		.093	
F_Stat/Wald_Chi^2	11.2 (.000)		222 (.000)	
rho	.692		.597	
Hausman_Chi^2	37.4 (.000)			
Breusch Pagan LM	2590 (.000)			
Alphafehat (Mean)	-5.09^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

Regression results to test the impact of firms' specific factors on short term borrowings in Poland are reported in Table 4.72. Hausman test suggests that random effect model is appropriate for predictions. Random effects suggest that only growth options, liquidity and dividend payout per share significantly predict short term debt in Polish non financial sector. High growth firms use less short term debt ratios in Poland. These results are contrary to Barclays and Smith (1995).

However, this particular pattern is both in line with trade off (H6) and previous findings (Scherr & Hulburt, 2001).

Many prior studies (Garcia-Teruel & Martinez-Solano, 2004; Ozkan, 2000) suggest liquid firms are most likely less levered. In line with these findings, negative and significant coefficient of liquidity suggests that highly liquid Polish firms avoid using higher levels of short term borrowings. As negative short term leverage-liquidity relationship does not support trade off hence H8 cannot be accepted.

Polish regression output indicates that Polish firms paying higher portions of their earnings as dividends (DIVP) make less use of short term debt. This particular relationship is slightly robust at 90% confidence interval. The reason may be that dividend paying firms are mostly mature with stable cash flows, thus expected to be less reliant on external borrowings. Our results are not in compliance with trade off predictions, thus H9 cannot be accepted. Our results suggest that the rest of firm specific variables are insignificant to predict short term debt in Poland.

Table 4.72: Regression Results for Polish Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.030	(.145)	.032	(.112)
TANG	.012	(.025)	.005	(.016)
UNIQ	.024	(.045)	.023	(.030)
SIZE	.003	(.006)	-.001	(.002)
EVOL	.094	(.080)	.092	(.074)
GROW	-.045	(.032)	-.053*	(.031)
PROF	-.031	(.030)	-.034	(.026)
LIQD	-.027***	(.004)	-.026***	(.004)
DIVP	-.010	(.007)	-.012*	(.006)
Observations	1,990		1,990	
Number of id	217		217	
R-squared (Within)	.096		.094	
Between	.052		.085	
Overall	.064		.082	
F_Stat/Wald_Chi^2	9.3 (.000)		198.5 (.000)	
rho	.458		.394	
Hausman_Chi^2	11.9 (.290)			
Breusch Pagan LM	1279.6 (.000)			
Alphafehat (Mean)	2.12^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.19 Thai Results

4.19.1 Descriptive Summary and Correlation Matrix for Thai Firms

The descriptive statistics for 317 Thai Firms with a total of 2710 observations over 2006-16 have been presented in table 4.73.

Median and Mean values of long term debt ratios across Thai firms and data period are 0.098 and 0.146 respectively. This means that on average Thai firms finance 14.6% of their total assets with long term debt. As revealed by median we say that majority of Thai firms use 9.8% long term debt in relation to book values of their total assets. Thai sample of firms has an overall standard deviation of 0.157 with an overall minimum and maximum of 0.000 and 0.952 respectively.

Median and Mean values of short term debt over total assets (SDBTA) are 0.070 and 0.126 respectively. SDBTA across Thailand has an overall standard Deviation of 0.149 with an overall minimum and maximum of 0.000 and 0.891 respectively.

Table 4.73 for Thai firms also reveals that "between" and "within" variations is roughly equal for DIVP. All the rest of variables have more "between" variation than "within" variation.

Table 4.73: Descriptive Statistics for Thai Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.098	.146	.157	.000	.952
	between			.139	.000	.749
	within			.080	-.306	.639
SDBTA	overall	.070	.126	.149	.000	.891
	between			.131	.000	.629
	within			.070	-.260	.655
NDTS	overall	.040	.046	.034	.000	.694
	between			.030	.000	.298
	within			.019	-.230	.442
TANG	overall	.418	.411	.223	.001	.974
	between			.213	.002	.955
	within			.081	-.007	.949

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	overall	.116	.145	.113	.000	.850
	between			.114	.000	.836
	within			.042	-.347	.532
SIZE	overall	8.237	8.486	1.581	4.527	14.619
	between			1.542	4.527	14.122
	within			.387	5.896	11.383
EVOL	overall	.025	.034	.037	.000	.511
	between			.046	.006	.442
	within			.026	-.172	.302
GROW	overall	.040	.058	.057	.000	.511
	between			.035	.001	.201
	within			.045	-.089	.408
PROF	overall	.113	.124	.081	.000	.657
	between			.067	.002	.446
	within			.047	-.150	.477
LIQD	overall	1.311	1.568	.949	.012	4.997
	between			.842	.079	4.905
	within			.553	-.766	5.238
DIVP	overall	.000	.165	.306	.000	1.000
	between			.214	.000	1.000
	within			.218	-.635	1.074

Table presents summary statistics for 317 Thai firms using annual data 2006-2016

Table 4.74 presents the correlation coefficients between the explained and firm specific explanatory variables for Thai firms used in the analysis. The matrix shows that long term debt ratios are positively correlated with tangibility, size, uniqueness, non debt tax shields, growth and dividend payout per share and negatively correlated with other independent variables. Similarly short term leverage ratios are positively correlated only with earnings volatility. Short term debt ratios are negatively correlated with the rest of explanatory variables. We examined correlation coefficients and VIF values and found correlation coefficients far below 0.9 and VIF less than 3, thus based on Asteriou (2007) criteria (r=09 or VIF=10) for serious multicollinearity, correlation coefficients in the matrix pose no issue of multicollinearity.

TABLE 4.74: Correlation Matrix for Thai Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.229*	1.000									
NDTS	.110*	-.191*	1.000								
TANG	.347*	-.186*	.222*	1.000							
UNIQ	.109*	-.193*	.107*	-.009	1.000						
SIZE	.389*	-.147*	-.038*	.120*	.185*	1.000					
EVOL	-.089*	.051*	.074*	-.082*	.001	-.165*	1.000				
GROW	.098*	-.115*	.187*	.376*	.017	.079*	-.006	1.000			
PROF	-.102*	-.244*	.410*	.008	-.052*	.000	.110*	.204*	1.000		
LIQD	-.265*	-.365*	-.118*	-.256*	-.021	-.142*	.052*	-.132*	.126*	1.000	
DIVP	.005	-.027*	.006	.039*	.005	.082*	-.058*	.066*	.115*	.016	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 317 Thai firms using annual data from 2006 to 2016.

4.19.2 Thai Regression Results

Table 4.75 presents the regression results for determinants of long term leverage ratios in Thai firms. According to fixed effects model asset structure is positively and significantly affecting long term leverage in Thailand. Positive robust coefficient of TANG suggests that Thai firms having more tangible assets borrow more long term debt than firms having fewer tangible assets. These findings are in line with previous studies (Bevan & Danbolt, 2004) and trade off theory (H2).

Positive regression coefficient of uniqueness suggests that unique non financial firms in the Thailand borrow more long term debt. This particular relationship is slightly significant at 90% confidence. These results are contradictory to Titman and Wessels (1988) suggesting low long term debt for unique firms. Hence our H3 regarding negative leverage-uniqueness relationship under trade off framework could not be substantiated in case of Thailand.

Size of firms is another significant predictor of long term leverage in Thailand. Positive regression coefficient of firm size indicates that large non financial Thai firms make more use of long term leverage than their smaller counterparts. This relationship is highly significant with a confidence level of 99%. Positive size coefficient is in accordance with trade-off theory (H4) and in line with prior studies (Friend & Lang, 1988; Frank & Goyal, 2009; Fama & French, 2002; Wald, 1999).

Thai regression results also suggest that profitable firms in Thailand use significantly lower level of long term leverage as indicated by negative and highly significant (99%) coefficient of PROF. Negative and significant relationship between profitability and long term debt in the Thailand is opposite to the predictions of trade off and some prior literature (i.e. Frank & Goyal. 2009; Long & Malitz, 1988). Thus we reject our H7. Based on our results we argue that Thai non financial firms care more about cost of financial distress than high tax advantages when profitability is high. Pecking order hypothesis and prior literature (Booth et al., 2001; Shyam-Sunder & Myers, 1999; Supanvanij, 2006) justify our findings. All the remaining variables are insignificant to predict long term borrowings in Thailand.

TABLE 4.75: Regression Results for Thai Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.063	(.157)	.063	(.152)
TANG	.136***	(.043)	.144***	(.037)
UNIQ	.146*	(.078)	.186***	(.057)
SIZE	.074***	(.014)	.052***	(.007)
EVOL	.054	(.085)	.060	(.076)
GROW	-.022	(.043)	-.015	(.042)
PROF	-.225***	(.060)	-.223***	(.052)
LIQD	-.004	(.005)	-.007	(.005)
DIVP	.010	(.011)	.007	(.011)
Observations	2,710		2,710	
Number of id	317		317	
R-squared (Within)	.172		.164	
Between	.230		.270	
Overall	.244		.280	
F_Stat/Wald_Chi^2	25 (.000)		580.4 (.000)	
rho	.748		.653	
Hausman_Chi^2	28 (.000)			
Breusch Pagan LM	3875 (.000)			
Alphafehat (Mean)	9.55^{-11}			

Robust standard errors in parentheses
*** $p < .01$, ** $p < .05$, * $p < .1$

To test the impact of firms' specific attributes on short term debt (SDBTA) in Thailand, Hausman test suggests fixed effects model for reliable predictions as illustrated Table 4.76. As reported in the aforementioned table regression results suggest a number of firm specific factors significantly predict short term debt ratios in Thailand.

Negative and moderately significant slope of TANG suggest that Thai firms with more tangible assets use low short term debt ratios. This particular pattern does not support trade off (H2). However pecking order and some previous reported literature (Wijst & Thurik, 1993) justify our findings. According to trade off unique firms are expected to avoid using higher debt ratios. This is because assets of such firms are not easily redeployable and cost of financial distress is higher also for such firms (Titman & Wessels, 1988). We see that such unique firms in Thailand borrow passively in short run, which supports H3 in Thai context.

Business risk is another slightly significant determinant of short term borrowings in Thailand. Diamond (1991) suggests that firms with higher volatile earnings may use higher short term debt ratios, because short term borrowings for such firms may be more feasible than long term debt. In line with Diamond (1991) Thai firms use significantly higher short term debt during volatile earnings. This aggressive borrowing behavior is contradictory with what trade off (H5) predicts. Firms with more growth opportunities are likely to use less short term leverage (Scherr & Hulburt, 2001). This is because trade off suggests such firms as new firms having more chances of financial distress. Therefore growing firms are expected to be less levered. As negative and highly significant growth coefficient confirms trade off. Thus we accept H6.

Thai results show that highly profitable firms are less levered even in short run. Under framework of trade off, as profitable firms have low chances of going into financial distress, therefore expected to exploit benefits of leverage. But Thai results contradict these lines (H7). Wijst and Thurik (1993) also contradict trade off by reporting negative impact of profitability on short term leverage in the Netherlands.

Finally, trade off expect liquid firms to be more levered than their illiquid counterparts. However Thai regression output suggests that liquid firms are significantly less levered in short run. Negative and highly robust (99%) slope of liquidity is contradictory to trade off (H8) and Wijst and Thurik (1993) findings. However, pecking order and previous studies (Garcia-Teruel & Martinez-Solano, 2004; Scherr & Hulburt, 2001) support our findings.

Non debt tax shields, size and dividend payout per share although show positive coefficients but are insignificant to predict short term borrowing behavior in Thailand.

TABLE 4.76: Regression Results for Thai Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.013	(.138)	-.066	(.107)
TANG	-.070**	(.034)	-.096***	(.027)
UNIQ	-.125***	(.042)	-.170***	(.033)
SIZE	.006	(.006)	.006*	(.004)
EVOL	.148*	(.085)	.126	(.078)
GROW	-.104***	(.033)	-.091***	(.031)
PROF	-.257***	(.048)	-.276***	(.042)
LIQD	-.052***	(.005)	-.055***	(.004)
DIVP	.007	(.008)	.007	(.007)
Observations	2,710		2,710	
Number of id	317		317	
R-squared (Within)	.230		.225	
Between	.227		.331	
Overall	.233		.324	
F_Stat/Wald_Chi^2	35.4 (.000)		834 (.000)	
rho	.755		.694	
Hausman_Chi^2	79 (.000)			
Breusch Pagan LM	5070 (.000)			
Alphafehat (Mean)	-6.39^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.20 Mexican Results

4.20.1 Descriptive Summary and Correlation Matrix for Mexican Firms

Our sample for this study comprises a total of 60 non financial Mexican firms with a total of 599 firm-year observations over 2006-16. The descriptive summary for Mexican firms is reported in table 4.77. Central tendency measured with Mean reveals that Mexican firms on average use 28.3% debt to total assets ratios over

2006-2016. But overall minimum (0.000) and maximum (0.894) reveals that some firms at least at some point of time during our time period show leverage ratios as low as 0% and as high as 89.4%. Therefore it's recommended to rely on median values. Median leverage ratios reveal that majority of Mexican firms finance 26.3% their total assets with long term debt. LDBTA across Mexican firms has an overall standard deviation of 0.161. Similarly Median and Mean values of short term debt over total assets (SDBTA) are 0.004 and 0.025 respectively. SDBTA across Mexican firms has an overall standard Deviation of 0.047 with an overall minimum and maximum of 0.000 and 0.391 respectively.

Table 4.77 shows that "between" and "within" variations are roughly equal for SDBTA and EVOL. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.77: Descriptive Statistics for Mexican Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.263	.283	.161	.000	.894
	between			.135	.045	.760
	within			.089	-.212	.593
SDBTA	overall	.004	.025	.047	.000	.391
	between			.032	.000	.190
	within			.038	-.165	.299
NDTS	overall	.035	.042	.027	.000	.164
	between			.025	.000	.134
	within			.011	-.014	.118
TANG	overall	.437	.423	.192	.004	.845
	between			.189	.030	.734
	within			.074	.184	.951
UNIQ	overall	.174	.204	.132	.000	.697
	between			.124	.001	.670
	within			.057	-.106	.509
SIZE	overall	9.892	9.859	1.641	6.240	14.661
	between			1.640	6.437	14.398
	within			.488	7.765	11.906

Variable		Median	Mean	Std. Dev.	Min	Max
EVOL	overall	.015	.020	.021	.000	.228
	between			.014	.005	.083
	within			.016	-.054	.165
GROW	overall	.045	.059	.057	.000	.416
	between			.045	.007	.300
	within			.034	-.241	.340
PROF	overall	.19	.121	.067	.000	.502
	between			.056	.018	.277
	within			.038	-.023	.468
LIQD	overall	1.531	1.725	.873	.278	4.981
	between			.784	.708	4.735
	within			.518	-.435	3.973
DIVP	overall	.000	.195	.366	.000	1.000
	between			.292	.000	1.000
	within			.226	-.714	1.095

Table presents summary statistics for 60 Mexican firms using annual data 2006-2016

Table 4.78 presents the correlation coefficients between the explained and firm specific explanatory variables for Mexican firms used in the analysis. The matrix shows long term debt ratios are positively correlated with non debt tax shields, assets tangibility, firm size, growth opportunity and dividend payout/share and have negative correlation coefficient with rest of explanatory variables.

Similarly short term leverage ratios are positively associated with variations in earnings, growth and dividend payout per share and negatively correlated with the rest of explanatory variables. According to Asteriou (2007) serious multicollinearity issues arise when correlation coefficient ‘r’ value exceeds 0.9 or VIF value approaches to 10. Thus based on threshold ‘r’ and VIF, we argue that VIF values and all correlation coefficients are far below the threshold posing no serious multicollinearity issues in the data.

Table 4.78: Correlation Matrix for Mexican Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.111*	1.000									
NDTS	.191*	-.126*	1.000								
TANG	.087*	-.215*	.491*	1.000							
UNIQ	-.254*	-.062	.191*	-.045	1.000						
SIZE	.096*	-.064	.027	-.152*	.059	1.000					
EVOL	-.105*	.065	.001	.028	-.124*	-.041	1.000				
GROW	.167*	.041	.335*	.162*	.070	-.050	.065	1.000			
PROF	-.018	-.131*	.387*	.109*	-.049	.215*	.224*	.226*	1.000		
LIQD	-.184*	-.217*	-.164*	-.013	-.230*	-.141*	.210*	-.005	.162*	1.000	
DIVP	.038	.047	.054	-.028	-.095*	.194*	.054	.170*	.158*	-.050	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 60 Mexican firms using annual data from 2006 to 2016.

4.20.2 Mexican Regression Results

Mexican regression results about determinants of long term debt are presented in table 4.79. Fixed effect model shows that only two variables in Mexican firms significantly predict long term leverage. Size of firms is significant (99%) determinant of leverage in Mexico. Regression output shows that larger Mexican firms borrow more long term leverage than their smaller counterparts. This relationship is highly significant with a confidence level of 99%. As size is considered as inverse proxy of bankruptcy costs hence larger in size firms can afford higher financial leverage without any significant increase in bankruptcy costs. Thus we say that our results are in accordance with trade-off theory (H4) and prior studies (Friend & Lang, 1988; Frank & Goyal, 2009; Wald, 1999).

Our results suggest that Mexican firms with higher growth opportunities make less use of long term debt as indicated by negative and highly significant (99%) coefficient. Negative GROW-LDBTA relationship is consistent with trade-off (H6). Similar results have been reported in previous studies (e.g. Booth et al., 2001; Shyam-Sunder & Myers, 1999; Rajan & Zingales, 1995). Our results are contrary to pecking order and prior literature (i.e. Filsaraei et al., 2016; Kester, 1986; Michaelas et al., 1999; Wald, 1999). The remaining regressors are insignificant.

Table 4.80 presents the regression results for non financial firms in Mexico. As per Hausman test specification error component model is preferred over LSDV model to test the impact of firms' related factors on short term debt (SDBTA). Random effects predict that firm's assets structure (TANG) has negative influence on short term borrowing in Mexico. This means that firms having more tangible assets use less short term borrowings. This relationship is moderately significant at 95%. These results are opposite to trade off predictions (H2).

Uniqueness (UNIQ) is another slightly significant (90%) determinant of short term debt borrowings. Regression output suggests that firms dealing in unique production avoid using higher short term debt ratios. Trade off (H3) also expects such firms to be less levered. These results support previous findings (i.e. Titman & Wessels, 1988).

Table 4.79: Regression Results for Mexican Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.492	(.482)	.733*	(.402)
TANG	.061	(.126)	.062	(.115)
UNIQ	-.084	(.070)	-.183**	(.083)
SIZE	.050***	(.018)	.029***	(.008)
EVOL	-.207	(.293)	-.163	(.288)
GROW	-.426***	(.135)	-.294	(.183)
PROF	-.153	(.173)	-.207	(.160)
LIQD	-.009	(.013)	-.013	(.012)
DIVP	-.003	(.017)	-.007	(.016)
Observations	599		599	
Number of id	60		60	
R-squared (Within)	.166		.153	
Between	.019		.084	
Overall	.022		.076	
F_Stat/Wald_Chi^2	5.2 (.000)		96 (.000)	
rho	.743		.614	
Hausman_Chi^2	42.5 (.000)			
Breusch Pagan LM	776 (.000)			
Alphafehat (Mean)	3.17^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Like most of the countries, Mexican highly liquid firms in non financial sector are less levered. Wijst and Thurik, (1993) results suggest that highly liquid firms may afford higher level of short term borrowings (in line with trade off). However, negative and highly robust slope of LIQD in Mexico does not support trade off (H8). Many prior studies (Garcia-Teruel & Martinez-Solano, 2004; Ozkan, 2000; Scherr and Hullburt, 2001) complement our empirical findings.

The rest of regressors have insignificant coefficients indicating their minimal and no potency to predict SDBTA in Mexican non financial sector.

Table 4.80: Regression Results for Mexican Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	-.367	(.294)	-.154	(.186)
TANG	-.024	(.044)	-.051**	(.023)
UNIQ	-.007	(.023)	-.037*	(.019)
SIZE	.002	(.005)	-.003	(.002)
EVOL	.100	(.145)	.185	(.141)
GROW	.004	(.051)	.054	(.036)
PROF	-.004	(.052)	-.048	(.052)
LIQD	-.016***	(.004)	-.016***	(.003)
DIVP	-.000	(.005)	.001	(.005)
Observations	599		599	
Number of id	60		60	
R-squared (Within)	.092		.081	
Between	.140		.357	
Overall	.103		.163	
F_Stat/Wald_Chi^2	2.6 (.000)		78 (.000)	
rho	.369		.195	
Hausman_Chi^2	14.5 (.15)			
Breusch Pagan LM	56.5 (.000)			
Alphafehat (Mean)	1.33^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.21 Pakistani Results

4.21.1 Descriptive Summary and Correlation Matrix for Pakistani Firms

Our total sample for Pakistani firms is comprised of 180 non financial firms with a total of 1511 observations over 2006-16. The descriptive summary for Pakistani firms has been presented in table 4.81. Median and Mean values of long term debt over total assets across firms and data period are 0.137 and 0.167 respectively. LDBTA across Pakistani sample firms has an overall standard deviation of 0.155 with an overall minimum and maximum of 0.000 and 0.797 respectively. Median and Mean values of short term debt over total assets are 0.134 and 0.154 respectively. SDBTA across Pakistani firms has an overall standard Deviation of 0.134 with an overall minimum and maximum of 0.000 and 0.739 respectively.

Table 4.81 reveals that "between" and "within" variations are roughly equal for NDTS and EVOL. GROW have higher "within" variation than "between" variation. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.81: Descriptive Statistics for Pakistani Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.137	.167	.155	.000	.797
	between			.146	.000	.787
	within			.087	-.170	.566
SDBTA	overall	.134	.154	.134	.000	.739
	between			.113	.000	.448
	within			.075	-.130	.606
NDTS	overall	.033	.035	.019	.000	.285
	between			.014	.004	.090
	within			.013	-.029	.256
TANG	overall	.480	.483	.198	.000	.938
	between			.190	.002	.913
	within			.085	.155	.938
UNIQ	overall	.051	.075	.066	.000	.368
	between			.062	.002	.317
	within			.021	-.045	.332
SIZE	overall	8.589	8.761	1.421	4.870	12.815
	between			1.403	5.475	12.575

Variable		Median	Mean	Std. Dev.	Min	Max
	within			.422	6.906	10.632
EVOL	overall	.030	.039	.033	.000	.275
	between			.024	.001	.184
	within			.026	-.038	.226
GROW	overall	.042	.064	.069	.000	.541
	between			.037	.001	.181
	within			.060	-.110	.466
PROF	overall	.134	.148	.096	.000	1.008
	between			.073	.008	.400
	within			.062	-.113	.756
LIQD	overall	1.130	1.375	.811	.125	4.925
	between			.683	.282	4.704
	within			.483	-.699	4.017
DIVP	overall	.054	.232	.309	.000	1.000
	between			.248	.000	1.000
	within			.199	-.568	1.141

Table presents summary statistics for 180 Pakistani firms using annual data 2006-2016

Table 4.82 presents the correlation coefficients between the explained and firm specific explanatory variables for Pakistani firms used in the analysis. Long term debt ratios across Pakistani firms are positively correlated with non debt tax shields, asset tangibility, size and growth and negative correlated with rest of explanatory variables. Similarly short term debt ratios are negative correlated with all the explanatory variables. As all of our correlation coefficients are far below than threshold (0.9), hence based on Asteriou (2007), we declare that our data does not suffer from problematic multicollinearity issues.

TABLE 4.82: Correlation Matrix for Pakistani Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.009	1.000									
NDTS	.117*	-.083*	1.000								
TANG	.484*	-.115*	.211*	1.000							
UNIQ	-.209*	-.090*	.089*	-.167*	1.000						
SIZE	.080*	-.193*	-.071*	.043	-.063*	1.000					
EVOL	-.064*	-.077*	.069*	-.041	-.010	-.148*	1.000				
GROW	.116*	-.082*	.061*	.201*	.045	.046	-.006	1.000			
PROF	-.264*	-.177*	.258*	-.172*	.046	-.051*	.301*	.058*	1.000		
LIQD	-.381*	-.391*	-.088*	-.345*	.127*	-.035	.080*	.022	.363*	1.000	
DIVP	-.185*	-.102*	.113*	-.165*	.018	-.014	.033	.072*	.243*	.130*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*
Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 180 Pakistani firms using annual data from 2006 to 2016.

4.21.2 Pakistani Regression Results

To examine the determinants of long term debt to BV of total assets in Pakistani context both fixed and random effects are reported in Table 4.83. Hausman test recommends fixed effect model as appropriate for predictions. A number of firm specific attributes significantly predict debt level. Negative regression slope for firms' uniqueness in case of Pakistan is significant with 5% probability of error margin. This implies that unique Pakistani firms are least levered. As per co-investment theory assets (both human and physical) of unique firms are highly specialized and not easily redeployable, therefore bankruptcy costs for such firms are high (Frank & Goyal, 2009). Thus it is further risky for such firms to use more leverage (Titman & Wessels, 1988). In accordance with these lines negative significant slope of uniqueness indicates that unique Pakistani non financial firms avoid external sources for debt financing. As these predictions are in line with trade off, hence we accept our H3.

Bankruptcy costs are lower for larger firms therefore such firms are better positioned to take benefit of financial leverage. In a similar fashion slope of SIZE is highly significant (99%) and positive. This means that larger Pakistani firms borrow more long term leverage, which is consistent with trade-off theory (H4). Similar findings regarding size-leverage relationship are reported by a number of previous studies (e.g. Akhtar & Oliver, 2009; Alves & Ferreira, 2011; Cwynar, Cwynar & Dankiewicz, 2015; Frank & Goyal, 2009; Hovakimian & Li, 2011; Jong et al., 2008; Karacaer et al., 2016) in different countries.

Regression results reveal that highly profitable firms in Pakistan use less leverage. The possible reason may be profitable Pakistani firms rely more on internal least risky sources than external more risky options. Thus negative highly robust profitability coefficient in Pakistan is justified under pecking order and prior studies (e.g. Akhtar & Oliver, 2009; Frank & Goyal, 2009; Jong et al., 2008; Karacaer et al., 2016; Kester, 1986; Lemmon et al., 2008; Ozkan, 2001). On the other hand trade off expects profitable firms to use more financial leverage to protect income from taxes. However our findings do not support the predictions of trade off (H7).

Liquidity is another firm's specific predictor of long term financial leverage in Pakistan. The slope coefficient for firm liquidity (LIQD) reveals that highly liquid firms in Pakistan are least levered. This relationship has 99% level of significance. Positive leverage-liquidity relationship is in line with trade off (H8) and previously reported results by Feidakis and Rovolis (2007). Dividend paying firms are considered more profitable and mature (Gaver & Gaver, 1993) therefore such firms are expected to have higher leverage due to low risk of financial bankruptcy. However, we find that dividend paying Pakistani firms use lower long leverage than their non-paying counterparts. Frank and Goyal (2009); Yang et al. (2015) support our findings. Negative robust DIVP coefficient is contrary to trade off (H9) and Chen et al. (2009). Other firm specific factors have mixed signs and are insignificant.

Table 4.83: Regression Results for Pakistani Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.286	(.160)	.218	(.201)
TANG	.062	(.065)	.074	(.056)
UNIQ	-.375**	(.182)	-.429***	(.136)
SIZE	.056***	(.018)	.014	(.009)
EVOL	-.045	(.143)	-.060	(.137)
GROW	.042	(.053)	.065	(.052)
PROF	-.222***	(.029)	-.457***	(.060)
LIQD	-.076***	(.011)	-.079***	(.010)
DIVP	-.037**	(.014)	-.043***	(.014)
Observations	1,511		1,511	
Number of id	180		180	
R-squared (Within)	.412		.403	
Between	.158		.321	
Overall	.214		.340	
F_Stat/Wald_Chi^2	37 (.000)		963 (.000)	
rho	.803		.712	
Hausman_Chi^2	27 (.000)			
Breusch Pagan LM	1649 (.000)			
Alphafehat (Mean)	-2.79^{-10}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

Table 4.84 contains regression results for Pakistani firms to test the impact of firms' specific attributes on short term debt ratios. Regression output from fixed effect model reveals that asset structure, profitability, size and liquidity are four important firm's specific attributes affecting short term debt ratios in Pakistan. Tangible assets are considered as good collateral of debt, therefore under trade off firms with more tangible assets are expected to be more levered. But our results show that firms with more tangible assets make less use of short term debt, as indicated by negative coefficient of TANG. This relationship is highly significant at 99%. This implies that trade off (H2) does not hold in case of asset tangibility and short term debt ratios in Pakistan. However, pecking order justifies our results.

Large firms are expected to deal easily with bankruptcy costs (Titman & Wessels, 1988) than smaller firms hence expected to use higher financial leverage. Pakistani results also suggest that large non financial Pakistani firms make more use of short term leverage than their relative smaller counterparts. This relationship is slightly significant with confidence level of 90%. Positive SIZE-LDBTA relationship is in accordance with trade-off theory (H4). Similar results are reported in previous literature (Berger & Udell, 1998; Scherr & Hulburt, 2001).

Trade off theory of capital structure suggests that highly profitable firms have low chances of default on debt obligations. Hence such firms are more expected to utilize leverage effect for tax advantages. But negative and highly significant (99%) slope of PROF reveals that highly profitable firms in Pakistan are less reliant on short term debt than their non profitable counterparts. Again this observed pattern negate the theoretical predictions of trade off (H7). Both pecking order theory and Wijst and Thurik (1993) findings also support our results.

Empirical studies (Garcia-Teruel & Martinez-Solano, 2004; Scherr & Hulburt, 2001) suggest that liquid firms are less reliant on short term borrowings. In line with these findings we found slope of LIQD as negative and highly significant in Pakistan. This suggests that highly liquid firms borrow significantly lower than their illiquid counterparts. As these findings are contrary to trade off, therefore we reject H8.

Rest of firms attributes appears to have no significant potency to determine short term leverage.

TABLE 4.84: Regression Results for Pakistani Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.336	(.331)	.204	(.303)
TANG	-.288***	(.048)	-.258***	(.042)
UNIQ	-.140	(.143)	-.174	(.107)
SIZE	.022*	(.011)	.005	(.005)
EVOL	-.130	(.116)	-.170	(.110)
GROW	-.040	(.037)	-.027	(.036)
PROF	-.219***	(.042)	-.200***	(.039)
LIQD	-.076***	(.008)	-.075***	(.007)
DIVP	-.012	(.010)	-.016	(.011)
Observations	1,511		1,511	
Number of id	180		180	
R-squared (Within)	.335		.326	
Between	.076		.186	
Overall	.137		.249	
F_Stat/Wald_Chi^2	26.3 (.000)		663 (.000)	
rho	.761		.660	
Hausman_Chi^2	30.4 (.000)			
Breusch Pagan LM	2288.7 (.000)			
Alphafehat (Mean)	-3.67^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.22 Argentinean Results

4.22.1 Descriptive Summary and Correlation Matrix for Argentinean Firms

The descriptive statistics for 51 Argentinean firms with a total of 515 observations over 2006-16 have been presented in table 4.85. Mean values reveals that

Argentinean firms on average finance 19.5% of their total assets with long term debt. Median implies that majority of firms employ 16% of long term leverage in relation of their total assets. LDBTA across Argentinean sample firms show an overall variation of 0.175 with an overall minimum and maximum of 0.000 and 0.890 respectively. Median and Mean values of short term debt over total assets for Argentinean firms are 0.001 and 0.023 respectively. SDBTA across Argentina has an overall standard Deviation of 0.040 with an overall minimum and maximum of 0.000 and 0.198 respectively. DIVP and SDBTA have higher "within" variation than "between" variation. All the rest of variables have more "between" variation than "within" variation.

Table 4.85: Descriptive Statistics for Argentinean Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.160	.195	.175	.000	.890
	between			.145	.012	.545
	within			.099	-.350	.606
SDBTA	overall	.001	.023	.040	.000	.198
	between			.022	.000	.106
	within			.034	-.049	.186
NDTS	overall	.036	.044	.033	.000	.204
	between			.029	.004	.128
	within			.013	-.018	.121
TANG	overall	.407	.397	.249	.004	.885
	between			.240	.013	.796
	within			.080	.007	.667
UNIQ	overall	.138	.152	.081	.010	.406
	between			.073	.039	.374
	within			.034	.052	.356
SIZE	overall	7.180	7.117	1.839	3.012	12.951
	between			1.763	4.032	11.362
	within			.596	5.048	10.298
EVOL	overall	.029	.037	.028	.001	.157

Variable		Median	Mean	Std. Dev.	Min	Max
	between			.016	.017	.084
	within			.024	-.029	.132
GROW	overall	.050	.066	.057	.000	.305
	between			.044	.008	.183
	within			.037	-.058	.238
PROF	overall	.146	.156	.087	.000	.494
	between			.065	.041	.334
	within			.057	-.035	.429
LIQD	overall	1.298	1.445	.721	.092	4.667
	between			.596	.405	2.803
	within			.405	.315	3.378
DIVP	overall	.000	.059	.140	.000	.794
	between			.076	.000	.323
	within			.117	-.264	.694

Table presents summary statistics for 51 Argentinean firms using annual data 2006-2016

Table 4.86 presents the correlation coefficients between the explained and firm specific explanatory variables for Argentinean firms used in the analysis. The matrix shows that ratios of long term debt to BV of total assets across Argentina are positively correlated with NDTS, TANG, SIZE and GROW and have negative correlation coefficients with the rest of independent variables. Similarly short term leverage ratios in Argentina are positively correlated only with UNIQ, SIZE, GROW and DIVP and have negative correlation with the rest of explanatory variables. Serious multicollinearity issues arise when correlation coefficient ‘r’ value exceeds 0.9 or VIF value approaches to 10 (Asteriou, 2007). Thus we argue that based on correlation coefficients and VIP factor there are no significant multicollinearity issues among the explanatory variables.

Table 4.86: Correlation Matrix for Argentinean Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.068	1.000									
NDTS	.122*	-.042	1.000								
TANG	.221*	-.028	.308*	1.000							
UNIQ	-.075	.007	-.116*	-.003	1.000						
SIZE	.310*	.000	.380*	.436*	-.177*	1.000					
EVOL	-.142*	-.016	-.095*	-.203*	-.041	-.140*	1.000				
GROW	.018	.021	.391*	.452*	.026	.391*	-.014	1.000			
PROF	-.250*	-.078	.408*	-.128*	.059	.090*	.102*	.258*	1.000		
LIQD	-.367*	-.141*	-.335*	-.381*	.123*	-.439*	.028	-.238*	.078	1.000	
DIVP	-.206*	.056	-.081	-.056	.053	-.048	-.048	.016	.115*	.162*	1.000

*** $p < .01$, ** $p < .05$, * $p < .1$

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 51 Argentinean firms using annual data from 2006 to 2016.

4.22.2 Argentinean Regression Results

Table 4.87 presents the regression results both for LSDV and error component model to explore the likely impact of firms' specific attributes on long term debt ratios (LDBTA) in Argentina. Results show that leverage in Argentinean firms depends on a number of firm specific factors. Contrary to tax substitution effect, non debt tax shield (NDTS) is significantly and positively related to firm's leverage ratios. This means that Argentinean non financial firms use more long term debt when depreciation and amortization expenses are high. This relationship is significant at 95% confidence level. These results are also contrary to trade off (H1) and previous findings (e.g. DeAngelo & Masulis, 1980). However similar results have been reported in Bradley et al. (1984).

Tangibility is another highly significant determinant of long term financial leverage in Argentina. Negative coefficient of TANG means that firms with greater tangible assets are less levered than firms with low asset tangibility. This relationship is robust at 99% confidence level. These findings do not justify the theoretical predictions of trade off (H2) and previous studies (Bevan & Danbolt, 2004; Booth et al., 2001; Frank & Goyal, 2009).

Positive UNIQ-LDBTA relationship as indicated by regression coefficient suggests that unique Argentinean non financial firms employ more debt. This particular pattern is moderately significant at 95% confidence. Our findings are in contradiction with Titman and Wessels (1988) and trade off predictions (H3).

Size is considered as inverse proxy of bankruptcy costs (De Jong., 2008). Therefore under trade off larger firms can benefit tax advantage of leverage. Like most of other countries firm size is positive significant determinant of long term leverage in Argentina as well. This suggests that large Argentinean firms use more long term leverage than their smaller counterparts. Positive SIZE-LDBTA relationship is in accordance with trade-off theory (H4).

Our results show that firms having higher growth opportunities (GROW) make more use of long term debt. Positive GROW-LDBTA coefficient is not consistent with trade-off (H6).

Profitability has inverse relationship with long term borrowings in Argentina. Negative and highly significant (99%) coefficient of PROF implies that Argentinean firms prefer to avoid risky options and cost of information asymmetry when internal sources are available. Our results regarding negative leverage-profitability relationship are consistent with pecking order hypothesis and prior literature (Booth et al., 2001; Titman & Wessels, 1988; Wald, 1999). Thus we reject our H7 regarding positive PROF-LDBTA relationship under trade off.

Liquidity (LIQD) shows negative and highly significant (99%) coefficient indicating that highly liquid Argentinean firms are less levered than their illiquid counterparts. These results imply that managers rely more on internal financing abilities to avoid cost of issuing new debt. These results confirm the predictions of pecking order hypothesis. Hence our theoretical proposition (H8) does not validate in Argentinean context.

Finally we suggest based on our results that Argentinean firms having higher dividend payout per share are less reliant on external debt. This observed pattern is robust at 95% confidence. These results are in agreement with previous literature (i.e. Chen et al., 2009; Frank & Goyal, 2009; Yang et al., 2015) but inconsistent with the trade off predictions (H9).

We found no significant evidence regarding impact of business risk on long term leverage in the Argentina.

To investigate firm's related determinants of short term leverage in Argentinean firms, we estimated both fixed and random effects as reported in Table 4.88. As per random effect recommended by Hausman test, only liquidity of Argentinean firms significantly predicts short term borrowings. Negative and highly robust slope of LIQD suggests that highly liquid firms in Argentina are less levered, which is inconsistent with H8. Pecking order and previous findings by Ozkan (2000) and Scherr and Hullburt (2001) support our results.

All the remaining regressors' coefficients are insignificant to predict SDBTA in Argentinean firms.

Table 4.87: Regression Results for Argentinean Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.327**	(.575)	.693*	(.417)
TANG	-.272***	(.098)	-.177**	(.083)
UNIQ	.295**	(.130)	.224**	(.107)
SIZE	.086**	(.032)	.046***	(.015)
EVOL	-.363	(.280)	-.352	(.300)
GROW	.303*	(.154)	.193	(.141)
PROF	-.407***	(.123)	-.431***	(.129)
LIQD	-.059***	(.021)	-.057***	(.020)
DIVP	-.072**	(.033)	-.073**	(.032)
Observations	515		515	
Number of id	51		51	
R-squared (Within)	.241		.225	
Between	.161		.221	
Overall	.146		.205	
F_Stat/Wald_Chi^2	7 (.000)		139 (.000)	
rho	.768		.629	
Hausman_Chi^2	14.2 (.000)			
Breusch Pagan LM	773.3 (.000)			
Alphafehat (Mean)	-1.98^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Table 4.88: Regression Results for Argentinean Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	-.193	(.204)	-.106	(.138)
TANG	.035	(.026)	-.013	(.016)
UNIQ	-.024	(.038)	.002	(.036)
SIZE	-.003	(.009)	-.001	(.002)
EVOL	.029	(.092)	-.014	(.081)
GROW	-.013	(.079)	.020	(.072)
PROF	-.047	(.037)	-.036	(.028)
LIQD	-.021***	(.006)	-.018***	(.005)
DIVP	.0086	(.015)	.015	(.013)
Observations	515		515	
Number of id	51		51	
R-squared (Within)	.101		.090	
Between	.002		.010	
Overall	.022		.050	
F_Stat/Wald_Chi^2	2.5 (.000)		39 (.000)	
rho	.404		.255	
Hausman_Chi^2	13.2 (.21)			
Breusch Pagan LM	83.3 (.000)			
Alphafehat (Mean)	-3.68^{-11}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.23 Bulgarian Results

4.23.1 Descriptive Summary and Correlation Matrix for Bulgarian Firms

The descriptive statistics for 90 Bulgarian firms with a total of 560 observations for 2006-16 are reported in table 4.89. On average Bulgarian non financial firms finance 11.9% of their total assets with long term debt ratios. However median values show that majority firms in Bulgaria use up to 4% long term debt in relation to book values of their assets. LDBTA across Bulgarian sample firms has an overall standard deviation of 0.183 with an overall minimum and maximum of 0.000 and 0.960 respectively.

In the same way Median and Mean values of short term debt over total assets (SDBTA) are 0.055 and 0.118 respectively. SDBTA across Bulgarian firms has an overall standard Deviation of 0.138 with an overall minimum and maximum of 0.000 and 0.935 respectively.

Table 4.89 shows PROF, UNIQ, EVOL, GROW and DIVP have higher "within" variation than "between" variation. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.89: Descriptive Statistics for Bulgarian Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.040	.119	.183	.000	.960
	between			.153	.000	.675
	within			.098	-.299	.662
SDBTA	overall	.055	.118	.138	.000	.935
	between			.107	.000	.525
	within			.084	-.193	.948
NDTS	overall	.035	.042	.032	.000	.215
	between			.027	.002	.132
	within			.017	-.041	.149
TANG	overall	.695	.652	.219	.001	.990
	between			.216	.027	.965
	within			.090	.191	1.073

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	overall	.047	.103	.124	.000	.900
	between			.076	.000	.341
	within			.099	-.165	.800
SIZE	overall	10.559	10.475	1.607	6.314	14.783
	between			1.602	6.422	14.331
	within			.272	8.386	11.639
EVOL	overall	.025	.049	.094	.000	.982
	between			.068	.007	.372
	within			.074	-.230	.796
GROW	overall	.018	.038	.056	.000	.515
	between			.037	.000	.181
	within			.042	-.101	.433
PROF	overall	.074	.093	.095	.000	1.369
	between			.056	.000	.250
	within			.079	-.157	1.322
LIQD	overall	1.390	1.714	1.114	.040	4.920
	between			1.046	.110	4.910
	within			.581	-.309	4.649
DIVP	overall	1.000	.554	.497	.000	1.000
	between			.344	.000	1.000
	within			.370	-.346	1.411

Table presents summary statistics for 90 Bulgarian firms using annual data 2006-2016

Table 4.90 presents the correlation coefficients between the explained and firm specific explanatory variables for Bulgarian firms used in the analysis. Bulgarian correlation results show a totally different pattern from the rest of the countries in the sample. Long term leverage ratios are positively correlated only with business risk and uniqueness. Short term leverage ratios are positively correlated only with size. Both the debt ratios have negative association with the rest of independent variables. We found VIF values less than 3 and correlation coefficients far below 0.9, thus based on Asteriou (2007) criteria for problematic multicollinearity, we declare that our data does not suffer from multicollinearity issues.

Table 4.90: Correlation Matrix for Bulgarian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.145*	1.000									
NDTS	-.159*	-.038	1.000								
TANG	-.052	-.011	.138*	1.000							
UNIQ	.068	-.091*	.006	-.025	1.000						
SIZE	-.005	.151*	-.093*	-.018	-.159*	1.000					
EVOL	.072	-.109*	-.067	-.111*	-.011	-.150*	1.000				
GROW	-.052	-.017	.301*	.073	-.059	.141*	-.086*	1.000			
PROF	-.161*	-.042	.442*	-.033	-.054	-.020	.317*	.218*	1.000		
LIQD	-.159*	-.337*	.071	-.149*	.071	-.177*	-.127*	.086*	.092*	1.000	
DIVP	-.074	-.013	.098*	-.002	-.318*	.152*	.067	-.004	.132*	.144*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 90 Bulgarian firms using annual data from 2006 to 2016.

4.23.2 Bulgarian Regression Results

Fixed effect regression results in Table 4.91 shows that firm size (SIZE) is positively related long term leverage ratios in Bulgarian firms. This relationship is significant at 90% and consistent with H4. Similar results were reported by Wald (1999).

Leverage during periods of earning volatility increases bankruptcy costs, therefore during high business risk firms are expected to restrict leverage. Our results suggest positive and significant (95%) regression coefficient of business risk (EVOL) indicating aggressive borrowing during periods of high earning volatility. These results contradict trade-off theory (H5) and prior literature (i.e. Karacaer et al, 2016; Lemmon et al., 2008).

Positive significant (99%) slope of growth opportunities (GROW) suggest that firms in Bulgaria borrow more long term debt when growth opportunities are high. Although growing firms are expected to restrict leverage due to higher expected financial distress. But the observed pattern in Bulgaria is not consistent with trade-off (H6). However similar results have been reported in previous studies (i.e. Filsaraei et al., 2016; Kester, 1986; Michaelas et al., 1999; Wald, 1999).

As per our results profitable Bulgarian firms use significantly lower level of long term leverage. This implies that firms prefer to avoid risky options and cost of information asymmetry when least risky options of financing are available internally. Negative and significant (99%) relationship between profitability and long term debt in the Bulgaria is opposite to the predictions of trade off and some prior literature (i.e. Frank & Goyal. 2009; Long & Malitz, 1988). Thus we reject our H7. Apart from size, business risk, growth and profitability, we found no other significant predictor of long term debt ratios in Bulgaria.

Both fixed and random effects were estimated to test the impact of firms' specific attributes on short term debt (SDBTA) in Bulgaria. Hausman test suggests that predictions of fixed effects are reliable than predictions of random effects (Table 4.92). Only 04 firms' specific factors significantly determine short term leverage in Bulgaria. Non tax shields influence short term leverage in an inverse direction. Negative slope of NDTS suggests that firms with higher depreciation

Table 4.91: Regression Results for Bulgarian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	-.375	(.414)	-.387	(.321)
TANG	-.061	(.092)	-.048	(.072)
UNIQ	-.031	(.135)	-.018	(.139)
SIZE	.039*	(.024)	.020**	(.010)
EVOL	.203**	(.102)	.187*	(.105)
GROW	.275***	(.104)	.255***	(.099)
PROF	-.226***	(.080)	-.230***	(.080)
LIQD	.034	(.022)	.023	(.018)
DIVP	-.036	(.022)	-.032	(.021)
Observations	560		560	
Number of id	90		90	
R-squared (Within)	.143		.136	
Between	.022		.020	
Overall	.09		.008	
F_Stat/Wald_Chi^2	4 (.000)		63.2 (.000)	
rho	.731		.669	
Hausman_Chi^2	20.4 (.03)			
Breusch Pagan LM	622.2 (.000)			
Alphafehat (Mean)	-6.30^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

and amortization expense use less short term debt. This confirms the predictions of tax substitution hypothesis and trade off (H1). Similar findings are reported previously (Garcia-Teruel & Martinez-Solano, 2004).

Negative and moderately significant slope of EVOL indicate that firms facing earnings variations (EVOL) make less use of SDBTA. This observed pattern reveals that Bulgarian non financial firms borrow passively when earnings variations are high. Trade off expects similar pattern, because higher earnings volatility means greater chances of financial distress. Thus benefits of leverage can be overweighed by its associated costs. Although these results are contrary to what Diamond (1991) reports, but consistent with trade off. Therefore we accept H5.

Generally profitable firms are expected to benefit more from leverage than suffer. According to trade off, profitable firms have low chances of financial distress hence they can afford higher debt ratios (Frank & Goyal. 2009; Long & Malitz, 1988). Unlike most of other countries profitable Bulgarian firms use higher ratios of short term debt to total assets. This particular pattern is consistent with trade off (H7).

Williamson (1988) suggests that firm having more liquid and redeployable assets may use higher level of financial leverage, because such assets are easily monitored and liquidated. Positive leverage-liquidity relationship is consistent with trade-off because more liquid assets mean low risk of bankruptcy (Harris & Raviv, 1990; Shleifer & Vishny, 1992). However our results show that liquid Bulgarian firms are less levered. This particular observed pattern does not support trade off (H8). Sheikhs (2015) complement these results.

No other firm's specific attribute was found to be significant determinant of short term borrowings.

TABLE 4.92: Regression Results for Bulgarian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	-.402*	(.211)	-.308*	(.183)
TANG	-.015	(.096)	-.013	(.071)
UNIQ	.061	(.076)	.025	(.068)
SIZE	-.012	(.037)	.001	(.010)
EVOL	-.124**	(.059)	-.139**	(.056)
GROW	-.075	(.102)	-.060	(.082)
PROF	.074**	(.033)	.076**	(.036)
LIQD	-.050***	(.008)	-.046***	(.007)
DIVP	.011	(.013)	.010	(.012)
Observations	560		560	
Number of id	90		90	
R-squared (Within)	.184		.180	
Between	.065		.119	
Overall	.109		.152	
F_Stat/Wald_Chi^2	5.1 (.000)		110 (.000)	
rho	.615		.557	
Hausman_Chi^2	19.2 (.038)			
Breusch Pagan LM	501.2 (.000)			
Alphafehat (Mean)	3.71^{-9}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.24 Sri Lankan Results

4.24.1 Descriptive Summary and Correlation Matrix for Sri Lankan Firms

The descriptive statistics for 116 Sri Lankan firms with a total of 1016 observations over 2006-16 have been presented in table 4.93. Median values of long term debt over total assets across Sri Lankan firms and data period are 0.117. While Mean leverage for Sri Lankan firms is 0.147. LDBTA across Sri Lanka has an overall standard deviation of 0.144 with an overall minimum and maximum of 0.000 and 0.988 respectively.

Median and Mean values of short term debt over total assets (SDBTA) are 0.069 and 0.108 respectively. SDBTA across Sri Lankan firms has an overall standard deviation of 0.125 with an overall minimum and maximum of 0.000 and 0.873 respectively.

Table 4.93 reveals that "between" and "within" variations are roughly equal for EVOL. DIVP and GROW have higher "within" variation than "between" variation. All the rest of variables have more "between" variation than "within" variation.

TABLE 4.93: Descriptive Statistics for Sri Lankan Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.117	.147	.144	.000	.988
	between			.139	.000	.863
	within			.080	-.180	.591
SDBTA	overall	.069	.108	.125	.000	.873
	between			.113	.000	.742
	within			.060	-.164	.465
NDTS	overall	.028	.031	.021	.000	.137
	between			.018	.000	.114
	within			.009	-.023	.103
TANG	overall	.507	.505	.229	.000	.986
	between			.223	.018	.949
	within			.083	-.029	.823

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	overall	.148	.202	.165	.000	.901
	between			.155	.000	.698
	within			.058	-.042	.783
SIZE	overall	8.327	8.311	1.695	2.946	12.533
	between			1.652	3.433	11.822
	within			.482	4.919	10.231
EVOL	overall	.024	.033	.033	.001	.333
	between			.023	.008	.159
	within			.026	-.087	.240
GROW	overall	.044	.060	.061	.000	.599
	between			.037	.000	.199
	within			.049	-.138	.461
PROF	overall	.107	.113	.069	.001	.428
	between			.054	.011	.274
	within			.044	-.060	.406
LIQD	overall	1.328	1.483	.795	.066	4.921
	between			.693	.429	4.085
	within			.504	-.859	3.900
DIVP	overall	.080	.199	.266	.000	1.000
	between			.172	.000	.761
	within			.205	-.562	1.108

Table presents summary statistics for 116 Sri Lankan firms using annual data 2006-2016

To assess the pair wise correlation and multicollinearity issue Table 4.94 presents the correlation coefficients between the two explained and nine firm specific explanatory variables for Sri Lankan firms used in the analysis. The matrix shows that long term debt ratios are positively correlated with non debt tax shields, tangibility, uniqueness, size and growth and negative with the rest of independent variables.

Short term leverage ratios are positively correlated with size, earning volatility and dividend payout per share and have negative correlation with the rest of explanatory variables. We found VIF values less than 3 for all the variables and hence based on Asteriou (2007), conclude that there are no significant multicollinearity issues among the explanatory variables.

Table 4.94: Correlation Matrix for Sri Lankan Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.210*	1.000									
NDTS	.174*	-.173*	1.000								
TANG	.346*	-.458*	.245*	1.000							
UNIQ	.031	-.252*	-.058	.297*	1.000						
SIZE	.112*	.009	.032	.019	-.189*	1.000					
EVOL	-.021	.013	.043	-.099*	-.019	-.329*	1.000				
GROW	.231*	-.144*	.302*	.276*	-.005	.167*	.044	1.000			
PROF	-.103*	-.008	.399*	-.149*	-.222*	-.027	.198*	.164*	1.000		
LIQD	-.382*	-.203*	-.128*	-.271*	-.021	-.216*	.066*	-.177*	.112*	1.000	
DIVP	-.106*	.063*	.017	-.091*	-.127*	.091*	-.051	.032	.129*	.072*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 116 Sri Lankan firms using annual data from 2006 to 2016.

4.24.2 Regression Results for Sri Lankan Firms

Table 4.95 reports regression output for Sri Lankan firms. According to tax substitution hypothesis, non debt tax shields provide the same benefit as interest tax shields. Therefore higher non debt tax shields are expected to restrict leverage. The same pattern is also in line with trade off. But fixed effects suggest that firms having higher level of non debt tax shield (NDTS) use more long term debt to book values of total assets (LDBTA). This relationship is highly significant (99%), and inconsistent with tax substitution, trade off (H1) and previous studies (e.g. DeAngelo & Masulis, 1980; Wald, 1999). However, previous studies (e.g. Barclay et al., 1995; Bradley et al., 1984) support these findings.

Size also appears to be a highly significant (99%) firm specific determinant of long term leverage ratios in Lanka. Positive and significant size coefficient suggests those larger Sri Lankan firms are more levered than their smaller counterparts. As size is an inverse proxy of bankruptcy costs (De Jong., 2008), hence larger firms can use more leverage without any significant increase in bankruptcy costs. Hence our findings in this regard confirm trade off (H4). Similar results are previously reported by Akhtar and Oliver (2009); Karacaer et al. (2016); Wald (1999).

The slope coefficient for liquidity (LIQD) reveals that liquid firms in Sri Lanka are least levered. This relationship has 99% level of significance. Negative LIQD-LDBTA is contrary to trade off and previously results by Feidakis and Rovolis (2007). Thus our H8 regarding positive LIQID-LDBTA relationship under trade off could not be substantiated.

Apart from NDTS, SIZE and LIQD all the remaining regressors are in significant.

Table 4.96 presents the regression results for LSDV and error component model for Sri Lankan firms. In line with trade-off, tangible assets can be pledged as a guarantee to reduce cost of financial distress and other agency cost of debt. Therefore trade off expects financial leverage to have positive relationship with assets tangibility. But Sri Lankan fixed effects reveal that asset structure (TANG) has negative and highly significant regression coefficient. Thus we suggest that trade off (H2) does not hold in case of asset tangibility and short term debt ratios in

TABLE 4.95: Regression Results for Sri Lankan Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.447***	(.437)	.116***	(.358)
TANG	.036	(.069)	.083	(.058)
UNIQ	.062	(.115)	.010	(.092)
SIZE	.073***	(.026)	.023***	(.009)
EVOL	.047	(.143)	.022	(.128)
GROW	.194	(.121)	.207**	(.106)
PROF	-.067	(.080)	-.139**	(.067)
LIQD	-.031***	(.009)	-.034***	(.009)
DIVP	-.005	(.012)	-.008	(.013)
Observations	1,016		1,016	
Number of id	116		116	
R-squared (Within)	.192		.162	
Between	.045		.184	
Overall	.074		.186	
F_Stat/Wald_Chi^2	10.5 (.000)		195.8 (.000)	
rho	.828		.642	
Hausman_Chi^2	25.5 (.000)			
Breusch Pagan LM	926.8 (.000)			
Alphafehat (Mean)	7.36^{-11}			

Robust standard errors in parentheses
*** $p < .01$, ** $p < .05$, * $p < .1$

Sri Lankan case. However the same relationship can be justified under pecking order hypothesis. According to trade-off theory if financial leverage increases beyond a certain level, the risk of financial distress increases and the benefit of tax shields diminish. Hence Trade-off predicts that increase in earnings volatility or business risk would push indebted firms into financial distress. Therefore firms having higher variations in their earnings or cash flows are expected to employ low financial leverage. However Lankan results suggest that firms use higher level of short term debt when earning volatility is high. Aggressive behavior regarding higher short run borrowings during periods of volatile earnings does not support trade off predictions (H5). But Diamond (1991) suggests that higher short term debt may be more feasible option than long term debt during turbulent earnings.

Wijst and Thurik, (1993) suggest that highly liquid firms may afford higher level of short term borrowings than their illiquid counterparts. However many prior studies (Ozkan, 2000; Scherr and Hullburt, 2001) suggest liquid firms are mostly likely less levered. Our results suggest that highly liquid Sri Lankan firms avoid using short term leverage. This observed pattern is robust at 99% confidence. As negative LIQD coefficient is against trade off predictions. Therefore our H8 does not hold grounds. Rest of the regressors have mixed and insignificant impact.

TABLE 4.96: Regression Results for Sri Lankan Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.399	(.367)	.234	(.319)
TANG	-.124***	(.046)	-.173***	(.040)
UNIQ	-.018	(.049)	-.050	(.037)
SIZE	-.002	(.010)	-.003	(.005)
EVOL	.222**	(.098)	.196**	(.092)
GROW	-.048	(.038)	-.053	(.037)
PROF	-.071	(.075)	-.081	(.069)
LIQD	-.048***	(.007)	-.050***	(.006)
DIVP	-.007	(.012)	-.005	(.012)
Observations	1,016		1,016	
Number of id	116		116	
R-squared (Within)	.193		.187	
Between	.245		.343	
Overall	.237		.312	
F_Stat/Wald_Chi^2	10.6 (.000)		258 (.000)	
rho	.745		.668	
Hausman_Chi^2	19.2 (0.003)			
Breusch Pagan LM	1358 (.00)			
Alphafehat (Mean)	-1.34^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.25 Nigeria Results

4.25.1 Descriptive Summary and Correlation Matrix for Nigerian Firms

Descriptive summary for the entire dependent and firms' specific independent variables for 57 Nigerian firms with a total of 485 observations is reported in table 4.97. Median (0.007) shows that majority of Nigerian firms in our sample have less than .07% debt to total assets ratios. However the mean values suggest that on average Nigerian firms finance 8.7% of their total assets with long term leverage. LDBTA across Nigerian sample firms has an overall standard deviation of 0.135 with an overall minimum and maximum of 0.000 and 0.770 respectively.

Similarly Median and Mean values of short term debt over total assets (SDBTA) are 0.047 and 0.110 respectively. SDBTA across Nigerian firms has an overall standard Deviation of 0.146 with an overall minimum and maximum of 0.000 and 0.695 respectively. Variation break ups reveal that the "between" and "within" variations are roughly equal for NDTS. EVOL, DIVP and GROW have higher "within" variation than "between" variation. The rest of variables have more "between" variation than "within" variation.

TABLE 4.97: Descriptive Statistics for Nigerian Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.007	.087	.135	.000	.770
	between			.109	.000	.523
	within			.085	-.203	.532
SDBTA	overall	.047	.110	.146	.000	.695
	between			.126	.001	.462
	within			.084	-.170	.645
NDTS	overall	.034	.037	.027	.000	.294
	between			.020	.003	.107
	within			.019	-.043	.286
TANG	overall	.388	.410	.211	.006	.924
	between			.190	.060	.866
	within			.108	.070	.762

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	overall	.186	.206	.139	.000	.904
	between			.144	.021	.721
	within			.057	-.141	.483
SIZE	overall	9.635	9.473	1.799	4.209	13.807
	between			1.734	5.337	12.240
	within			.649	6.013	13.220
EVOL	overall	.030	.042	.039	.000	.315
	between			.022	.010	.099
	within			.033	-.048	.258
GROW	overall	.059	.080	.083	.000	.645
	between			.044	.003	.206
	within			.070	-.105	.636
PROF	overall	.135	.151	.096	.002	.606
	between			.073	.024	.364
	within			.062	-.038	.471
LIQD	overall	1.174	1.357	.696	.122	4.475
	between			.530	.288	2.694
	within			.486	-.134	4.204
DIVP	overall	.412	.440	.375	.000	1.000
	between			.216	.000	1.000
	within			.311	-.368	1.160

Table presents summary statistics for 57 Nigerian firms using annual data 2006-2016

Table 4.98 presents the correlation coefficients between the explained and firm specific explanatory variables for Nigeria firms used in the analysis. The matrix shows that long term debt ratios in Nigeria are positively associated with non debt tax shields, assets structure, uniqueness, size and growth opportunities available. The rest of independent variables are negatively associated with long term leverage in Nigeria. Short term leverage ratios have negative correlation with all the explanatory variables. We use VIF to assess multicollinearity among firm specific regressors. As per Asteriou (2007) criteria (VIF=10) for serious multicollinearity, we declare that there are no significant multicollinearity issues among the explanatory variables.

TABLE 4.98: Correlation Matrix for Nigerian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.111*	1.000									
NDTS	.040	-.176*	1.000								
TANG	.309*	-.302*	.300*	1.000							
UNIQ	.026	-.273*	.212*	.272*	1.000						
SIZE	-.117*	-.109*	.096*	.177*	-.366*	1.000					
EVOL	-.062	-.022	-.020	-.024	.072	-.077	1.000				
GROW	.208*	-.163*	.245*	.322*	.110*	.096*	.029	1.000			
PROF	-.125*	-.224*	.336*	.099*	-.089	.151*	.154*	.216*	1.000		
LIQD	-.246*	-.239*	.050	-.292*	.096*	-.211*	.098*	-.048	.078	1.000	
DIVP	-.155*	-.005	-.007	-.144*	-.081	.026	.007	.022	.304*	.061	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 57 Nigerian firms using annual data from 2006 to 2016.

4.25.2 Nigeria Regression Results

Nigerian results are reported in Table 4.99. Under Hausman test we accept our null hypothesis regarding independent distributions of entity specific effects (ε_i). Therefore error component model is preferred to LSDV in Nigerian case to examine the impact of firm factors on their long term leverage ratios. Random effects suggest only three significant determinants of leverage in Nigeria. All the three significant predictions are opposite to that of trade off.

For example random effects in Nigeria show that larger firms use significantly less leverage than their smaller counterparts. These results are very much different than most of our results for other countries and previous literature (e.g. Akhtar & Oliver, 2009; Alves & Ferreira, 2011; Baker & Wurgler, 2002; Bevan & Danbolt, 2002; Buferna et al., 2005; Cwynar, Cwynar & Dankiewicz, 2015). Negative and unexpected coefficient of SIZE in Nigeria is also contrary to theoretical predictions of trade off (H4). However negative impact of size on leverage ratios in Nigerian case is consistent with pecking order hypothesis.

Besides that negative slopes of profitability and liquidity are both slightly significant at 90%. This indicates that profitable and highly liquid firms in Nigeria avoid using long term financial leverage. Both these patterns are in line with Pecking order. Hence both H7 and H8 can be rejected. All the 06 remaining factors are inconclusive to determine leverage ratios in Nigerian non financial sector.

Table 4.100 presents the impact of firm specific regressors on short term debt in Nigeria. Random effect model predicts that firms with high non-debt tax shields use higher level of short term debt in Nigeria as shown by positive NDTS coefficient. This means that firms with higher depreciation and amortization expense use more short term debt. This contradicts the predictions of tax substitution hypothesis and trade off (H1).

Tangible assets (such as land and building etc) can serve as good collateral to external borrowings. This can reduce risk of lender due to reduction in the agency cost of debt. Therefore firms with a large fraction of tangible assets are expected to get more debt financing (Frank & Goyal. 2009). Based on above rationale,

Table 4.99: Regression Results for Nigerian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.017	(.011)	.001	(.007)
TANG	.053	(.071)	.096	(.066)
UNIQ	-.148	(.147)	-.107	(.105)
SIZE	-.115*	(.325)	-.108***	(.291)
EVOL	.013	(.126)	-.009	(.115)
GROW	.152	(.138)	.160	(.133)
PROF	-.104**	(.094)	-.121*	(.078)
LIQD	-.024	(.015)	-.024*	(.012)
DIVP	-.020	(.021)	-.019	(.019)
Observations	485		485	
Number of id	57		57	
R-squared (Within)	.094		.089	
Between	.134		.227	
Overall	.121		.168	
F_Stat/Wald_Chi^2	3.1 (.002)		55 (.000)	
rho	0.573		.443	
Hausman_Chi^2	7.7 (0.658)			
Breusch Pagan LM	367 (.000)			
Alphafehat (Mean)	4.21^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

trade off theory also expects positive leverage-tangibility relationship. However negative regression slope for TANG shows that Nigerian firms having higher asset tangibility do not follow trade off (H2). Wijst and Thurik (1993) findings also complement our results.

Prior literature (Titman & Wessels, 1988) suggests that unique firms are more vulnerable to higher cost of financial distress. This is because assets of such firms are not easily redeployable. Thus according to trade off, unique firms should avoid higher financial leverage. Our results regarding UNIQ-SDBAT relationship is in line with trade off (H3). As indicated by significant negative uniqueness coefficient, Nigerian non financial firms with unique production restrict short term debt.

Highly profitable firms face low chances of financial distress. Hence based on static trade-off theory profitable firms would try to shield their profits from corporate taxes by employing high level of leverage (Buferna et al., 2005; Frank & Goyal. 2009; Long & Malitz, 1988). But negative and highly significant coefficient of

PROF shows that profitable Nigerian firms avoid higher short term debt ratios. These results are contrary to trade off (H7). However, pecking order and voluminous prior literature (Karacaer et al., 2016; Berger, 2008; Lemmon et al., 2008; Rajan & Zingales, 1995; Shyam-Sunder & Myers, 1999; Titman & Wessels, 1988; Wald, 1999) justify our findings.

Williamson (1988) suggests that firm having more liquid and redeployable assets may use higher level of financial leverage, because such assets are easily monitored and liquidated. Positive leverage-liquidity relationship is consistent with trade-off because more liquid assets mean low risk of bankruptcy (Harris & Raviv, 1990; Shleifer & Vishny, 1992). However our results show that liquid Nigerian firms are less levered. This particular observed pattern does not support trade off (H8). Sheikhs (2015) complement these results. All the rest of regressors are insignificant in Nigeria.

Table 4.100: Regression Results for Nigerian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.523**	(.205)	.500***	(.181)
TANG	-.123*	(.065)	-.156***	(.057)
UNIQ	-.133	(.093)	-.179**	(.079)
SIZE	.009	(.014)	.003	(.005)
EVOL	.327*	(.192)	.300	(.190)
GROW	.049	(.065)	.041	(.065)
PROF	-.192**	(.083)	-.242***	(.096)
LIQD	-.042***	(.010)	-.047***	(.010)
DIVP	.009	(.017)	.007	(.017)
Observations	485		485	
Number of id	57		57	
R-squared (Within)	.120		.113	
Between	.201		.379	
Overall	.170		.277	
F_Stat/Wald_Chi^2	2.8 (.000)		76.4 (.000)	
rho	.637		.566	
Hausman_Chi^2	2 (.100)			
Breusch Pagan LM	343.7 (.000)			
Alphafehat (Mean)				

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.26 Romania Results

4.26.1 Descriptive Summary and Correlation Matrix for Romanian Firms

58 Romanian non financial firms with a total of 428 observations over 2006-16 are included in our sample. Table 4.101 reports the descriptive statistics for Romanian firms.

Median and Mean values of long term debt to total assets ratio across firms and data period are 0.056 and 0.113 respectively. This means that on average 11.3% of total assets are financed with long term debt in Romania. However median values suggest that majority of firms finance 5.6% of total assets with long term leverage. LDBTA across Romanian sample firms has an overall standard deviation of 0.141 with an overall minimum and maximum of 0.000 and 0.758 respectively. Similarly Median and Mean values of short term debt over total assets (SDBTA) are 0.000 and 0.039 respectively. SDBTA across Romanian firms has an overall standard Deviation of 0.081 with an overall minimum and maximum of 0.000 and 0.560 respectively.

Table 4.101 shows that "between" and "within" variations are roughly equal for LDBTA, SDBTA, NDTS, PROF and EVOL. DIVP have higher "within" variation than "between" variation. The rest of variables have more "between" variation than "within" variation.

Table 4.101: Descriptive Statistics for Romanian Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.056	.113	.141	.000	.758
	between			.106	.000	.402
	within			.105	-.266	.561
SDBTA	overall	.000	.039	.081	.000	.560
	between			.060	.000	.295
	within			.056	-.189	.304
NDTS	overall	.031	.034	.028	.000	.156
	between			.020	.000	.081
	within			.021	-.047	.150
TANG	overall	.540	.528	.222	.000	.971

Variable		Median	Mean	Std. Dev.	Min	Max
	between			.184	.130	.921
	within			.135	-.005	.923
UNIQ	overall	.102	.143	.145	.000	.695
	between			.111	.000	.604
	within			.102	-.224	.698
SIZE	overall	5.313	5.459	1.418	1.975	10.672
	between			1.351	2.872	10.362
	within			.354	3.531	6.763
EVOL	overall	.028	.039	.037	.000	.326
	between			.027	.010	.147
	within			.030	-.040	.311
GROW	overall	.008	.037	.061	.000	.594
	between			.032	.000	.140
	within			.053	-.100	.495
PROF	overall	.078	.093	.073	.000	.602
	between			.055	.004	.282
	within			.054	-.062	.563
LIQD	overall	1.390	1.684	.988	.093	4.865
	between			.891	.503	4.719
	within			.613	-.312	4.305
DIVP	overall	.756	.537	.477	.000	1.000
	between			.271	.000	1.000
	within			.406	-.363	1.412

Table presents summary statistics for 58 Romanian firms using annual data 2006-2016

Table 4.102 presents the correlation coefficients between the explained and firm specific explanatory variables for Romanian firms used in the analysis. Correlation matrix shows that long term leverage ratios are positively correlated with non debt tax shields, uniqueness, tangibility, size, growth and profitability and negative with the rest of independent variables. Similarly short term leverage ratios are positively correlated with non debt tax shields, uniqueness, size and growth across Romanian firms for 2006 to 2016 and negative correlated with the rest explanatory variables. To assess multicollinearity issues in the data we checked all the correlation coefficients among explanatory variables and VIF values. We found all our coefficients far blow 0.9 and VIF values less than 3. Thus based on threshold ‘r’ and VIF as per Asteriou (2007), we report that our data is not suffering from multicollinearity.

Table 4.102: Correlation Matrix for Romanian Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.031	1.000									
NDTS	.275*	.138*	1.000								
TANG	.026	-.085	.162*	1.000							
UNIQ	.002	.063	.351*	-.087	1.000						
SIZE	.127*	.108*	.237*	.135*	-.045	1.000					
EVOL	-.036	-.025	.063	.118*	.054	-.203*	1.000				
GROW	.097*	.056	.333*	.072	.169*	.296*	-.012	1.000			
PROF	-.302*	-.058	.385*	-.085	.112*	.117*	.311*	.249*	1.000		
LIQD	.004	-.286*	-.050	-.153*	.216*	-.156*	.084	-.134*	.197*	1.000	
DIVP	-.168*	-.105*	-.404*	-.134*	-.212*	-.301*	.049	-.289*	-.103*	.092	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 58 Romanian firms using annual data from 2006 to 2016.

4.26.2 Romanian Regression Results

Table 4.103 presents the regression results regarding determinants of long term leverage ratios in Romanian non financial firms. Romania fixed effects report that non debt tax shield (NDTS) is positively related with long term debt to book values of total assets. This means that Romanian firms having more depreciation and amortization expenditure often go for long term financial leverage. This relationship is line with previous studies (e.g. Barclay et al., 1995; Bradley et al., 1984; Chang et al., 2009; Harris & Raviv, 1991; Kester, 1986) and contrary to a number of prior empirical and theoretical studies (e.g. Akhtar & Oliver, 2009; DeAngelo & Masulis, 1980 Deesomsak et al., 2004; Flannery & Rangan, 2006; Wiwattanakantang, 1999; Yang et al., 2015). Positive NDTS slope is neither in line with tax substitution nor trade off. Hence we reject our H1 in case of Romania.

Size as represented by its positive and slightly robust coefficient is another predictor of long term leverage in Romania. Positive SIZE-LDBTA relationship is in accordance with trade-off theory (H4) and in line with prior studies (Friend & Lang, 1988; Frank & Goyal, 2009; Fama & French, 2002; Wald, 1999).

According to pecking order profitable firms can further reduce financial risk by using internal least risky resources of financing. However, trade off expects profitable firms to use higher leverage to get more interest tax shields. In agreement with the predictions of pecking order profitability shows negative slope for firms in the Romanian non financial sector. This relationship is in line with a number of prior studies (Chen, 2004; Chang, Lee and Lee, 2009; Cwynar, Cwynar, & Dankiewicz, 2015; Karacaer et al., 2016). As trade off prediction regarding PROF-LDBTA relationship is not valid therefore we reject our H7.

Besides NDTS, SIZE and PROF no other firm specific factor significantly predicts LDBTA in Romanian non financial sector.

To examine the determinants of short term leverage in Romania output of fixed and random effect models is illustrated in Table 4.104. As per Hausman recommendation fixed model is suitable and appropriate for prediction. As per fixed

Table 4.103: Regression Results for Romanian Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	.116**	(.472)	.157**	(.468)
TANG	.001	(.047)	.022	(.041)
UNIQ	.045	(.064)	.020	(.065)
SIZE	.055*	(.030)	.010	(.012)
EVOL	-.073	(.217)	-.098	(.200)
GROW	-.021	(.153)	-.014	(.142)
PROF	-.048***	(.015)	-.048***	(.012)
LIQD	.130	(.098)	.039	(.086)
DIVP	.013	(.017)	.010	(.016)
Observations	428		428	
Number of id	58		58	
R-squared (Within)	.253		.239	
Between	.076		.159	
Overall	.096		.170	
F_Stat/Wald_Chi^2	6 (.000)		115.3 (.000)	
rho	.605		.377	
Hausman_Chi^2	13.7 (.001)			
Breusch Pagan LM	163.3 (.000)			
Alphafehat (Mean)	4.95^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

effects output, only three firm specific variables significantly influence short term borrowings in Romania.

Fixed effects suggest that increase in assets tangibility decreases short term leverage. Negative TANG-LDBTA relationship is slightly significant at 90%. Negative relationship between asset structure and short term leverage is opposite to what trade off predicts. Hence H2 can be rejected in Romanian context.

Trade off suggests that unique firms are more vulnerable to financial distress. Therefore firms dealing in unique production are expected to be less reliant on external borrowings (Titman & Wessels, 1988). However our results regarding Romanian firms suggest the opposite. Positive UNIQ slope suggests that unique

Romanian firms borrow more short term debt. This relationship is significant at 95% probability level. Thus we reject H3 regarding negative leverage-uniqueness relationship.

Liquidity of Romanian firms is another moderately significant predictor of short term borrowings in Romanian non financial sector. Negative slope of LIQD suggests that highly liquid firms in Romania are less levered. Our results are in line with Ozkan (2000) and Scherr and Hullburt (2001), however contrary to what trade off predicts. Therefore we disapprove H8. All the remaining regressors have no impact on short term debt ratios in Romania.

TABLE 4.104: Regression Results for Romanian Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.378	(.250)	.389*	(.223)
TANG	-.043*	(.022)	-.042**	(.019)
UNIQ	.090**	(.042)	.066*	(.036)
SIZE	.000	(.014)	.006	(.007)
EVOL	.100	(.171)	.105	(.148)
GROW	-.012	(.063)	-.020	(.064)
PROF	-.053	(.053)	-.062	(.051)
LIQD	-.011**	(.005)	-.015***	(.004)
DIVP	-.007	(.009)	-.008	(.009)
Observations	428		428	
Number of id	58		58	
R-squared (Within)	.124		.117	
Between	.061		.182	
Overall	.084		.121	
F_Stat/Wald_Chi^2	2.5 (.000)		57.5 (.000)	
rho	.500		0.372	
Hausman_Chi^2	19.7 (.000)			
Breusch Pagan LM	252 (.000)			
Alphafehat (Mean)	4.01^{-10}			

Robust standard errors in parentheses
**** p < .01, ** p < .05, * p < .1*

4.27 Vietnamese Results

4.27.1 Descriptive Summary and Correlation Matrix for Vietnamese Firms

Our sample of Vietnamese firms comprised of 145 non financial firms with a total of 1104 observations over 2006-16. The descriptive summary for two dependent and nine independent firm specific attributes has been reported in table 4.105. The said table shows that on average firms in Vietnam use 21% long term leverage in relation to book values of their total assets. But the median value suggests that majority of Vietnamese firms use 18.4% long term leverage. Long term debt to BV of total assets across Vietnamese firms has an overall standard deviation of 0.162 with an overall minimum and maximum of 0.000 and 0.734 respectively.

Median and Mean values of short term debt over total assets (SDBTA) are 0.027 and 0.089 respectively. SDBTA across Vietnamese firms has an overall standard deviation of 0.133 with an overall minimum and maximum of 0.000 and 0.758 respectively.

The "between" and "within" variations are roughly equal for PROF and EVOL. GROW and DIVP have higher "within" variation than "between" variation. The rest of variables have more "between" variation than "within" variation.

Table 4.105: Descriptive Statistics for Vietnamese Firms.

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.184	.210	.162	.000	.734
	between			.131	.000	.599
	within			.085	-.113	.572
SDBTA	overall	.027	.089	.133	.000	.758
	between			.115	.000	.568
	within			.063	-.271	.447
NDTS	between	.028	.035	.031	.000	.261
	within			.026	.002	.190
	overall			.014	-.077	.209
TANG	between	.521	.515	.201	.015	.977
	within			.172	.091	.903
	overall			.097	-.021	.881

Variable		Median	Mean	Std. Dev.	Min	Max
UNIQ	between	.071	.093	.073	.005	.462
	within			.062	.010	.346
	overall			.032	-.060	.374
SIZE	between	20.495	20.600	1.304	17.387	24.223
	within			1.136	17.584	23.540
	overall			.457	17.824	22.968
EVOL	between	.022	.033	.049	.001	.634
	within			.030	.002	.222
	overall			.038	-.180	.446
GROW	between	.039	.068	.085	.000	.597
	within			.052	.002	.288
	overall			.071	-.086	.571
PROF	between	.124	.140	.089	.000	1.176
	within			.062	.035	.447
	overall			.062	-.114	1.053
LIQD	between	1.370	1.621	.833	.110	4.900
	within			.646	.555	4.355
	overall			.514	.047	4.741
DIVP	between	1.000	.784	.411	.000	1.000
	within			.266	.000	1.000
	overall			.321	-.116	1.673

Table presents summary statistics for 145 Vietnamese firms using annual data 2006-2016

Correlation matrix for Vietnamese firms is reported in Table 4.106. As per correlation matrix long term leverage ratios in Vietnam are positively correlated with non debt tax shields, assets structure of firms, size and growth opportunities available to firms and have negative coefficients with the rest of independent variables. Short term leverage ratios across Vietnamese firms show positive correlation coefficients with assets tangibility and firm size only. The rest of independent variables show negative association with short term leverage in Vietnam.

To assess any possibility of multicollinearity all correlation coefficients and VIF values were checked. Generally serious multicollinearity issues arise when correlation coefficient ‘r’ value exceeds 0.9 or VIF value approaches to 10 (Asteriou, 2007). Thus we argue that all our correlation coefficients are below the threshold level and VIF less than 3 hence no serious issue of multicollinearity is there in the data.

Table 4.106: Correlation Matrix for Vietnamese Firms.

Variables	LDBTA	SDBTA	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
LDBTA	1.000										
SDBTA	-.214 *	1.000									
NDTS	.326*	-.163*	1.000								
TANG	.406*	.119*	.359*	1.000							
UNIQ	-.129*	-.231*	-.086*	-.114*	1.000						
SIZE	.282*	.052	-.048	.046	.013	1.000					
EVOL	-.057	-.003	-.025	-.039	.084*	-.014	1.000				
GROW	.347*	-.159*	.316*	.271*	-.062*	.026	.024	1.000			
PROF	-.014	-.216*	.422*	.036	.055	.015	.343*	.183*	1.000		
LIQD	-.199*	-.474*	-.124*	-.289*	.251*	-.077*	.107*	-.073*	.207*	1.000	
DIVP	-.130*	-.083*	.013	-.151*	-.057	.023	-.037	.045	.209*	.157*	1.000

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table presents correlation coefficients between individual variables for all the 02 explained and 09 explanatory variables. The sample contains 145 Vietnamese firms using annual data from 2006 to 2016.

4.27.2 Vietnamese Regression Results

To test the likely impact of 09 firm specific factors on long term debt to BV of total assets Vietnamese regression results are reported in Table 4.107. Hausman test recommends fixed effect model for predictions. Vietnamese results show that asset structure is highly robust (99%) and positive predictor of long term debt. This means that firms with highly collateralizable characteristics are inclined to use more leverage. These results support the theoretical predictions of trade off (H2). Similar findings are also reported in previous studies (Bevan & Danbolt, 2004; Booth et al., 2001; Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999).

De Jong et al. (2008) suggest that bankruptcy costs decreases as size increases. Therefore larger firms seem more qualified to use long term leverage than smaller firms. Trade off also suggests the same. Like our results in previous countries, size of firms significantly determines leverage ratios in Vietnam also. Regression coefficient of SIZE is highly significant (99%) and positive. This confirms trade off (H4). Our findings are also supported by previous literature (e.g. Karacaer et al., 2016; Supanvanij, 2006).

Growing firms are expected to have more uncertainty in comparison with mature stable firms. Therefore according to trade off framework growing firms are expected to restrict leverage. Our results show that Vietnamese firms having more growth opportunities (GROW) are more levered financially as suggested by positive and robust growth coefficient. This observed pattern is not in line with trade-off (H6). However the same pattern is justified under pecking order and prior literature (i.e. Filsaraei et al., 2016; Kester, 1986; Michaelas et al., 1999; Wald, 1999).

Profitability is another significant predictor of long term leverage in Vietnam. According to results profitable Vietnamese firms use significantly lower level of long term leverage. This implies that profitable non financial firms in Vietnam prefer to avoid risky financing options and cost of information asymmetry when least risky options are available internally. Negative and significant relationship between profitability and long term debt in the Vietnamese context is opposite to the predictions of trade off (H7) and some prior literature (i.e. Frank & Goyal. 2009). Our results in this regard are consistent with pecking order hypothesis and prior literature (Booth et al., 2001; Supanvanij, 2006).

Liquidity is another significant predictor of long term leverage in Vietnam. Under trade off framework, highly liquid firms are expected to be less vulnerable to bankruptcy. Therefore such firms may afford higher financial leverage (Shleifer & Vishny, 1992). Vietnamese results show positive robust liquidity coefficient suggesting highly liquid firm use more long term leverage. These findings supports theoretical proposition (H8). Feidakis and Rovolis (2007) findings support our results. Remaining independent variables e.g. non debt tax shields, uniqueness, business risk and dividend payout per share are insignificant factors to determine leverage.

TABLE 4.107: Regression Results for Vietnamese Firms.

Variables	(1) Fixed LDBTA	Std. Err. adjusted for clusters in id	(2) Random LDBTA	Std. Err. adjusted for clusters in id
NDTS	-.046	(.215)	.239	(.191)
TANG	.098***	(.026)	.118***	(.028)
UNIQ	.035	(.066)	-.027	(.057)
SIZE	.054***	(.011)	.042***	(.008)
EVOL	.022	(.061)	.021	(.065)
GROW	.196***	(.050)	.218***	(.048)
PROF	-.107**	(.048)	-.126**	(.052)
LIQD	.015**	(.006)	.012*	(.006)
DIVP	-.010	(.007)	-.011*	(.006)
Observations	1,104		1,104	
Number of id	145		145	
R-squared (Within)	.214		.203	
Between	.180		.291	
Overall	.188		.273	
F_Stat/Wald_Chi^2	13 (.000)		305 (.000)	
rho	.752		.646	
Hausman_Chi^2	176.9 (.000)			
Breusch Pagan LM	1646 (.000)			
Alphafehat (Mean)	5.87^{-10}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

Regression output regarding short term leverage and firm's specific attributes for Vietnamese non-financial firms are reported in Table 4.108. As per Hausman recommendation fixed effect model is appropriate for prediction. Regression output suggests that profitability and liquidity are the two significant predictors of short term borrowings in Vietnam.

Like most of other countries in our sample, Vietnamese results show that highly profitable firms are less levered even in short run. Under framework of trade off, as profitable firms have low chances of going into financial distress, therefore expected to exploit benefits of leverage. But results in Vietnamese case contradict these lines (H7). Pecking order and Wijst and Thurik (1993) results support our findings.

Finally, bankruptcy costs for liquid firms are less because liquid assets can be easily liquidated without any significant discount from face values. Therefore trade off expects liquid firms in better position to use leverage. However Romanian regression output suggests that liquid firms are significantly less levered in short run than their illiquid counterparts. Negative and highly robust (99%) slope of liquidity is contradictory to trade off (H8) and Wijst and Thurik (1993) findings. However a number of studies (Garcia-Teruel & Martinez-Solano, 2004; Scherr & Hulburt, 2001) support our findings. All the rest of firms' specific regressors are insignificant to determine short term debt in Vietnam.

Table 4.108: Regression Results for Vietnamese Firms.

Variables	(1) Fixed SDBTA	Std. Err. adjusted for clusters in id	(2) Random SDBTA	Std. Err. adjusted for clusters in id
NDTS	.036	(.220)	-.233	(.206)
TANG	-.030	(.043)	-.015	(.038)
UNIQ	-.041	(.108)	-.113	(.089)
SIZE	.022	(.016)	.010	(.008)
EVOL	.038	(.067)	.052	(.061)
GROW	-.078	(.052)	-.096*	(.051)
PROF	-.152***	(.047)	-.144***	(.046)
LIQD	-.076***	(.008)	-.079***	(.007)
DIVP	-.004	(.008)	-.003	(.008)
Observations	1,104		1,104	
Number of id	145		145	
R-squared (Within)	.306		.302	
Between	.238		.310	
Overall	.225		.278	
F_Stat/Wald_Chi^2	21 (.000)		464 (.000)	
rho	.689		.618	
Hausman_Chi^2	36 (.000)			
Breusch Pagan LM	1949 (.000)			
Alphafehat (Mean)	1.87^{-11}			

Robust standard errors in parentheses
**** $p < .01$, ** $p < .05$, * $p < .1$*

4.28 Cross-Country Comparison of Regression Results

Tables 4.109 and 4.110 compare regression coefficients of long term debt ratios and short term debt ratios and firm specific explanatory variables respectively. The table 4.109 shows that profitability and size are the most consistent factors in terms of sign and significance to predict long term leverage across all countries. Similarly Table 4.110 shows that asset structure and liquidity are the two most reliable firm specific attributes to determine short term leverage ratios.

Table 4.109: Cross-Country summary of Regression Coefficients (LDBTA).

Country	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
US	.424***	.028	-.061	.046***	.125***	-.121***	-.237***	-.019***	.009
UK	.144	.144*	-.079**	.038***	.232*	.051	-.145	-.006	.015
Japan	.359***	.227***	-.086**	.036***	.189**	-.012	-.477***	.010***	-.00774**
S. Korea	.397***	.123***	.049*	.032***	.183***	.121***	-.264***	-.002	.002
Canada	-.137	.253***	.041	.051***	.157*	.001	-.124*	-.005	-.006
Australia	.055	.093*	-.025	.052***	.064	-.007	-.088**	-.015***	-.025**
France	.062	.048	-.006	.040***	.223**	000	-.268***	-.0133**	-0.004
Germany	.146	.306***	.001	.037***	.124	-.059	-.369***	-.010*	-.002
Italy	-.067	.042	.117*	.052**	-.094	.008	-.051	-.007	-.016
Switzerland	.573	.123	-.178*	.026	.281	-.08	-.422***	-.004	-.006
Brazil	.463	-.029	-.201*	.024	.008	.124*	-.231***	-.018**	-.028**
China	.250	.163***	-.087*	.041***	-.033	.087**	-.330***	.009*	.001
India	.462***	.147***	-.001	.008***	.058	-.248***	-.0415	-.0121***	-.008
Indonesia	.024	.087	.043	.002	-.019	-.098	-.184**	-.020**	-.014

Country	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
Malaysia	.283	.116***	.026	.077***	.058	.105*	-.151**	-.009**	-.014
S.Africa	.349	.082	.058	.048**	.108	-.074	-.299***	-.00552	-.0279
Turkey	-.683**	.074	.194*	.088***	.037	.065	-.038	-.012	.017
Poland	.0004	-.029	-.011	.039***	.249***	.057	-.172***	-.0254***	.014
Thailand	.063	.136***	.146*	.074***	.054	-.022	-.225***	-.004	.010
Mexico	.492	.061	-.084	.050***	-.207	-.426***	-.153	-.009	-.003
Pakistan	.286	.062	-.375**	.056***	-.045	.042	-.222***	-.076***	-.037**
Argentina	.327**	-.272***	.295**	.086**	-.363	.303*	-.407***	-.059***	-.072**
Bulgaria	-.375	-.061	-.031	.039*	.203**	.275***	-.226***	.034	-.036
Sri Lanka	.447***	.036	.062	.073***	.047	.194	-.0672	-.031***	-.005
Nigeria	.017	.053	-.148	-.115*	.013	.152	-.104**	-.024	-.020
Romania	.116**	.001	.045	.055*	-.073	-.021	-.048***	.130	.013
Vietnam	-.046	.098***	.035	.054***	.022	.196***	-.107**	.015**	-.010

**** $p < .01$, ** $p < .05$, * $p < .1$*

Table 4.110: Cross-Country summary of Regression Coefficients (SDBTA).

Country	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
US	-.001	-.026***	-.014	-.003	.031	.001	-.013	-.016***	.005**
UK	.153	-.077***	.016	-.002	.010	.023	-.041*	-.029***	-.004
Japan	.125	-.107***	.049	.011**	.118*	-.051**	-.363***	-.065***	-.003
S. Korea	.188	-.031*	-.002	.011**	.019	-.054**	-.167***	-.064***	-.008**
Canada	.021	-.039***	-.029	-.009***	-.031	-.038*	-.070***	-.021***	-.002
Australia	.007	-.045***	.007	-.008*	.092***	-.024	-.027	-.025***	-.004
France	.008	-.041*	.030**	.009*	.099**	-.027	-.042**	-.029***	.002
Germany	.030	-.019*	-.009	-.003***	.007	.013	-.064***	-.016***	.000
Italy	-.141	.018	.068*	.024**	.233	-.165**	-.178**	-.067***	.002
Switzerland	.008	-.021	.034	-.001	-.018	.088*	-.087*	-.022***	-.004
Brazil	.015	-.025***	-.118	-.001	.004	-.003	-.012	-.019***	-.014***
China	.401**	-.058**	-.010	.006	.067	-.054*	-.295***	-.068***	-.018**
India	.054	-.070***	.031*	-.007***	.092*	-.003	-.003	-.022***	-.002
Indonesia	.176*	-.066**	-.049	.005**	-.105	.028	-.059	-.039***	.000

Country	NDTS	TANG	UNIQ	SIZE	EVOL	GROW	PROF	LIQD	DIVP
Malaysia	.021	-.051***	-.049	.009	-.078*	-.050	-.065	-.038***	-.005
S.Africa	-.117	-.054**	-.025	-.006*	.017	.062	.000	-.034***	.017*
Turkey	.340**	-.093	-.199*	.008	.194	-.035	-.104	-.051***	-.023*
Poland	.032	.005	.023	-.001	.092	-.053*	-.034	-.026***	-.012*
Thailand	.013	-.070**	-.125***	.006	.148*	-.104***	-.257***	-.052***	.007
Mexico	-.154	-.051**	-.037*	-.003	.185	.054	-.048	-.016***	.001
Pakistan	.336	-.288***	-.140	.022*	-.130	-.040	-.219***	-.076***	-.012
Argentina	-.106	-.013	.002	-.001	-.014	.020	-.036	-.018***	.015
Bulgaria	-.402*	-.015	.061	-.012	-.124**	-.075	.074**	-.050***	.011
Sri Lanka	.399	-.124***	-.018	-.002	.222**	-.048	-.071	-.048***	-.007
Nigeria	.500***	-.156***	-.179**	.003	.300	.041	-.242***	-.047***	.007
Romania	.378	-.043*	.090**	.000	.100	-.012	-.053	-.011**	-.007
Vietnam	.036	-.030	-.041	.022	.038	-.078	-.152***	-.076***	-.004

**** $p < .01$, ** $p < .05$, * $p < .1$*

4.29 Direct Effects of Country-Specific Factors on Average Long Term Debt

Tables 4.111 to 4.113 presents the correlation coefficients between average long term debt and countries specific explanatory variables for developed, emerging and developing countries respectively. To have a feel of multicollinearity issues in the data variance inflation factors were calculated and found less than 6. By examining correlation coefficients we found no coefficient equal or greater than threshold (0.9) that may pose multicollinearity. Hence based on Asteriou (2007), we declare that there are no significant multicollinearity issues among the explanatory variables in any of the three metrics.

Table 4.111: Correlation Matrix for Developed Countries.

	LDBTA	LEGL	CPPI	ECOF	BSAT	CMAT	BMAT
LDBTA	1.000						
LEGL	.001	1.000					
CPPI	-.002	.726*	1.000				
ECOF	-.103	.794*	.734*	1.000			
BSAT	.140	.327*	.415*	.409*	1.000		
CMAT	-.034*	.097	.081	.378*	-.210*	1.000	
BMAT	.009	.117	.160	.235*	.138	.364*	1.000

****p < .01, **p < .05, *p < .1*

Table 4.111 presents correlation coefficients between 6 explained and 01 explanatory variables.

Table 4.112: Correlation Matrix for Emerging Countries.

	LDBTA	LEGL	CPPI	ECOF	BSAT	CMAT	BMAT
LDBTA	1.000						
LEGL	-.092	1.000					
CPPI	.073	.517*	1.000				
ECOF	.047	.275*	.500*	1.000			
BSAT	-.099	-.227*	.256*	-.015	1.000		
CMAT	.006	-.357*	-.006	-.338*	.664*	1.000	
BMAT	.107	-.117	.055	.224*	.600*	.267*	1.000

****p < .01, **p < .05, *p < .1*

Table 4.112 presents correlation coefficients between 6 explained and 01 explanatory variables.

Table 4.113: Correlation Matrix for Developing Countries.

	LDBTA	LEGL	CPPI	ECOF	BSAT	CMAT	BMAT
LDBTA	1.000						
LEGL	.045	1.000					
CPPI	-.013	.637*	1.000				
ECOF	-.130	.267*	.669*	1.000			
BSAT	.462*	.376*	.155	.042	1.000		
CMAT	.352*	-.304*	-.369*	-.042	.016	1.000	
BMAT	.009	.117	.160	.235*	.138	.364*	1.000

$^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$

Table 4.113 presents correlation coefficients between 06 explained and 01 explanatory variables.

Regression outputs of the LSDV model to test the direct impact of 06 country specific factors on average long term debt ratios ($\sum$LDBTA) in each developed, emerging and developing block over 2006 to 2016 have been reported in Tables 4.114 to 4.116. Regression outputs show that countries characteristics differently influence average long term debt ratios in three economic blocks.

Regression results to examine the impact of 06 country's specific factors on average long term debt in 10 developed countries are presented in Table 4.114. According to Hausman test statistic Error Component Model is appropriate for predictions. In line with H_{15}, results show that bond market development has positive and slightly robust impact on average long term debt in developed countries. This implies that bond market improvement and development encourages firms to borrow more from bond market. The possible reason may be bond market development make it easier for firms to access debt without any requirement for physical collateral (Rajan & Zingales, 2001). De Jong et al. (2008) suggest that bond market development increases firms' willingness and borrowing options. Remaining variables (H_{10}, H_{11}, H_{12}, H_{13}, H_{14}) are insignificant to influence average debt employed by firms in developed countries.

Table 4.114: Regression Results for Developed Countries.

Variables	Random LDBTA	Std. Err. adjusted for clusters in id
LEGL	.013	(.311)
CPPI	-.024	(.137)
ECOF	-.007	(.081)
BSAT	.011	(.223)
CMAT	-.006	(.351)
BMAT	.020*	(.113)
Observations		110
Number of id		10
R-squared (Within)		.123
Between		.423
Overall		.100
F_Stat/Wald_Chi^2		4(.001)
Hausman_Chi^2		3.8(.079)
Breusch Pagan LM		172.7(.000)

****p < .01, **p < .05, *p < .1*

Regression results to test the impact of institutional factors on average long term debt in emerging countries are presented in Table 4.115. Regression output of emerging countries show that both legal integrity and bond market development influences firms choice to employ debt. Negative slightly significant slope of LEGL suggests that as integrity of legal system increases firms restrict borrowing may be due to fear of bankruptcy and more strict laws for creditors' protections. This is consistent with proposition H_{10}. De Jong et al. (2008) also suggest that legal protection for creditors may increase the perceived risk of bankruptcy due to legal fear and stringent debt contracts. Consistent with our proposition H_{15}, results suggest that bond market development in emerging countries also has a positive impact on long term debt employed by firms in emerging countries. Bond market development has similar effect on average debt in emerging countries as that of in developed block. The possible reason may that bond market development increases and eases external financing options for firms. The remaining four (H_{11}, H_{12}, H_{13}, H_{14}) country specific characteristics are insignificant to determine debt in emerging countries.

TABLE 4.115: Regression Results for Emerging Countries.

Variables	Fixed LDBTA	Std. Err. adjusted for clusters in id
LEGL	-.023*	(.041)
CPPI	.005	(.153)
ECOF	.023	(.088)
BSAT	-.001	(.071)
CMAT	.029	(.332)
BMAT	.035*	(.087)
Observations		110
Number of id		10
R-squared (Within)		.294
Between		.099
Overall		.012
F_Stat/Wald_Chi^2		3.9(.000)
Hausman_Chi^2		5.0(.089)
Breusch Pagan LM		132.2(.000)

$^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$

Regression output for random effects model, to test the impact of institutional factors on long term debt in developing countries are presented in Table 4.116. Positive significant coefficient of LEGL suggests that firms borrow more in developing countries as legal integrity enhances which is inconsistent with H10 and De Jong et al. (2008). Our predictions are in line with Demirguc-Kunt and Maksimovic (1999). The possible reason may that improvement of legal system encourages firms to borrow more or may be due to increase in borrowing opportunities that arise from legislation and improvement in governance.

Several reasons of different impact of legal system in emerging and developing can be there. We argue that developing countries are in the initial stage of improving legal environment to encourage economic activity. Similarly emerging countries may be more focused on creditors' protection.

TABLE 4.116: Regression Results for Developing Countries.

Variables	Random LDBTA	Std. Err. adjusted for clusters in id
LEGL	.017*	(.033)
CPPI	-.004	(.002)
ECOF	-.004	(.006)
BSAT	.001	(.001)
CMAT	.005	(.002)
BMAT	.090	(.007)
Observations		77
Number of id		07
R-squared (Within)		.344
Between		.001
Overall		.062
F_Stat/Wald_Chi^2		2(.001)
Hausman_Chi^2		7.8(.071)
Breusch Pagan LM		102.2(.000)

$^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$

Chapter 5

Discussion, Conclusions and Policy Implications

Literature suggests that there are certain aspects of capital structure that are portable across countries but still there are persistent crossectional discrepancies. A large sample of 27 countries and a total of 9536 non-financial firms over 2006-16 was analyzed to test the impact of 9 firm specific attributes on debt ratios using country by country panel data models. In first place we aimed to investigate the most reliable determinants of debt choice across individual countries. In the second place we compare the observed patterns across countries to see exactly which predictions are portable across. In regards to persistent discrepancies we also investigated how 06 different country specific factors directly influence average long term debt ratios. In broader sense, trade off is the principal theatrical framework that governs our study.

From descriptive statistics of the data we see that among ten developed countries U.S and Canadian firms have highest and Japanese and Korean firms have lowest leverage. Similarly Mexican and Brazilian firms are highly levered and Polish and Malaysian firms are least levered countries among emerging block. Firms in developing countries like Vietnam and Argentina make more use of long term debt, while Nigerian and Romanian firms make less use of long term debt on average. These results reveal that North and South American firms are highly levered than rest of firms. Overall ranking of the whole sample shows that emerging countries like Mexican, Brazilian and Indonesian firms are highly levered and Nigerian, Romanian and Sri Lankan firms are least levered countries in terms of long term debt to total asset ratios.

5.1 Firms' Specific Factors and Long Term Leverage

According to tax substitution hypothesis, expense such as depreciation and amortization works as substitute to interest expense and can effectively shelter income from taxes. Thus firms with large non-debt tax-shields are likely to be less levered than firms with fewer such shields. Trade off in line with tax substitution hypothesis expects that optimal level of leverage decreases as non debt tax shield increases. Our results conclude that long term leverage-non debt tax shield relationship is significantly negative only in Turkey. The same pattern is significantly positive in 07 countries (United States, Japan, Korea, India, Argentina, Sri Lanka and Romania). Hence we say that trade off is not widely validated as far as this particular pattern is concerned.

In regards to asset tangibility, trade-off expects financial leverage to have positive relationship with assets tangibility. This is because tangible assets can be pledged as a guarantee to reduce cost of financial distress and other agency cost of debt. However pecking order suggests that firms having more tangible assets face less information asymmetry. Thus equity for such firms is not difficult to rise. Therefore leverage-tangibility is expected to be negatively associated. Our results suggest that asset structure of firms influences long term leverage in a significant positive manner in 11 countries (UK, Japan, Korea, Canada, Australia, Germany, China, India, Malaysia, Thailand and Vietnam) irrespective of different economic blocks. The same relationship is significantly negative only in Argentina. Hence we argue that tradeoff framework is widely validated as par as leverage-tangibility relationship is concerned.

Tangible and human assets in unique firms are highly specialized. Therefore such firms are more sensitive to financial leverage because costs are high in case of financial distress (Titman and Wessels, 1988). Therefore in line with trade off, unique firms are expected to have lower financial leverage in their capital structures. But the results show that uniqueness of firms is negative and significantly associated with long term debt only in UK, Japan, Switzerland, Brazil, China and Pakistan. But the same relationship is significantly positive in Korea, Italy, Turkey, Thailand and Argentina. Hence there seems no consistent pattern about uniqueness based on trade off.

Generally larger firms have the ability to form diversified portfolios and lower their risk of bankruptcy. Based on lower risk of financial distress, trade off suggest positive leverage-size relationship. Our analysis shows that with exception to Nigerian firms, larger firms in all the countries are more levered than smaller firms. This particular pattern is robust in 23 countries. Thus we conclude that leverage-size relationship is widely validated under trade off.

According to trade-off theory if financial leverage increases beyond a certain level, the risk of financial distress increases and the benefit of tax shields diminish. Hence Trade-off predicts that increase in earnings volatility or business risk would push indebted firms into financial distress. Therefore firms having higher variations in their earnings or cash flows are expected to employ low financial leverage. However in this particular sense our findings are opposite to a larger extent. We found no country where firms significantly restrict long term borrowings. Rather found 8 (US, UK, Japan, South Korea, Canada, France, Poland and Bulgarian) out 27 countries, where firms significantly engage in aggressive long term borrowing when earning volatility is high. These results are in contradiction with the predictions of trade off theory. Hence we conclude that no significant evidence was found regarding business risk and long term leverage relationship under regarding trade off predictions.

Rajan and Zingales (1995) suggests that firms with high MB ratios have higher costs of bankruptcy. Therefore negative leverage-growth relationship is expected as per trade-off theory. In accordance with trade off, growth firms only in US, India and Mexico significantly restrict long term debt. However, South Korean, Brazilian, Chinese, Malaysian, Argentinean, Bulgarian and Vietnamese firms borrow significantly more long term debt when growth opportunities are high. A plausible explanation for positive leverage-growth relationship may that information asymmetry could be greater for growth firms or growth firms may not be able accumulate that much internal equity to finance growth. To avoid costs of information asymmetry firms may use less value-sensitive instrument like debt as Pecking order suggests. From these results we conclude that trade off framework is not the only or widely validated framework as far this particular observed pattern.

Highly profitable firms face low chances of financial distress than less or non-profitable counterparts. Hence based on trade-off theory profitable firms are expected to employ high level of long term leverage to shield their profits from corporate taxes and get higher tax advantages. But on the other hand, profitable firms are in good position to accumulate internal funds trough retained earnings and can utilized them when need arises. In line with Pecking order firms will use first its internally accumulated funds. Pecking order predicts that profitable firms make less usage of leverage. Our results suggest that regression coefficient of profitability (PROF) is negative in all the countries, and negative and robust in 21 countries. Thus we conclude to say that leverage-profitability pattern across 27 countries is consistent with pecking order and inconsistent with trade off.

Firms with more liquid assets face lower costs of financial distress because liquid assets can be liquidated easily without much discount. Therefore according to trade off highly liquid may afford higher financial leverage. On the other hand pecking order theory expects managers to accumulate liquid reserves using retained earnings to avoid costs of information asymmetry and issuing new capital. Hence liquid firms are expected to be less levered. In line with trade off, we found that liquidity is significant predictor of long term leverage only in three countries (Japan, China and Vietnam). However, in USA, Australia, France, Germany, Brazil, India, Indonesia, Malaysia, Poland, Pakistan, Argentina and Sri Lanka the same observed pattern is opposite and in accordance with pecking order. Hence we conclude that pecking order better and widely explain long term leverage-liquidity relation than trade off.

Mostly profitable and mature firms are expected to have higher dividend payouts than growing firms (Gaver & Gaver, 1993; Smith & Watts, 1992). As profitable firms are less vulnerable to financial distress thus according to trade off dividend paying firms are expected to afford more long term leverage. On the other hand pecking order expects dividend paying firms to be less levered. In line with pecking order, we found that dividend payout per share is negative and robust predictor of long term leverage in only 05 (Japan, Australia, Brazil, Pakistan and Argentina). Hence we conclude that no significant evidence regarding trade off was found.

Overall our findings widely validate our proposition H_4 with robust evidence in all countries irrespective of economic block. In a similar fashion we found no widely validated evidence about proposition H_7 in all countries irrespective of economic blocks. We found mixed evidence of H_1, H_2, H_3, H_5, H_6, H_8 and H_9.

5.2 Firms' Specific Factors and Short Term Leverage

Our findings regarding regression results to test the impact of 09 firm specific predictors of short term leverage are as follow.

Our regression results show that non debt tax shields have significant positive slopes in 04 countries (China, Indonesia, Turkey and Nigeria). The same relationship is significant negative only in Bulgaria. Thus we conclude that trade off prediction regarding non debt tax shields and short term leverage is only valid in Bulgaria and significantly contradictory in 4 countries (China, India, Indonesia and Turkey).

Results also show that short term leverage-tangibility relationship is significantly negative in 20 countries of the sample. In reference to this specific pattern we did not notice even a single case of trade off validation.

Regarding relationship between short term leverage and uniqueness, trade off prediction can be supported in 4 countries (Turkey, Thailand, Mexico and Nigeria) and contradicted in 04 countries (France, Italy, India and Romania).

Firms' size is robust predictor of short term debt only in 11 out of 27 countries. Trade off is supported in 6 (Japan, Korea, France, Italy, Indonesia, Pakistan,) countries. However, the same relationship is contradictory in 5 (Canada, Australia, Germany, India and South Africa) countries.

In reference to short term leverage and business risk relationship, we conclude that business risk significantly affect short term leverage only in 8 countries. We found that trade off is valid only in 2 (Malaysia and Bulgaria) countries where firms significantly restrict short term borrowings when earning volatility is high. The results for 6 (Japan, Australia, France, India, Thailand and Sri Lanka) countries are opposite to what trade off predicts. Hence we conclude that trade off validation regarding business risk and short term borrowing is very limited.

Trade off predicts that growth firms have high probability of financial distress than mature firms. Therefore such firms are expected to avoid higher financial leverage. We found these predictions are significantly valid in 7 (Japan, South Korea, Canada, Italy, China, Poland, Thailand) countries only. Switzerland is the only countries where this particular pattern is significantly opposite.

In line with trade off, profitability is only positive significant determinant of short term debt only in Bulgaria. Most of the countries reveal negative coefficients of profitability. Trade off widely fails to predict short term leverage-profitability relationship across our sample. Thus pecking order predictions are widely validated in this specific case.

We also conclude that short term leverage-liquidity relationship is negative and significant in all countries. This particular pattern widely contradicts trade off.

Finally we found that only in seven countries dividend payout significantly predict short term leverage. Firms only in United States and South Africa confirm trade off, exhibiting positive significant slope of dividend payout. This particular pattern is opposite in five countries contradicting trade off.

Overall our findings widely reject our propositions H_2 and H_8 with robust evidence in all countries irrespective of economic block. We found mixed evidence about propositions H_1, H_3, H_4, H_5, H_6, H_7 and H_9 about determinants of short term debt.

5.3 Country's Specific Factors and Average Long Term Leverage

In view of the importance of country characteristics and institutional set ups, we also tested the impact of 06 country specific variables on average long term debt across 03 economic blocks (developed, emerging and developing) countries of our sample. We found that only two institutional attributes significantly affect average long term leverage. Based on our results we conclude that fine law and order encourages firms to borrow more average long term leverage in developing block. The same relationship is opposite in emerging countries. The reason may be that developing countries are in the initial stage of improving legal environment to encourage economic activity. Similarly emerging countries may be more focused on creditors' protection. Similarly bond market encourages firms to use more average long term financial leverage in both emerging and developed countries. The possible reason may be bond market development make it easier for firms to access debt without any requirement for physical collateral (Rajan & Zingales, 2001). De Jong et al. (2008) suggest that bond market development increases firms' willingness and borrowing options. Finally, we did not found any significant impact of perceived corruption (H_{11}), economic freedom (H_{12}), banking sector development (H_{13}) and stock market development (H_{14}) in any economic block.

5.4 Conclusions

With reference to our research questions and objectives, this study has the following conclusions.

(1) We conclude that firms' profitability and size are the two most reliable and widely validated firm specific predictors of long term debt in all countries irrespective of economic blocks they belong. Profitability has negative impact on long term leverage in all the 27 countries. Size has positive impact on long term leverage in 26 countries. However observed pattern about profitability is consistent with pecking order and size pattern is consistent with trade off. This it is concluded that both observed patterns are not reconcilable under a single theoretical framework. Thus Myers (1984) is right to state that capital structure is a tougher puzzle than any other in corporate finance.

(2) Our study concludes that liquidity and assets structure are two most reliable and widely validated firm specific predictors of short term debt across all countries. Irrespective of economic block, higher liquidity in all the 27 countries is negatively associated with short term leverage. Similarly asset structure is negatively with short term debt ratios in 25 countries. Both the patterns are consistent with pecking order.

(3) We found that trade off is not widely validated across globe. We did not noticed even a single country where trade off explains all the significant predictors of debt ratios. However we found that pecking order explain most of significant observed patterns.

(4) We did not find any significant pattern that is associated with a particular block of countries.

(5) About country specific factors, we conclude that legal integrity and enforcement affects average long term leverage in a different fashion in developing and emerging countries. Therefore we conclude that a well in place legal system is not only helpful to protect creditors it also encourages borrowers. Besides legal system, bond market development is another significant and positive predictor of average long term borrowings in emerging and developed blocks of countries. The reason may be either due to availability of more borrowing options for firms or reduction in collateral requirement.

5.5 Policy Implications

A number of policy implications for corporate managers, financiers and policy makers, emancipate from our findings. Our findings show that both internal and external factors influence capital structure decisions. Therefore managers may focus on internal characteristics of firm, but should not ignore the external environment while deciding optimal capital structure.

Financiers can also help from our findings by studying the impact of different internal and external factors on firm's borrowings and risk taking behavior. This in turn can help in risk diversification.

Policy makers may focus on improvement of bond market to help firm's access external capital. Similarly favorable legislation may also be introduced to protect creditor's rights as well.

5.6 Future Research Direction

Our study leaves many points for future researchers as a possible extension of this study. Different corporate governance models like Anglo-American, German and Japanese models show a specific ownership pattern e.g. concentrated, family or disperse ownership. As the corporate governance models in all the sampled countries is not the same. Therefore we expect researchers to investigate the case by adding new variables that we could not include for example dispersion of both debt and equity structures, representation of board in terms of family shareholders or block holders. We could not include some important macroeconomic indicators such as off the balance sheet items, market related factors such as market equity premium and term structure of interest rate due to data and time constraints. We also believe that different accounting practices as pointed out by Rajan and Zingales (1995) should be adjusted in a more comprehensive way. A separate comparison of different countries using different accounting practices can also be carried out. Besides that a qualitative aspect of strategic thinking and planning of top management may also be included for improvement in future.

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