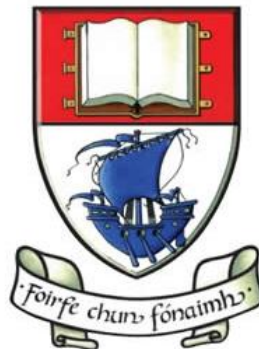


An Empirical Analysis of the Capital Structure of Emerging and Developed Economies over the period 2001-2010

By

Marion Hickey



Waterford Institute *of* Technology

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Research Supervisor: Mr. Cormac O' Keffe

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ABSTRACT

The theory of capital structure implies that companies establish what is often referred to as a target debt ratio, which is based on a mixture of tradeoffs between the costs and benefits of debt versus equity. The primary aim of this study is to determine the capital structure of companies from a global spectrum. Both emerging and developed economies are equally represented in the sample with twenty companies being selected from eight global stock markets in Australia, India, Japan, Mexico, South Africa, Turkey, United Kingdom and the United States.

An in-depth analysis of academic literature on the area of capital structure is provided with particular emphasis being placed on a number of underlying theories including the cost of capital theory discovered by Modigliani and Miller in 1958, agency cost theory established in 1976 by Jensen and Meckling, and pecking order theory developed by Myers in 1977. These theories are examined to establish their relevance in the capital structure of companies in today's economy.

The main objective of this study is to determine if there are differences in the capital structure of emerging and developed economies and across large and small cap companies. This is investigated through the use of regression analysis which utilises the following variables; gearing ratio, company size, ownership structure, company age, industry classification, turnover, and profit. In addition to this mean deviations are conducted on variables which represent industry classification and corporate tax rate.

The main results reported from this study are that in emerging economies the predominant factors which influence capital structure are ownership structure and industry classification, however, results for developed economies proved inconclusive. In the case of large cap companies industry classification is the main factor which impacts on a company's capital structure, however, in the case of small cap companies the predominant factor is size. Finally, the validity of the results in the model is verified through the use of out of sample data.

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ETHICAL DECLARATION

I declare that this dissertation is wholly my own work except where I have made explicit reference to the work of others. I have read *Doing a Dissertation in Business: Structured Masters Programmes Research Policy, Procedures and Guidelines* and hereby declare that this dissertation is in line with these requirements. I have discussed, agreed and complied with whatever confidentiality or anonymity terms of reference were deemed appropriate by those participating in the research.

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LIST OF ABBREVIATIONS AND ACRONYMS

ASX	Australian Securities Exchange
LSE	London Stock Exchange
ISE	Istanbul Stock Exchange
BMV	Bolsa Mexicana de Valores
JSE	Johannesburg Stock Exchange
NSE	National Stock Exchange of India Limited
NYSE	New York Stock Exchange
TSE	Tokyo Stock Exchange
FTSE	Financial Times Stock Exchange
JALSH	Johannesburg All Share Index
BSESN	Bombay Sensex Index
IPC	Indice de Precios y Cotizaciones
XU100	Istanbul Stock Exchange National 100 Index
AORD	Australian Securities Exchange All Ordinaries

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Chapter One

INTRODUCTION

1.1 Chapter Overview

The aim of this study is to investigate the capital structure of companies listed on global exchanges over the period 2001-2010. Due to the nature of the material covered in this paper no research questions are established, instead a number of analytical tools are used to address the primary research objective, which is to determine if the industry a company is consigned to impacts on the gearing of the organisation. Two additional objectives are (a) to determine if a company's economic classification influences the capital structure formation of the organisation, and (b) to determine the accuracy of the model used by assessing it against out-of-sample-data.

This chapter provides a background to the dissertation and covers the main rationale for undertaking such a study. In addition to this, data that is analysed and discussed in more depth in chapter three is discussed. Finally, the layout of the remainder of the dissertation is outlined.

1.2 Background

Organisations have both internal and external sources of finance available to them in order to finance their investments. Internal resources predominantly consist of retained earnings, while external sources consist of borrowings or the issue of new stock. Ultimately, firms have to choose between two options, the dividend choice and the capital structure choice. This study will focus on the latter.

The capital structure of companies has been at the forefront of academic research in finance for decades with three of the most predominant papers penned by Modigliani and Miller (1958) Jensen and Meckling (1976) and Myers (1984). The capital structure choices of organisations have become progressively more important over the course of the last decade, as organisations struggle to survive an intense economic environment. The economic downturn led to the revitalisation of academic literature in the area of corporate finance.

This sector of an organisation deals with the financial decisions encountered by a company and attempts to comprehend the diverse processes and variety of analytical techniques used in constructing complex judgements. It is concerned with the proficient and effectual administration of the capital of an organisation with the main aspiration being the realisation of the corporation's objectives. The primary objective of corporate finance executives is the distribution of limited resources between a number of competing divisions, with the scarce resource being capital. This entails preparing and controlling for the provision, administration, and supervision of the company's resources.

Corporate finance policies endeavour to control the prospective cash flows of an organisation, whereby the prime objective of executives is the augmentation of capital, while also ensuring that shareholders receive a yield on their investment. The role of the financial manager is a key component in every organisation, as they are responsible for the essential resources which enable operations to function without interruption. Debt and equity are two major sources of finance accessed by companies to raise sufficient funds to meet their operational needs. These sources need to be accurately balanced to ensure a trade off between risk and return for shareholders. Companies aim to have an optimal capital structure whereby debt and equity are proportioned in such a manner that shareholder wealth is maximised and the cost of capital to the company is minimised.

1.3 Rationale for study

Corporate financing is concerned with the acquirement and distribution of a corporation's finances and resources, with the primary objective being the maximisation of shareholder wealth. However, existing studies can only explain some aspects of the diversity and complications faced by companies when making such decisions. The present financial catastrophe is thought to be the worst economic crisis since the 1930s when the [Great Depression](#) struck. The consequences of this have included the failure of significant financial institutions, the rescuing of banks by national authorities, and declines in stock exchanges across the globe.

One of the primary motivations for undertaking this study is to examine the change in capital structure amongst a range of companies from diverse backgrounds and to determine if the gap between emerging and developing economies is closing in terms of corporate finance. One aim is to contribute to existing literature while also constructively testing the relevance of previous academic publications.

1.4 Sources of data

The primary objective of this study is to analyse the change in the capital structure of a range of global companies over a ten year period from 2001 to 2010. Research is carried out on eight countries with twenty companies being employed from the relevant stock market indices in each country. Primarily, data is sought from each of the respective exchanges and subsequently from the Thomson One Banker Database. Data obtained largely consists of annual statistics; however the current value of a number of variables is utilised as historical data is not available. This data is then compiled on an annual basis where a series of regressions are conducted.

The stock exchanges and indices chosen represent a global spectrum with every effort being made to ensure an adequate mix between emerging and developed economies¹.

The time frame under consideration takes a number of important financial market events into account such as September 11th 2001 and the global economic and financial crisis that commenced in 2008. Although such events may cause results to be skewed, they provide an accurate indication of the effect of external factors on a company's finances, while also ensuring that the sample used provides an unbiased view of the economic environment.

#

¹ Emerging: BSE (India), BMV (Mexico), JSE (South Africa), ISE (Turkey)- Developed: ASX (Australia), TSE (Japan), LSE (UK), NYSE (US)

1.5 Dissertation Structure

The remainder of this dissertation is structured as follows; chapter two provides a comprehensive overview of previous literature on capital structures, predominantly focusing on the primary theories and hypotheses that underlie corporate finance. Chapter three presents details on the data selected for examination, and the methodology utilised to address the research objectives. Chapter four outlines the main findings of the dissertation through the use of comprehensive regression analysis. Chapter five consists of an in-depth discussion on the main findings uncovered in the previous chapter and identifies their relevance to previous literature. Finally, chapter six concludes the dissertation with a synopsis of the key findings.

Chapter Two

LITERATURE REVIEW

2.1 Chapter Overview

This chapter commences by examining a number of theories underlying corporate finance. Following this, the relationship between country characteristics and corporate finance is examined, and then ownership composition and capital structure is considered followed by the effect of diversification on monetary structures. Finally, the different types of financial leverage employed by companies are overviewed and a number of financial leverage measures are inspected.

2.2 Sources of Finance

The key decision in corporate finance is the means by which a company finances its operations. Companies need to raise capital in an efficient manner in order to ensure that they have the capability to accept desirable projects and effectively run daily operations. The primary aim of a corporate finance manager is to raise an adequate level of funds as and when they are needed, at a minimal cost.

In order for managers to make knowledgeable choices, they must be aware of the different sources of finance available to them, predominantly internal and external finance. Internal finance consists of cash generated by a company which is not required to fund operations, liabilities, taxes, or replacement assets. This form of internal finance is more commonly referred to as retained earnings. An additional form of internal finance is savings which are generated by the efficient management of working capital. External sources of finance are generally classified as debt or equity. However, external finance can also be categorised by the time period under which it is repaid, that is short, medium, or long-term. It can also be classified as traded (ordinary shares) and non-traded (bank loans). Debt and equity underlie the fundamental structure of a company's capital structure.

Welch (2009) defines debt as a quantity of money owed to an individual or organisation for funds borrowed and equity as the ownership or residual interest in an asset after all associated costs with the asset have been settled.

2.3 Underlying theories

A number of theories underlie the concept of corporate finance; these include but are not limited to the cost of capital theory, pecking order theory, agency cost theory, trade-off theory, underinvestment hypothesis, market timing theory, and efficiency theory. Beginning in 1958, Franco Modigliani and Merton Miller developed a theory relating corporate finance, the cost of capital, and investment. In 1976, Jensen and Meckling examined the agency cost theory, followed by Myers in 1977 who discovered the underinvestment hypothesis before finding the pecking order theory in 1984.

2.3.1 Cost of Capital hypothesis

The cost of capital refers to the price a company must pay to finance its operations. It includes debt, retained earnings, common stock and preferred stock. It is determined by capital markets and is strongly linked to the level of risk associated with new investments, existing assets, and a company's capital structure. Modigliani and Miller (1958) identify that a company's investment and financing decisions are autonomous of their capital structure choices in perfect capital markets. They state that in particular markets the method used in setting a price is composed with the belief that taxes, liquidation fees, and asymmetric information are nonexistent. In proficient markets, a corporation's wealth is unchanged by the way the company is financed. This theory allows firms to adjust their weighted average cost of capital for varying levels of both commercial and monetary risk, and also allows them to create risk-adjusted costs of capital appropriate for any circumstances. However, this theory does not take a firm's source of capital or dividend policy into account as it considers it to be insignificant whether capital is raised by the issuance of debt or equity.

Conversely, subsequent research has disregarded the perfect capital market and examined how market implications and resistance impact on the corporate finance and investment structure of a company.

2.3.2 Pecking order hypothesis

Donaldson developed “the pecking order theory” in 1961, when examining the funding traditions of a selection of big companies. It was further developed by Myers in 1984 who proposed a “pecking order theory” in which financial resources follow a funding ladder. He claims that companies prioritise their sources of funding firstly by retained profits, followed by debt, and then equity.

Retained earnings do not attract issue costs and do not require any negotiations with financial institutions, and moreover they are readily available. The issuance of debt is preferred over that of equity as companies have the ability to raise small amounts of debt but this is not the case with equity. Also by issuing more debt companies do not encounter any potential ownership problems like those associated with the issuance of equity.

2.3.3 Agency Cost theory

In 1976 Jensen and Meckling initiated the discussion on a firm’s capital choices. They declare that financial choices are formed from the strong relationship between capital structure and management preferences, which forms the “agency cost theory”. This is based on the belief that shareholders and managers do not support the interests of each other.

Jensen and Meckling (1976) stress the significance of the “agency costs” of equity developed from the severance of ownership and loss of control of companies where directors and executives have a propensity to capitalise on their own profitability at the expense of the overall wealth of the firm.

They describe an agency affiliation as an agreement under which at least one individual (the principal) engages with another individual (the agent) to carry out some provision for their benefit which entails entrusting an element of control over decisions to the agent.

2.3.4 Trade- Off Theory

Myers (1984) explains how an organisation's optimum percentage of debt capital is typically determined by a trade off between the costs and benefits of borrowing, which results in holding the firm's assets and investment plans stable. The firm is believed to replace debt for equity, or equity for debt, until the firm's worth is maximized.

Myers (1984) highlights that if there were no alteration costs, and the "static trade off theory" is accurate, then each company's detected debt-to-value ratio should be its optimum ratio. Nonetheless, there are always expenses, and consequently lags, in adjusting to the optimal point. Companies are unable to instantly counteract the casual incidents that shift them away from the optimal position, so there ought to be several cross-sectional diffusions of real debt ratios across a section of companies with equivalent target ratios.

2.3.5 Underinvestment hypothesis

The underinvestment theory was developed by Myers in 1977. The proof behind the theory comes from the actions of managers operating in companies with high growth levels and hazardous debts. Myers (1977) finds that these circumstances may cause managers to abstain from investing in projects with positive net present values, which would be in the interest of shareholders, as the retribution from such projects would be partially accrued to debt holders; thereby resulting in an underinvestment problem.

The degree of underinvestment will be enhanced in companies with a high degree of growth prospects. Dang (2010) provides evidence in support of Myer's (1977) underinvestment theory. He outlines that firms with high growth potential decrease their level of leverage, however he finds that growth does not have an effect on a company's debt maturity structure. However, Jensen (1986) uncovers evidence that disputes the underinvestment theory. He establishes that leverage disheartens managers from overinvesting in risky projects, if the company has low growth potential and large open cash flows

Interestingly, Aivazian *et al.* conducted two studies on leverage in 2005 and obtained drastically different results. Aivazian *et al.* (2005a) identifies evidence in support of the overinvestment theory; they find that leverage has a considerably negative impact on investment. In contrast to this, Aivazian *et al.* (2005b) disclose support in favour of the Myers underinvestment theory in a subsequent study. They discover that debt maturity has an adverse effect on investment when leverage is controlled.

2.3.6 Market Timing Theory

Managers' interest in the market timing theory developed by Myers in 1984 has been revived in recent years. Baker and Wurgler (2002) describe the "market timing theory" as the snowballing result of previous efforts to time the market. The basis behind the theory is that directors and executives inspect existing market conditions for both types of leverage and make a decision on the type of capital to use based on these circumstances. However, if they feel that neither issuance option is suitable, they may perhaps postpone leverage. On the other hand, if present circumstances are particularly encouraging, resources may be increased despite the fact the company does not need these resources at the present time.

This theory does not seem to follow the conventions of previous academics; nonetheless it does imply that the returns achieved from holding stocks and the conditions in which a debt market operates play an imperative part in a business's preference when selecting their capital formation.

2.3.7 Efficiency Theory

Firm performance can also have an effect on the choice of capital structure that a company employs. There are two efficiency hypotheses that produce forecasts concerning the likely effect of company competence on the selection of capital structure. Under the “efficiency risk hypothesis”, competent organisations may prefer a higher debt to equity ratio as superior competence decreases the probable costs of liquidation and monetary distress. In contrast to this theory, the “franchise value hypothesis” states that companies with high efficiency levels may decide to reduce their debt to equity ratio to defend the economic fees arising from higher efficiency from the prospect of liquidation (Berger and Bonaccorsi di Patti, 2006).

2.4 Country Characteristics

A company’s capital structure is influenced by both firm-specific and country-specific factors. Country characteristics play a vital role in a firm’s decision concerning what form of leverage to pursue. This is the main reason why leverage may affect the tangibility of a firm in one country and not in another. According to De Jong *et al.* (2008) country characteristics also play a role in economies through their effect on firm specific factors. This process also differs across developed and emerging economies as well as between two developed countries and two emerging nations.

Capital structures are more likely to differ across advanced economies due to differences in organisational cultures and transnational procedures. Antoniou *et al.* (2008) and Marchica (2007) examine the leverage differences between UK and US companies. Antoniou *et al.* (2008) identify that US firms have higher leverage than their UK counterparts while Marchica (2007) outlines that US companies have longer debt maturity structures than those associated with UK companies. Antoniou *et al.* (2008) states that short term debt as a percentage of total debt on average within a year in the US is 22% while in the UK this figure is 46% as obtained by Dang (2010). The leverage structures adopted by UK companies are appropriate when investigating the underinvestment theory founded by Myers and the liquidity risk hypothesis developed by Diamond in the early 1990s.

Booth *et al.* (2001) and Fan *et al.* (2006) uncover that capital market development plays a major role in determining a company's choice of corporate structure. Booth *et al.* (2001) also discover that GDP and growth are also important factors to be considered, while Fan *et al.* (2006) also feel that the level of development in a country's banking system is important. Giannetti (2003) establishes that the inclusion of country-specific factors may not be imperative if the sample used only includes large listed corporations. She also ascertains that factors such as stock market development, legal enforcement and creditor protection, aspects omitted by other studies are significant.

Dang (2010) institutes support in favour of Myers' underinvestment theory but does not find evidence that firms curtail the maturity of their debt to ease underinvestment. This supports the theory developed by Diamond (1991 and 1993) that liquidity risk restricts the use of a short-range debt maturity policy.

2.5 Ownership composition and capital structure

Margaritis and Psillaki (2010) observe that the establishment of ownership and compositions of motivation effects have connotations with a firm's capital structure choice. They cite Grossman and Hart (1982) in their study who discover that external owners who own a large share of the company, have strong incentives to reduce managerial optimism, they may prefer to use debt as an authority instrument to control management's utilisation of privileges. When this occurs, these types of firms are more likely to have higher debt ratios, in any case up until the risk of bankruptcy may persuade them to lower debt. In contrast to this Friend and Lang (1988) report that the relationship between leverage and internal ownership may be negative where large ownership groups decide upon lower debt to protect their non-diversifiable human capital and wealth invested in the firm.

In addition to this Brailsford *et al.* (2002) identify that a non-linear relationship exists between leverage and managerial share ownership. They find that managers with a low shareholding tend to have high debt leverage but as they increase their shareholdings they seek to lessen their risk by reducing the level of debt, resulting in an agency conflict.

2.6 Diversification and capital structure

Both diversification and capital structure play an enormous part in business and financial environments. Diversification has a direct impact on the value of a company as it brings its own costs and benefits to a firm. Empirical studies, the most recent by Li and Li (2006) show that diversified firms should carry more debt than non-diversified firms. La Rocca *et al.* (2009) discover that overinvestment can take place if diversified firms opt for a low leverage structure. A number of studies have examined the theory that diversified companies need to have high leverage in order to maximise firm value.

The level of leverage carried also differs between firms who take part in related diversification and unrelated diversification. Firms who partake in unrelated diversification should presume more debt as correlation should not be a factor. When looking at the effect of diversification on resource formation the coinsurance effect must be examined. Lewellen (1971) states that this “deals with the reduction of operating risk due to the imperfect correlation between the different cash flows of a firm running diverse businesses”. The transactional cost approach is another element that affects the choice of capital structure a firm undertakes. This approach brings the theories of strategy and finance together, and regards debt and equity as alternative control structures. The diversification strategy employed by a firm is based on the excess level of unexploited assets in its possession. Williamson (1988) suggests that when using the transactional approach, companies should “use debt as a rule based governance structure and equity as a discretionary governance device”. For this reason debt should be used in funding non-specific assets and equity in funding specific assets.

Equity should be used to finance extremely precise assets, usually connected with related diversification, as these types of assets cannot be re-employed without problems whereas debt should be employed to finance general assets usually associated with unrelated diversification. Shleifer and Vishny (1992) outline the requirements of debt financing. They state that it involves a company making principal and interest imbursements, in conjunction with an agenda predetermined in a binding agreement; in the case of non-payment debt owners have the right to implement their pre-emptive claims against the company's assets.

2.7 Factors which influence financial leverage

Financial leverage occurs when a company finances a portion of its operations by debt, therefore if a firm does not issue any debt it is said to be an unlevered or all equity firm. A number of factors have been established throughout literature, particularly by Frank and Goyal (2009), which have an impact on a company's choice of leverage. These are primarily; profitability, firm size, growth, industry conditions, nature of assets, taxes, risk, stock market conditions, debt market conditions, and macroeconomic conditions. Table 2.1 below indicates the relationship which exists between the main underlying theories of corporate finance and the factors which actually determine a company's capital structure.

Table 2.1: Factors Which Affect Financial Leverage

Factor	Pecking order theory	Agency cost theory	Trade-off theory
Profitability	Negative	Positive	Negative
Firm Size	Negative	Positive	Positive
Growth	Positive	Negative	Negative
Industry conditions	Negative	Negative	Negative
Nature of assets	Positive	Positive	n/a
Taxes	Negative	n/a	Positive
Risk	Positive	n/a	Negative
Stock market conditions	Negative	n/a	Positive
Debt market conditions	Negative	n/a	Positive
Macroeconomic Conditions	Negative	Positive	n/a

Source: Author

These factors are outlined in more detail as follows;

2.7.1 Profitability

Companies with high profits encounter lower costs of financial anguish and generally find interest tax shields to be more worthwhile. Therefore, it is expected that companies of this nature use more debt due to the perception of tax and bankruptcy costs.

In addition to this Jensen (1986) stresses that the regulation provided by debt is more precious for profitable companies as these organisations are expected to encounter “severe free cash flow problems”.

However, the pecking order theory predicts that companies with high profits become less leveraged with time due to their tendency to use internal finance as their initial source of finance. Kayhan and Titman (2007) identify a negative relationship between profitability and leverage as companies inactively build up their revenues.

2.7.2 Firm Size

Large companies with a high degree of diversification tend to encounter lower levels of default risk. Furthermore, established firms with years of experience generally have strong positive reputations in leverage markets, particularly in debt markets and therefore encounter lower agency costs associated with debt. Trade off theory envisages that mature firms are more likely to have higher levels of their resources financed by debt, while the Pecking Order theory adds that older mature firms have better opportunities to finance their resources via retained earnings.

2.7.3 Growth

Managers operating in high growth companies can use the company’s escalation to their advantage by capitalising on the increased cash flows. According to Frank and Goyal (2009), growth amplifies the costs of monetary anguish, diminishes free cash flow difficulties, and intensifies the agency problems associated with debt. The trade off theory foresees that growth decreases leverage as companies place a bigger emphasis on stakeholder co-investment, whereas the pecking order theory identifies that those companies with high quantities of investment and whose profitability stays predetermined should accrue more debt over time.

2.7.4 Industry conditions

Leverage varies across a wide range of industries and this can be down to a number of reasons. One explanation is that managers decide on their company's type of leverage based on the leverage option undertaken by the median company in the industry (Flannery and Rangan, 2006). As firms in the same type of industry encounter similar obstacles which affect their financing decisions, there is a high probability that they will opt for similar financing sources. Trade off theory predicts that if the median firm in an industry has high growth levels, this should result in less debt being used by firms in this industry.

However, if the median company has high levels of debt this will impact on other companies in the industry. The industry has no significance under the pecking order theory as firms should choose to finance their resources from retained earnings.

2.7.5 Nature of Assets

The costs associated with financial distress are weakened for tangible assets, such as property and equipment, as outsiders can place a value on these much easier than they can with intangible assets such as goodwill. As well as this, it is harder for shareholders to replace high risk assets for low risk ones. Tangibility and debt generally tend to have a positive relationship as the costs related to monetary anguish are lessened and agency problems related to debt are also reduced. Therefore, companies who possess a large volume of intangible assets are likely to have low levels of debt. In contrast to this the pecking order theory predicts that firms with several tangible assets should have lower leverage ratios.

2.7.6 Taxes

DeAngelo and Masulis (1980) discover that company's non-debt tax shields are a substitute for the tax benefits of debt financing. A tax shield is the reduction in income taxes as a result of availing of an allowable tax reduction from taxable earnings. Watson and Head (2010) define a tax shield as a means of concealing profits from corporation tax. The value of this can be measured by discounting the value of potential tax savings induced through obtainable tax reliefs. As interest on debt is a tax-deductible expense, therefore if a company increases its level of debt, they are also creating a tax shield. This tax shield can then be used to save cash flows, which in turn increases the value of the company. As a tax shield gives rise to a tax saving arising from using debt as opposed to equity, it is obligatory to amend the cost of debt when evaluating it to the cost of equity. The most common tax shield adjustment involves an amendment in the weighted average cost of capital (WACC) calculations.

However these non-debt tax shields must be negatively related to leverage. According to the trade off theory, companies take advantage of higher tax shields by issuing higher volumes of debt when tax rates are high. Hackbarth *et al.* (2006) find that the tax benefit of debt evidently depends on the level of cash flows, which consequentially depends on whether the economy is in a period of contraction or expansion.

2.7.7 Risk

According to the trade off theory a high level of risk should result in lower volumes of debt for a company. However, Pecking order theory implies that companies with high risk levels should have high volumes of leverage. Therefore, companies with unstable resources and liquidity volumes are required to access external capital markets intermittently.

2.7.8 Supply-Side Factors

Companies rely on equity finance to support their operations when they have limited access to debt markets. According to Faulkender and Peterson (2006), companies with a debt rating are prone to have higher debt levels than those companies who are not rated, provided all other factors remain the same. Under the pecking order theory, in order for companies to obtain a credit rating they must reveal information to the credit rating agency, therefore such companies should use more equity and less debt as a source of finance. However, a decline in adverse selection risk increases the rate of recurrence with which the external capital market is accessed, resulting in an increase in debt.

2.7.9 Stock Market Conditions

Companies do not restructure their capital due to changes in stock market prices (Welch, 2004). Therefore, stock returns are important in determining corporate financial structures, where high stock returns should lead firms to issue equity rather than acquire debt. Market timing theory follows this belief and finds that managers actively time equity markets to take advantage of mispricing. Trade off theory predicts that high stock returns should cause book debt ratios to rise as low market debt ratios generally entice firms to issue more debt in an effort to reach an optimum position.

2.7.10 Debt Market Conditions

If inflation is expected to increase, the real value of tax deductions on debt will be higher (Taggart, 1985). Therefore, trade off theory implies that leverage and expected inflation have a positive relationship. The case is similar for market timing theory as managers issue debt when inflation is high relative to current interest rates, however some of this variation can be attributed to the exclusion of small firms in the study. According to Barry *et al.* (2008), companies increase their issuance of debt when present interest rates are low in comparison to past levels.

2.7.11 Macroeconomic Conditions

A company's capital structure is affected by changes in the macroeconomic environment. Recessions induced by a monetary contraction of the economy force the issuance of debt to become more prominent for large firms but do not have such an effect on the issuance of debt in smaller firms. According to Gertler and Gilchrist (1993) in times of economic growth and expansion stock prices increase, expected bankruptcy costs fall, taxable income rises and liquidity increases. During economic downturns agency problems are likely to increase as executives' prosperity decreases in comparison to that of shareholders.

However, agency problems should decrease if company profits have increased in recent times, as managers' wealth is not severely affected; therefore organisations can reduce the levels of debt issued. According to pecking order theory internal funds should increase in expansionary periods resulting in a decline in leverage.

2.8 Financial leverage measures

Frank and Goyal (2009) discover that when corporations choose to use debt as a source of finance, they are reappportioning a quantity of anticipated potential cash flows away from equity applicants in barter for real money. Frank and Goyal (2009) observe that the main methods of assessing a firm's leverage are; industry median leverage, tangibility, profits, company size, market-to-book assets ratio, and predicted inflation. These factors account for 27% of the variation in the way companies choose to raise finance.

Table 2.2: Financial Leverage Measures

<u>Factor</u>	<u>Description</u>
Industry median leverage	If the middle firm in the sector has high leverage, other firms in the industry are likely to follow suit
Tangibility	Firms with a high proportion of physical assets are likely to have high leverage
Profits	Companies with high revenues are inclined to have low leverage
Company size	Companies with considerable assets are inclined to have high leverage
Market-to-book assets ratio	Companies with a high market-to book ratio are prone to low leverage
Predicted inflation	If inflation is anticipated to be elevated, firms will generally have high leverage

Source: Author

Chapter Three

RESEARCH METHODOLOGY

3.1 Chapter Overview

This chapter delineates the rationale for this study while also outlining the research design utilised by distinguishing between qualitative and quantitative research. It endeavours to provide an overview of the data used in the study and a thorough explanation of the research methodology undertaken.

3.2 Purpose of the study

The purpose of this study is to examine if there is a significant difference in the methods used by corporations to finance their operations across countries, with emphasis being placed on the divergence between emerging and developed economies. The countries being appraised are; Australia, India, Japan, South Africa, Mexico, Turkey, UK, and USA with companies being selected from the appropriate stock market indices by order of their market capitalisation. Table 3.1 below summarises the exchanges and indices utilised in the study.

The study endeavours that the countries chosen represent a global spectrum. Initially, the UK and the US were not included in this study, as they have been consistently used in academic research over the years. However, due to the position of both as global powerhouses in the financial world, it was felt that there would have been a void in the study due to their absence and therefore they have been included.

Table 3.1: Overview of Countries				
Country	Emerging/Developed	Continent	Exchange	Index
Australia	Developed	Australia	ASX	AORD
India	Emerging	Asia	BSE	BSE SENSEX
Japan	Developed	Asia	TSE	Nikkei 225
Mexico	Emerging	N. America	BMV	IPC Index
South Africa	Emerging	Africa	JSE	JALSH
Turkey	Emerging	Asia	ISE	XU100
UK	Developed	Europe	LSE	FTSE 100
US	Developed	North America	NYSE	NYSE Composite

3.3 Research Objectives

In chapter one, it was stated that due to the nature of the material covered in this paper, no research questions are established, instead a number of analytical tools are used to address the research objectives. Saunders *et al.* (2003), states that it is vital to establish intelligible research objectives at the commencement of the research process in order for accurate conclusions to be uncovered from the most important research data. Hence, the following research objectives were established;

Objective 1: To establish the capital structure of a diverse range of companies in Australia, India, Japan, Mexico, South Africa, Turkey, UK, and US, and to determine if there are deviations across industries.

Hovakimian *et al.* (2001), uncover evidence consistent with organisations actively varying their debt ratios, to ensure that they are corresponding with the industry average. Companies in the same industry are confronted with similar obstacles that influence their monetary choices. Comparable to this, Flannery and Rangan (2009) find that theory implies that executives regulate their company's leverage so that it is in harmony with the industry mean and this is then used as an emissary for the firm's financial configuration.

Objective 2: To determine if a company's economic classification influences the capital structure formation of the organisation.

De Jong *et al.* (2008) discover that the capital structure process deviates across the globe in terms of developed and emerging nations. This process also diverges between two developed economies and a pair of emerging nations. Generally, the capital structure of companies in developed economies is likely to differ due to disparities in the organisational culture and transnational practices. Prior studies by Antoniou *et al.* (2008) and Marchica (2007) have referred to the gearing ratios of UK and US based organisations. However, this research was conducted pre-2009 and therefore would not take the impact of the economic downturn on a company's capital structure into account.

Objective 3: To determine if the model developed is applicable to all companies through the use of out of sample data.

Hong *et al.* (2004) find that a model that fits historical data well is not guaranteed to have better out-of-sample performance.

Objective one leads to a number of variables to be examined in order to determine if they have a positive/negative or no impact on a company's capital structure. These

variables are company size, company age, ownership structure, industry classification, turnover, and profit.

3.4 Quantitative versus Qualitative research

Empirical studies can utilise two types of research, qualitative and quantitative. Punch (2005) distinguishes between these research types as follows; quantitative research involves the use of data which consists of numbers whereas qualitative research is based on data which is not in numerical form. Qualitative research is conducted using focus groups and interviews, whereas quantitative investigations necessitate the collection and analysis of data using statistical programs such as Excel, SPSS, or RATS.

For the purposes of this study quantitative research will be adopted as it involves collecting, quantifying and analysing financial data. Byram and Bell (2007) find that quantitative research strengthens the correlation between theory and research findings and is the most appropriate method for testing new assumptions and theories.

3.5 Data

Data can be collected using both primary and secondary sources. This study will involve primary research using secondary data. Secondary information is the re-analysis of data collected by someone else for a disparate function (Sekaran and Bougie, 2010). Jankowicz (2000) citing Miles and Huberman (1994) and Robson (1993), stresses that this type of investigation entails distinguishing variables that are important to the study from those that are less significant and can be omitted. It also involves examining the relevance of each variable, recognising the relationship linking the variables, and identifying the informal construction of the variables.

The indices were chosen to incorporate a wide range of markets to ensure that a global presence would be represented. A number of indices were eliminated from the study as they were not established for a significant time period, such as the Singapore Stock Exchange, which was not established until 1999. Each of the 160 companies is chosen using the relevant stock market indices as indicated in Table 3.1 above. These

were selected based on the respective market capitalisation of each company, with the top ten and bottom ten being selected from each index. As the study is being conducted for a ten-year period, companies with a listing date post-2000 were eliminated from the study. Data on each company relating to their incorporation date was sought from the relevant exchanges and where applicable from the individual companies. This will be used to establish the age of each company and to determine if the capital structure of mature companies differs from that of younger organisations.

The remaining variables are obtained from the Thomson One Banker Database. Thomson One Banker-analytics provides international data on significant economic statistics, important financials and earnings evaluations for companies, in addition to real-time market data and stock price quotes from a manifold of sources, namely: Thomson Financial, Worldscope, First Call, DataStream, Extel, and Disclosure combined with sophisticated filtering and screening resources. The key information obtained is turnover, profit, ownership structure and the gearing of each company for the ten year period, where gearing represents the dependent variable.

The gearing ratio is calculated as:

$$\frac{\text{Total Liabilities}}{\text{Shareholders' Equity}^3}$$

The remaining variables make up the independent variables. The construction of these variables is outlined in Table 3.2 below.

³ Shareholders Equity = Minority Interest + Preferred Stock + Common Equity + Retained Earnings

Table 3.2: Construction of Independent Variables	
Independent Variable	Constructed
Industry	Each company is sorted into their respective classifications as outlined in the Thompson One Banker Database. In total there are eleven industry classifications ⁴ in the sample and these are numbered accordingly from one to eleven
Size	Market Capitalisation
Age	2011 less Year of Incorporation
Ownership	Number of Mutual funds
Turnover	Financial Statements
Profit	Financial Statements
Tax Rate	Taken from country in which each company is listed

Source: Author

3.6 Regression Analysis

A number of regression techniques will be used to analyse the data from the eight countries. The data will then be sub-divided into a number of categories in order to carry out regressions. Initially, each country will be sub-divided according to the size of the companies in each nation. These will be split into two groups; large-cap companies and small-cap companies. The market capitalisations of each of the large companies are divided by one million, while the gearing for each company is multiplied by 100. This is to ensure that all variables are presented in similar

⁴ Consumer Discretionary, Consumer Staples, Diversified, Energy, Financials, Health, Industrials, Materials, Technology, Telecommunication Services, Utilities

numerical values and interpretations are more comprehensible. The purpose of this is to determine if there are differences in the capital structure of large and small companies within the same economy. Following, this the data will be sub-divided into four groups: (1) large-cap companies from developed economies, (2) large-cap companies from emerging economies, (3) small-cap companies from developed economies, and (4) small-cap companies from emerging economies. At this stage the values for market capitalisation, turnover and profit will be converted to US dollars. This sub group will be used to satisfy objective two which is to determine if capital structure deviates between companies from emerging and developed economies. For each of the aforementioned sub-groups; ownership structure, age, industry, turnover, and profit will be added to the regression equation, one at a time, to measure the marginal impact of adding each variable. When all variables are included the regression equation will be:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu$$

In regression analysis, the statistical significance of the coefficients is determined by examining the *p values*, *t-stats* and calculating the R^2 of the regression equation. *P-values* indicate the significance of the regression equation, where *p-values* greater than 0.05 are not statistically significant and *p-values* less than 0.05 are statistically significant. *T-stats* indicate the significance of the regression equation where *t-stats* greater than 2 are statistically significant and *t-stats* less than 2 are not statistically significant. R^2 represents the proportion of the variation in *y* around its mean that is associated with the variation in *x* around their respective means; put simply R^2 measures the level of fit in the regression equation.

As the variable for the industry factor has to be reconstructed for the regression, it may not be statistically significant. Therefore, the industry variable will also be tested using the mean, median, and standard deviation.

- The mean is the average of each of the sub-divided groups. It is considered the simplest measure of location of a distribution (Koop, 2009).
- The median represents the middle value as it separates the sample into two equal halves.

- The standard deviation measures how disperse the data set is in relation to the mean. The spread in the data set is an indicator of the level of dispersion among the variables.

This variable will be examined for the ten year period to determine if the sector a company is consigned to causes the mean of each industry to deviate from one another. This analysis will also be conducted for the tax variable from 2001-2010. In addition to this, the stock market conditions over the ten year period will be measured by calculating the change in price of each index on an annual basis.

Finally, to test the validity of the regression model it will be evaluated using out of sample data. This will involve collecting data from four countries which have not been used in the main regression analysis. The countries utilised will be Argentina, Canada, China, and France.

As all variables are expressed in the currency of the country where they are listed, they are converted to US dollars to ensure a common currency exists, in order to facilitate comparisons of similar variables. As market capitalisation is only represented by the current time period it is converted at the present rate⁵. Both turnover and profit are converted to US dollars using the relevant exchange rate at the end of each year over the ten year period.

3.7 Possible problems

⁵ Exchange rates for market capitalisation: US/AUD (1.08522), US/INR (0.02255), US/JPY (0.0127316), US/MXN (0.0859329), US/ZAR (0.147609), US/TRY (0.588841), US/GBP (1.63007)

It is necessary when carrying out this type of research to be conscious of potential problems which may be encountered when conducting regressions. The internal validity of regression analysis can suffer from three dominant problems; (1) omitted variable bias, (2) outliers, and (3) multicollinearity.

3.7.1 Omitted variable bias

Koop (2009) states that if an explanatory variable is omitted from a regression in which it should be present, and if the variable that is omitted is correlated with the variables which are included, then the coefficients of the variables which have been included will be biased. It is important to include a sufficient number of explanatory variables in the regression while not including too many as not to affect the accuracy of the estimation of the coefficients. It is also imperative not to include too many explanatory variables to start off with in order to remove any statistically insignificant variables as a means to improve the regression. If it is established that a variable has been omitted, it is imperative that every effort is made to correct the error. Given the number of factors which contribute to a company's capital structure it is imperative that this assumption is treated with extreme care.

3.7.2 Outliers

The standard deviation is one of the most common and important descriptive statistics in regression analysis. One of its benefits is the identification of outliers. An outlier is an extreme observation whereby points typically deviate from the standard deviation by three or four standard deviates. The principal motive in detecting the presence of outliers is that they have the potential to have a strong influence on the estimates of the parameters of a model that is being fitted to the data. Outliers can distort the results and cause the regression to be biased as they can pull or push the regression line in one direction which could lead to mistaken conclusions and inaccurate predictions.

3.7.3 Multicollinearity

Multicollinearity is a statistical problem which occurs if some or all of the descriptive variables are highly correlated with each other. If this predicament arises, it results in the regression model having difficulty elucidating which explanatory variable is influencing the dependent variable. Multicollinearity can be identified through low t-statistics and high p-values. Koop (2009) finds that in some extreme cases, it is possible to find that all the coefficients are insignificant using t-statistics, while the R^2 is large and significant. In essence this means that the explanatory variables have a great deal of explanatory power but multicollinearity makes it insurmountable for the regression to decide which explanatory variables are providing the elucidation.

To determine if any of the variables are correlated with each other a correlation matrix will be constructed. A correlation matrix is a table of all possible correlation coefficients between a set of variables. As a rule of thumb, if two variables have a coefficient greater than 0.5 in the matrix they are deemed to be correlated with each other.

Following this a Variance Inflation Factor (VIF) test will be carried out to test the sample for multicollinearity. If the VIF for the explanatory variable is greater than five, it indicates that multicollinearity is present in the sample.

3.8 Limitations

One of the limitations of this study is the number of countries used in the sample, given that they all employ diverse currencies. Although all of the currencies are converted to US dollars at the end of each respective year in the sample, there may be some discrepancies due to economic events that may cause one currency to fluctuate against the US dollar at a particular point in time.

A second limitation is the different legal requirements that may be in place in one of the countries in the sample and not in the others. In addition to this, the level of regulation in nations across the globe has increased in recent years which may impact on a company's capital structure decisions.

The third limitation is that not all of the variables used are measurable in their natural form. In this study the industry variable has to be restructured in a numerical format in order for a regression analysis to be conducted.

Finally, as a number of companies have negative gearing ratios, in addition to having an ownership structure that consists of zero mutual funds, these companies have to be omitted from the sample as they causes the R^2 to be inflated which gives the impression that the regression has a stronger fit than what is actually present.

3.9 Chapter Summary

This chapter outlined the methodology that will be employed to collect and analyse the primary data. In addition to this the research objectives and sources of data collection were outlined. This chapter also addressed how these research objectives will be analysed through a number of varying techniques and models.

Chapter Four

RESEARCH FINDINGS

4.1 Chapter Overview

This chapter provides a comprehensive overview of the main findings of this study which were assembled by means of the primary research methods as outlined in chapter three. The main findings integrated into this section are a tabulated outline of the effect of a company's size on its gearing on a country by country basis, a graphical representation of mean deviation both by industry classification and tax rate. The analysis of these findings is presented in tables, text, graphs, and figures according to which is most appropriate to the relevant data set. Data is predominantly obtained from the Thompson One Banker database, in addition to the stock exchanges outlined in chapter one and the Deloitte International Tax Source (DITS) website.

4.2 Country Analysis

This section provides a breakdown of the regression results from each country which are sub-divided into large and small cap companies.

4.2.1 Australia

Table 4.1 presents the results of the regression analysis from Australian companies with large market capitalisations. At the outset, the regression does not have a strong overall fit with an R^2 of 0.0374 but this increases to 0.8589 when the additional variables are included. Due to the high number of small cap countries with negative gearing values and corresponding ownership structures of zero, there was not significant data available to run a regression for the Australian data set.

Table 4.1: Overview of Regression Results from Australian Large Cap Companies		
Coefficient	T-stat	Variable added
Industry	-2.44, -3.29, -3.11	Industry, Turnover, Profit

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.2 Correlation Coefficient Australian Large Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	0.1935	1					
Ownership	0.0712	0.8355	1				
Age	0.5485	0.3547	0.4018	1			
Industry	-0.7705	0.1099	0.2592	-0.3357	1		
Turnover	-0.1342	0.3396	0.2688	-0.0568	-0.1583	1	
Profit	-0.1630	0.5447	0.6674	-0.0973	0.2670	0.6096	1

It is evident from the correlation matrix that correlation is present between size and ownership, size and profit, ownership and profit, and turnover and profit as there values exceed 0.5. To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is not a presence of multicollinearity in the regression. This can be seen due to the level of VIF being 3.6926 which is notably lower than the value of five which indicates a high level of multicollinearity

4.2.2 India

Table 4.3 presents the results of the regression analysis from Indian companies with large and small market capitalisations respectively. In the case of large cap companies, the highest R^2 attainable is 0.9260, while for small cap companies the resulting R^2 is 0.9730. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.3 below:

Table 4.3: Overview of Regression Results from Indian Large and Small Cap Companies					
Indian Large Cap Companies			Indian Small Cap Companies		
Coefficient	T-stat	Variable added	Coefficient	T-stat	Variable added
Industry	-2.81	Industry	Age	-2.60	Age
				2.47	Industry
Size	-2.62		Size	2.27	
Industry	-3.89	Turnover	Age	-3.02	Turnover
Turnover	3.43		Industry	-2.54	
			Turnover	4.91	
Industry	-3.27	Profit	Industry	-2.33	Profit
			Turnover	5.31	

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.4 Correlation Matrix Indian Large Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.3308	1					
Ownership	0.0924	0.2204	1				
Age	-0.2217	-0.2053	-0.4476	1			
Industry	-0.8147	0.3884	-0.2821	0.2624	1		
Turnover	0.1164	0.8055	0.1965	-0.1545	0.1815	1	
Profit	-0.1693	0.9473	0.1329	-0.2180	0.3832	0.9167	1

The correlation matrix implies that there is a strong correlation between size and turnover, size and profit, and turnover and profit as their coefficients are greater than 0.5 in the matrix above.

Table 4.5 Correlation Matrix Indian Small Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.2748	1					
Ownership	0.4734	-0.7922	1				
Age	-0.7954	0.3106	-0.4867	1			
Industry	0.2601	0.3628	-0.0247	-0.4763	1		
Turnover	0.8746	-0.5513	0.7174	-0.7068	0.2575	1	
Profit	-0.4883	-0.3054	-0.1142	0.6539	-0.9377	-0.3938	1

From observing the correlation matrix, it is clear that there is a strong correlation between size and ownership, size and turnover, ownership and turnover, age and profit, and industry and profit as there correlated values are greater than 0.5.

To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is a very high presence of multicollinearity in the regressions for both Indian large and small cap companies. This can be seen due to the level of VIF being 19.6077 for large cap companies and 11.1149 for small cap companies which is remarkably higher than the value of five which indicates a high level of multicollinearity.

4.2.4 Japan

Table 4.6 presents the results of the regression analysis from Japanese companies with small market capitalisations. In the case of large cap companies, the highest R^2 attainable is 0.5145, while for small cap companies the resulting R^2 is 0.9366. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.6 below. At this confidence level none of the coefficients for Japanese large cap companies are statistically significant with all of the t-stats being under two in absolute terms.

Table 4.6: Overview of Regression Results from Japanese Small Cap Companies		
Coefficient	T-stat	Variable added
Industry	-2.48	Turnover
Turnover	5.88	
Turnover	3.57	Profit

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.7 Correlation Matrix Japanese Large Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.2242	1					
Ownership	-0.5103	0.5798	1				
Age	-0.1520	0.2339	0.6593	1			
Industry	0.1272	-0.1122	-0.3205	-0.7623	1		
Turnover	-0.0606	0.8516	0.3883	0.2375	-0.2739	1	
Profit	-0.3466	0.3311	0.1743	-0.4670	0.6065	0.2108	1

It is apparent from examining the correlation matrix that a number of variables are highly correlated. These are size and ownership, size and turnover, ownership and age, age and industry, and industry and profit as their values are larger than five

Table 4.8 Correlation Matrix Japanese Small Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	0.4224	1					
Ownership	-0.0961	0.5005	1				
Age	-0.2662	-0.5288	-0.3338	1			
Industry	0.3966	0.6770	0.2529	-0.2415	1		
Turnover	0.8834	0.3197	-0.2581	-0.0630	0.5887	1	
Profit	0.1729	-0.2449	0.2661	0.3040	-0.2783	0.0383	1

It can be seen from the correlation matrix that a number of variables are correlated with each other; size and ownership, size and age, size and industry, and industry and turnover.

To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is a high presence of multicollinearity in the regression for large cap companies but not for small cap companies. This can be seen due to the level of VIF being 6.3302 and 3.2772 respectively. The figure for large cap companies is slightly higher than the value of five which indicates a high level of multicollinearity, while the figure for small cap companies is lower than this number.

4.2.5 Mexico

Table 4.9 presents the results of the regression analysis from Mexican companies with large market capitalisations. In the case of large cap companies, the highest R^2 attainable is 0.6508, while for small cap companies the resulting R^2 is 0.6420. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.9 below. At this confidence level none of the coefficients for Mexican small cap companies are statistically significant with all of the t-stats being under two in absolute terms.

Table 4.9: Overview of Regression Results from Mexican Large Cap Companies		
Coefficient	T-stat	Variable added
Turnover	5.88	Turnover

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.10 Correlation Matrix Mexican Large Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.3741	1					
Ownership	-0.4776	0.7412	1				
Age	0.1599	-0.0178	-0.2685	1			
Industry	-0.0866	-0.1896	0.0083	0.5456	1		
Turnover	-0.4472	0.9199	0.5710	0.2787	0.0029	1	
Profit	-0.4005	0.3816	0.3471	0.3628	0.2332	0.5498	1

From analysing table 4.10 it is apparent that there is correlation present between size and ownership, size and turnover, ownership and turnover, age and industry, and turnover and profit.

Table 4.11 Correlation Matrix Mexican Small Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.1554	1					
Ownership	-0.2255	0.6751	1				
Age	-0.1936	-0.1351	0.3417	1			
Industry	-0.5084	-0.1785	-0.2604	0.0717	1		
Turnover	-0.3208	0.7775	0.8912	0.3533	-0.2594	1	
Profit	-0.3881	-0.1011	0.4190	0.6717	0.2255	0.4484	1

From observing the correlation matrix in table 4.11 above, it is clear that a number of variables are correlated with each other; size and ownership, size and turnover, ownership and turnover, and, age and profit

To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is a very high presence of multicollinearity in the regressions for both Mexican large and small cap companies. This can be seen due to the level of VIF being 29.8673 for large cap companies and 15.9928 for small cap companies which is significantly higher than the value of five which indicates a high level of multicollinearity.

4.2.6 South Africa

Table 4.12 presents the results of the regression analysis from South African companies with large and small market capitalisations respectively. In the case of large cap companies, the highest R^2 attainable is 0.9222, while for small cap companies the resulting R^2 is 0.9551. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.12 below:

Table 4.12: Overview of Regression Results from South African Large and Small Cap Companies					
South African Large Cap Companies			South African Small Cap Companies		
Coefficient	T-stat	Variable added	Coefficient	T-stat	Variable added
Industry	-5.82	Industry		3.26	Size
	-2.55	Turnover		3.26	Ownership
	-2.28	Profit	Size	2.84	Age
				2.62	Industry
				3.53	Turnover

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.13 Correlation Matrix South African Large Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.4866	1					
Ownership	-0.5702	0.7892	1				
Age	0.1951	-0.3613	-0.2865	1			
Industry	-0.9128	0.7385	0.7612	-0.2866	1		
Turnover	0.1481	0.6629	0.4797	0.0942	0.1303	1	
Profit	-0.1067	0.8666	0.4789	-0.4067	0.3730	0.7654	1

From analysing table 4.13 it is apparent that a number of the variables are correlated with each other; size and ownership, size and industry, size and turnover, size and profit, ownership and industry, and turnover and profit as values are in excess of 0.5

Table 4.14 Correlation Matrix South African Small Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	0.7688	1					
Ownership	-0.0806	0.3464	1				
Age	0.0831	-0.1551	-0.4407	1			
Industry	-0.3220	0.1589	0.6614	-0.5617	1		
Turnover	-0.4184	-0.2245	-0.2844	0.2785	-0.2824	1	
Profit	-0.6446	-0.2822	0.1261	0.4394	0.0846	0.7147	1

From examining table 4.14 it is noticeable that there is correlation between a number of variables in the regression; ownership and industry, age and industry, and turnover and profit.

To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is a high presence of multicollinearity in the regression for large cap companies but not for small cap companies. This can be seen due to the level of VIF being 49.9357 and 2.0223 respectively. The figure for large cap companies is radically higher than the value of five which indicates a high level of multicollinearity, while the figure for small cap companies is lower than this number.

4.2.7 Turkey

Table 4.15 presents the results of the regression analysis from Turkish companies with large and small market capitalisations respectively. In the case of large cap companies, the highest R^2 attainable is 0.9345, while for small cap companies the resulting R^2 is 0.6692. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.15 below:

Table 4.15: Overview of Regression Results from Turkish Large and Small Cap Companies					
Turkish Large Cap Companies			Turkish Small Cap Companies		
Coefficient	T-stat	Variable added	Coefficient	T-stat	Variable added
Size	-3.52	Profit	Size	2.50	Ownership
Age	-2.45			2.37	Age
Industry	-3.07			2.10	Industry
Profit	4.40				

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.16 Correlation Matrix Turkish Large Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	0.3396	1					
Ownership	-0.0399	0.6545	1				
Age	0.3437	0.4822	0.3753	1			
Industry	-0.6902	-0.4021	-0.0079	-0.6194	1		
Turnover	-0.2583	-0.1058	0.1712	0.3683	0.1706	1	
Profit	0.5168	0.9492	0.6653	0.5906	-0.4554	-0.1053	1

Table 4.16 indicates that a number of variables are correlated with each other; size and ownership, size and profit, ownership and profit, age and industry, and age and profit.

Table 4.17 Correlation Matrix Turkish Small Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	0.4807	1					
Ownership	-0.0516	0.6612	1				
Age	-0.2530	0.4946	0.8303	1			
Industry	0.2266	-0.0704	-0.3101	-0.3299	1		
Turnover	0.2170	0.6568	0.4807	0.3944	-0.1079	1	
Profit	-0.2066	0.5353	0.6804	0.6207	-0.1519	0.6676	1

From observing the data in table 4.17 it is clear that a number of variables are correlated with each other; size and ownership, size and turnover, size and profit, ownership and age, ownership and profit, age and profit, and turnover and profit.

To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is a high presence of multicollinearity in the regression for large cap companies but not for small cap companies. This can be seen due to the level of VIF being 12.0421 and 2.6168 respectively. The figure for large cap companies is somewhat higher than the value of five which indicates a high level of multicollinearity, while the figure for small cap companies is lower than this number.

4.2.8 UK

Table 4.18 presents the results of the regression analysis from UK companies with large market capitalisations. In the case of large cap companies, the highest R^2 attainable is 0.8326, while for small cap companies the resulting R^2 is 0.6118. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.18 below. At this confidence level none of the coefficients for UK small cap companies are statistically significant with all of the t-stats being under two in absolute terms.

Table 4.18: Overview of Regression Results from UK Large Cap Companies		
Coefficient	T-stat	Variable added
Size	2.67	Size
	2.56	Ownership
	2.35	Age
Turnover	-2.31	Turnover

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.19 Correlation Matrix UK Large Cap Companies							
	Gearing	Size	Ownership	Age	Industry	Turnover	Profit
Gearing	1						
Size	0.6862	1					
Ownership	0.0722	-0.0796	1				
Age	0.1133	0.1452	0.0746	1			
Industry	-0.5775	-0.6563	0.1806	-0.2714	1		
Turnover	-0.2398	0.1613	-0.5311	-0.2732	-0.4064	1	
Profit	-0.1933	0.1983	-0.5155	-0.2786	-0.4320	0.9968	1

The correlation matrix presented in table 4.19 above portrays the level of correlation between the variables in the regression. In this case size and industry ownership and turnover, ownership and profit, and turnover and profit are correlated with each other.

Table 4.20 Correlation Matrix UK Small Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.7207	1					
Ownership	-0.2835	0.1842	1				
Age	-0.3820	0.7814	0.0050	1			
Industry	-0.3666	0.8089	-0.3227	0.8987	1		
Turnover	0.9532	-0.6377	0.0051	-0.3654	-0.4291	1	
Profit	-0.9930	0.7108	0.3895	0.3839	0.3204	-0.9163	1

It is evident from the correlation matrix that a number of the variables are correlated with each other; size and age, size and industry, size and turnover, size and profit, age and industry, and turnover and profit.

To test for the presence of multicollinearity a VIF test is carried out for large cap companies. From this it can be verified that there is not a high presence of multicollinearity in the regression. This can be seen due to the level of VIF being 2.0461 which is clearly lower than the value of five which indicates a high level of multicollinearity. A VIF test to verify if multicollinearity is present in small cap companies is not carried out as the number of rows and columns in the data set are the same making the regression invalid.

4.2.9 US

Table 4.21 presents the results of the regression analysis from US companies with large market capitalisations. In the case of large cap companies, the highest R^2 attainable is 0.7927, while for small cap companies the resulting R^2 is 0.3612. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.18 below. At this confidence level none of the coefficients for US small cap companies are statistically significant with all of the t-stats being under two in absolute terms.

Table 4.21: Overview of Regression Results from US Large Cap Companies		
Coefficient	T-stat	Variable added
	-2.05	Industry
Industry	-2.07	Turnover
	-2.35	Profit

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.22 Correlation Matrix US Large Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.3138	1					
Ownership	0.2543	0.0855	1				
Age	0.1132	0.2564	0.7171	1			
Industry	-0.5421	-0.0217	0.1672	0.0233	1		
Turnover	-0.1712	0.4813	-0.3176	-0.3691	-0.3824	1	
Profit	-0.0776	0.7862	-0.1474	-0.1617	-0.0437	0.5803	1

The correlation matrix in table 4.22 indicates that a number of variables are correlated with each other; size and profit, ownership and age, and turnover and profit.

Table 4.23 Correlation Matrix US Small Cap Companies							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	0.4056	1					
Ownership	-0.2026	-0.4644	1				
Age	-0.2261	-0.5628	0.7523	1			
Industry	-0.2409	-0.4678	0.1959	0.0103	1		
Turnover	-0.3244	-0.5190	0.7137	0.2325	0.5854	1	
Profit	-0.3720	-0.4940	0.7454	0.2839	0.5419	0.9286	1

Table 4.23 depicts the level of correlation between the variables in the regression. In the correlation matrix above the variables that are correlated are; size and age, size and turnover, ownership and age, ownership and turnover, ownership and profit, and turnover and profit.

To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is a high presence of multicollinearity in the regression for large cap companies but not for small cap companies. This can be seen due to the level of VIF being 5.6237 and 3.8938 respectively. The figure for large cap companies is slightly higher than the value of five which indicates a high level of multicollinearity, while the figure for small cap companies is just under the threshold.

4.3 Emerging/Developed Economies

This section consists of two groups; emerging and developing countries. This section provides a breakdown of the regression results from two groups emerging economies and developed economies.

4.3.1 Emerging Economies

Table 4.24 presents the results of the regression analysis from emerging economies. The overall fit of the regression is very weak with the highest R^2 achieved being 0.2608. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.24 below.

Table 4.24: Overview of Regression Results from Emerging Economies		
Coefficient	T-stat	Variable added
Ownership	2.51	Ownership
	2.37	Age
	2.38	Industry
	2.41	Turnover
	2.41	Profit
Industry	3.22	Industry
	3.29	Turnover
	3.27	Profit

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

Table 4.25 Correlation Matrix Emerging Countries							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	0.2156	1					
Ownership	0.3254	0.8474	1				
Age	0.1357	0.0635	0.1299	1			
Industry	-0.3229	0.1160	0.0665	-0.1517	1		
Turnover	0.2821	0.7822	0.6743	0.1904	0.0823	1	
Profit	0.2399	0.8608	0.7196	0.1144	0.0975	0.8237	1

The correlation matrix in table 4.25 indicates that a number of variables in the regression are correlated; size and ownership, size and turnover, size and profit, ownership and turnover, ownership and profit, and turnover and profit. To test for the presence of the multicollinearity a VIF test is carried out. From this it can be verified that multicollinearity is present in the regression. This can be seen due to the level of VIF being 7.0367 which is slightly higher than the value of five which indicates a high level of multicollinearity.

4.3.2 Developed Economies

The overall fit of the regression is extremely weak with the R^2 only increasing slightly from 0.0065 to 0.0132. At the five per cent confidence level, none of the coefficients are statistically significant with all of the t-stats being under two in absolute terms.

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed.

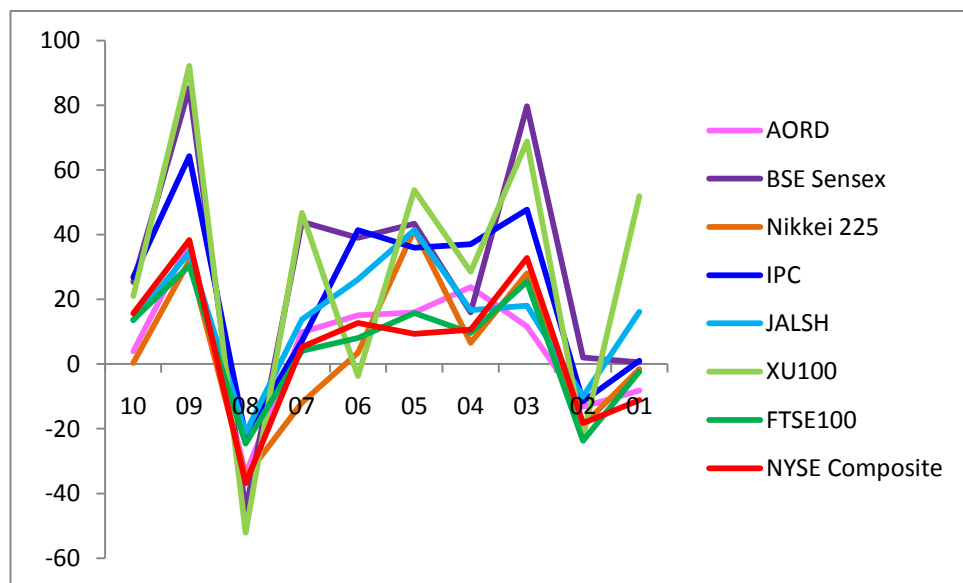
Table 4.26 Correlation Matrix Developed Countries							
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Age</i>	<i>Industry</i>	<i>Turnover</i>	<i>Profit</i>
Gearing	1						
Size	-0.0806	1					
Ownership	-0.0854	0.8441	1				
Age	0.0127	0.4337	0.4784	1			
Industry	-0.0008	0.2097	0.2802	-0.0518	1		
Turnover	-0.0201	0.1443	0.0733	-0.0027	-0.0995	1	
Profit	-0.0297	0.2829	0.1973	0.0582	-0.0609	0.9853	1

Table 4.26 presents the results which illustrate the degree of correlation between the regression variables. Two sets of variables appear to be correlated in this data set; size and ownership, and turnover and profit. To test for the presence of the multicollinearity a VIF test is carried out. From this it can be verified that multicollinearity is present in the regression. This can be seen due to the level of VIF being 5.4487 which is slightly higher than the value of five which indicates a high level of multicollinearity

4.4 Stock Market Conditions

To determine the impact of stock market conditions on each country throughout the sample, the change in the opening and closing prices of each of the relevant stock exchange indices is measured on a yearly basis.

Figure 4.1: Stock Market Conditions 2001-2010



This diagram illustrates the trend that each respective stock index followed over the ten year period. The most apparent feature of this figure is the dramatic fall in prices throughout 2008, when the economic downturn was occurring.

4.5 Mean Deviation by Industry

This section examines the mean deviations of each industry. It measures the distance between each value and the mean of the respective industry. Table 4.27 provides an overview of how the eleven industries are broken down on a country level.

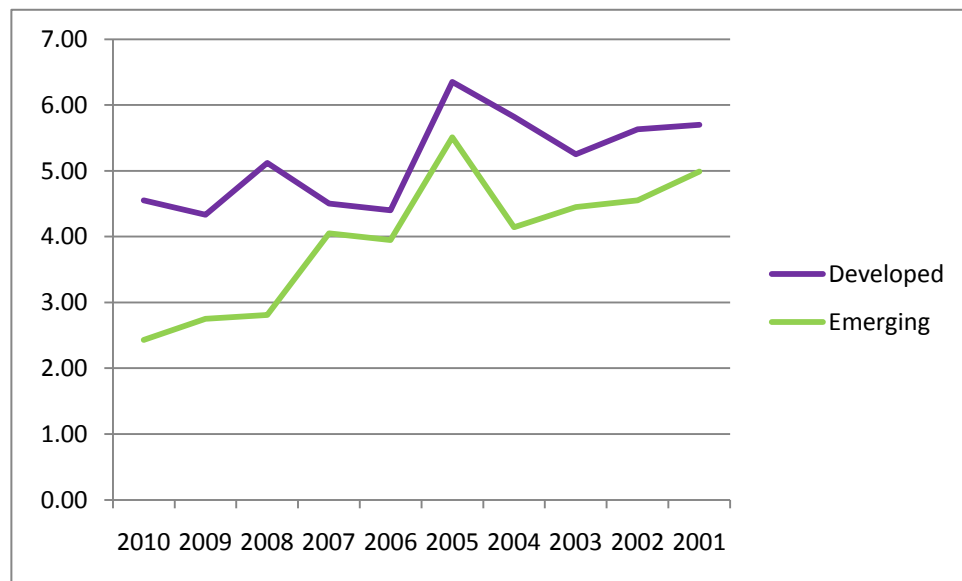
Table 4.27: Breakdown of Industries by Country								
	Australia	India	Japan	Mexico	South Africa	Turkey	UK	US
Consumer Discretionary	10%	-	25%	40%	10%	20%	10%	5%
Consumer Staples	10%	15%	5%	15%	10%	-	-	15%
Diversified	10%	10%	5%	-	10%	5%	5%	5%
Energy	5%	10%	-	-	5%	10%	15%	10%
Financials	25%	20%	5%	10%	35%	25%	30%	15%
Health Care	5%	-	-	-	-	-	5%	20%
Industrials	15%	30%	20%	10%	5%	15%	10%	15%
Materials	5%	5%	15%	20%	20%	5%	-	-
Technology	5%	5%	15%	-	5%	10%	20%	5%
Telecommunication Services	10%	5%	10%	5%	-	5%	5%	5%
Utilities	-	-	-	-	-	5%	-	5%

The mean deviation of each industry is graphically presented over the ten year period from 2001-2010. Each industry is subdivided into developed and emerging economies. A synopsis of the mean, median, and standard deviation of each industry is provided in Appendix D.

4.5.1 Financials

Figure 4.2 portrays the mean deviations for companies which are classified as financial organisations. Both the emerging and developing countries follow the same trend line with the emerging nations deviating less than their developed counterparts.

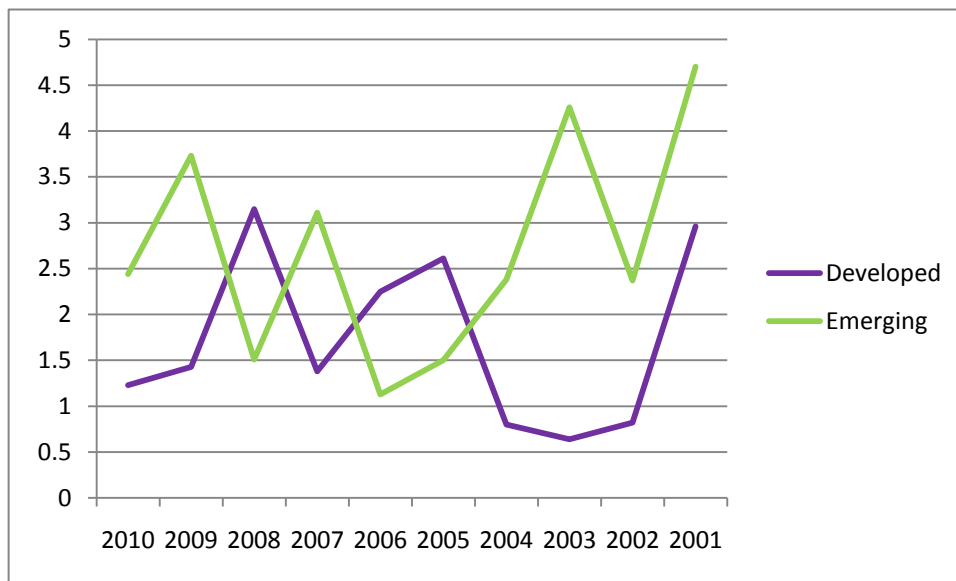
Figure 4.2: Financial Mean Deviations 2001-2010



4.5.2 Consumer Discretionary

Figure 4.3 represents the mean deviations of companies which are classified under consumer discretionary. Similar to the financial companies, they follow an akin trend line but the emerging economies tend to deviate further from their respective means than the developed nations.

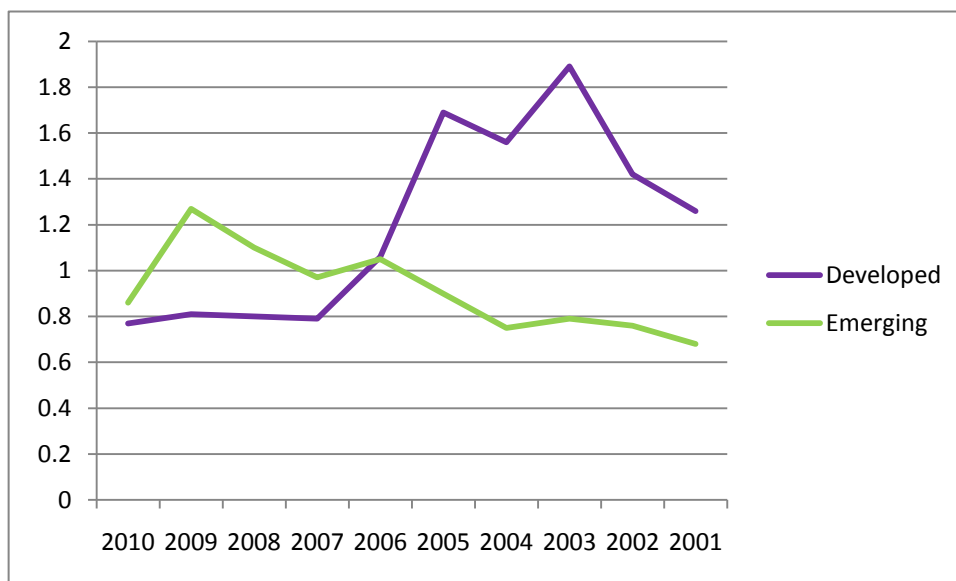
Figure 4.3: Consumer Discretionary Mean Deviations 2001-2010



4.5.3 Industrials

Figure 4.4 illustrates the mean deviations for companies that are classified as industrials. These companies which operate in developed economies deviate much further from the mean over the ten year period than companies from emerging economies.

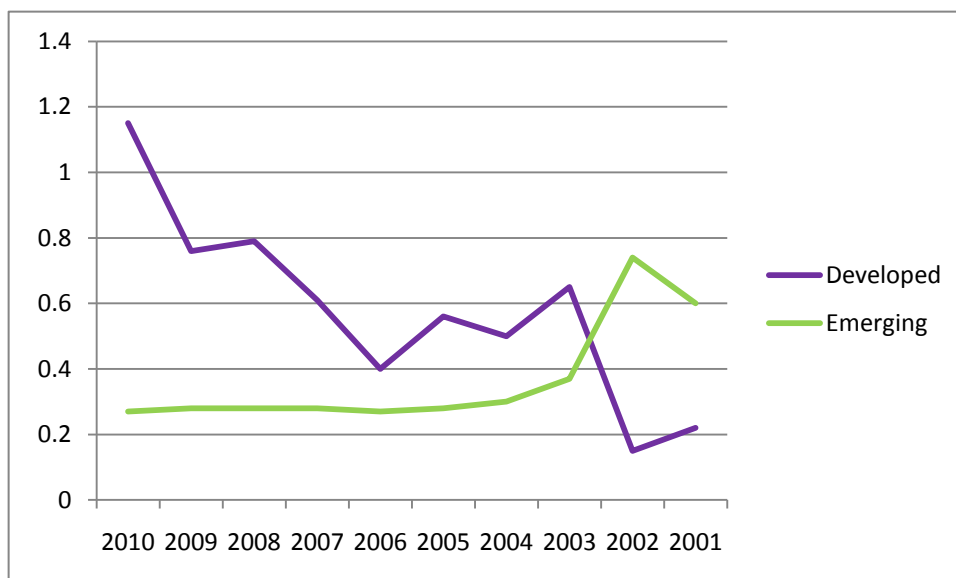
Figure 4.4: Industrial Mean Deviations 2001-2010



4.5.4 Consumer Staples

Figure 4.5 outlines the mean deviations for companies which are classified as consumer staples. Over the ten year sample period, companies from emerging economies tend to have a stable mean deviation, while those companies from developed economies are inclined to deviate further from the mean as time progresses.

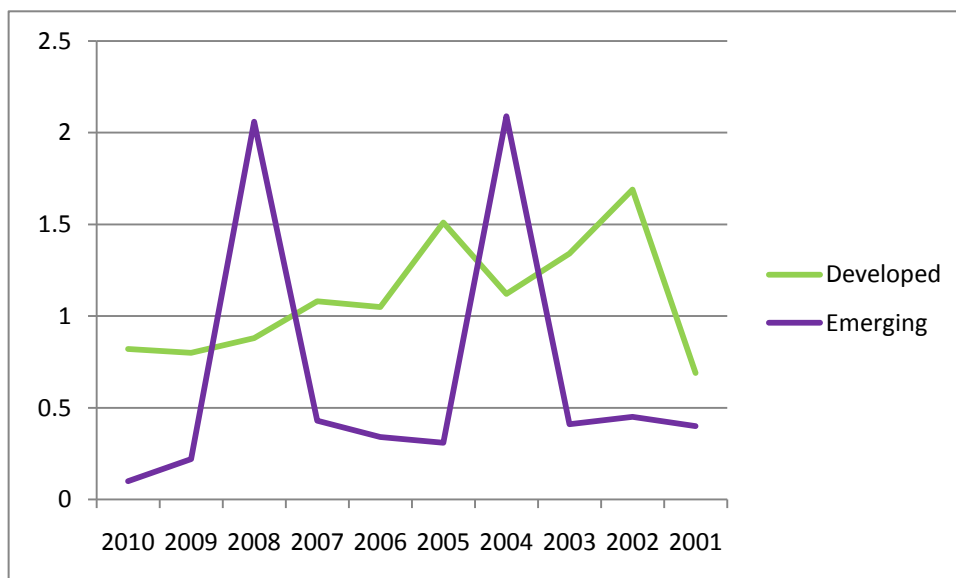
Figure 4.5: Consumer Staples Mean Deviations 2001-2010



4.5.5 Materials

Figure 4.6 depicts the mean deviation for companies which are categorised as materials. In this situation, the mean of companies from emerging economies deviates significantly in 2004 and 2008, while the mean of material companies from developed economies has remained reasonably stable since 2002.

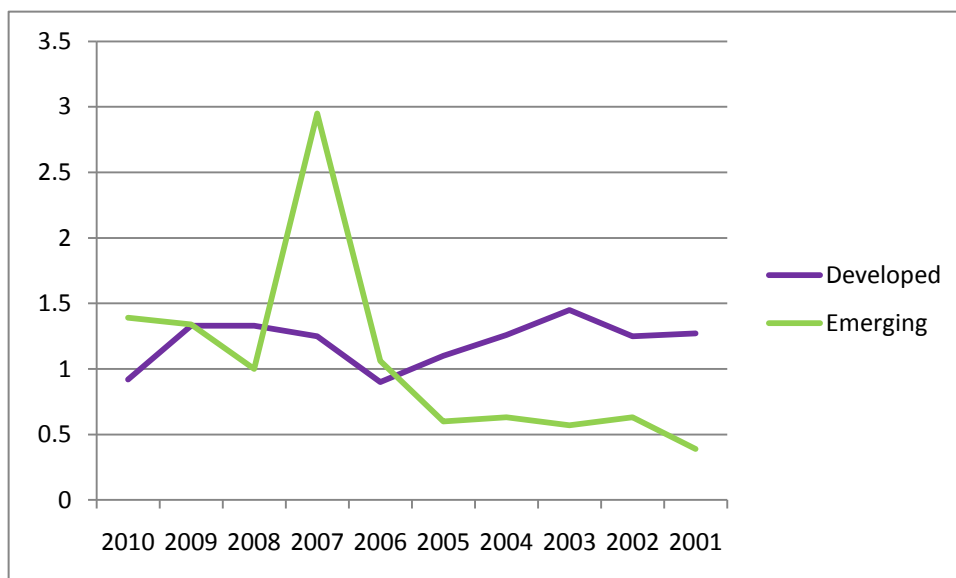
Figure 4.6: Materials Mean Deviations 2001-2010



4.5.6 Technology

Figure 4.7 portrays the mean deviations of companies which fall into the technology industry. It is evident from this graph that the mean of companies from emerging economies deviates substantially in 2007 before recovering in 2008. In contrast to this the mean deviation of companies from developed economies remains stable over the period.

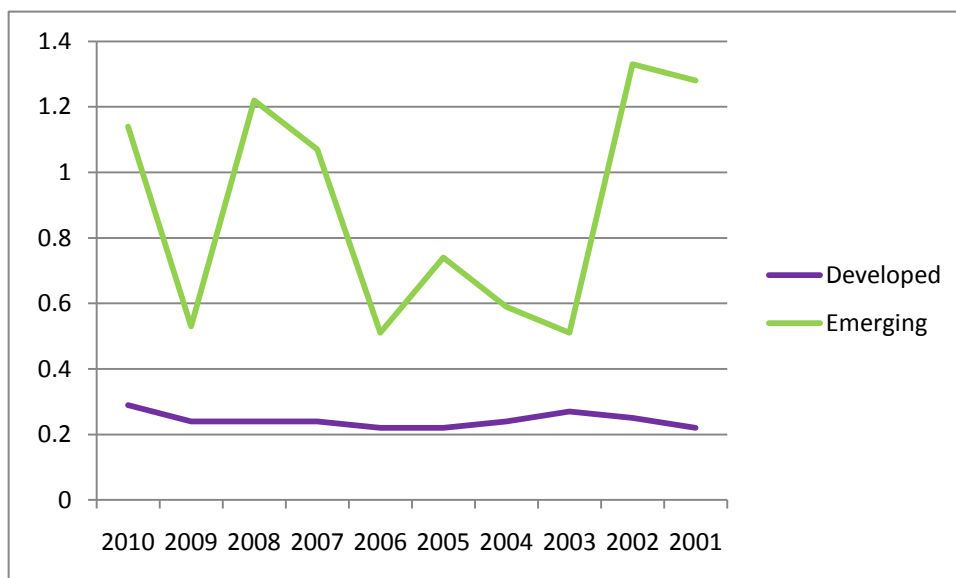
Figure 4.7: Technology Mean Deviations 2001-2010



4.5.7 Energy

Figure 4.8 exemplifies the mean deviations of companies from the energy sector from 2001 to 2010. It is clear from observing this figure that the mean deviations of the two markets are in stark contrast with each other. In the case of companies from developed economies, the mean deviation is constant over the ten year period, while that of companies from emerging nations fluctuates.

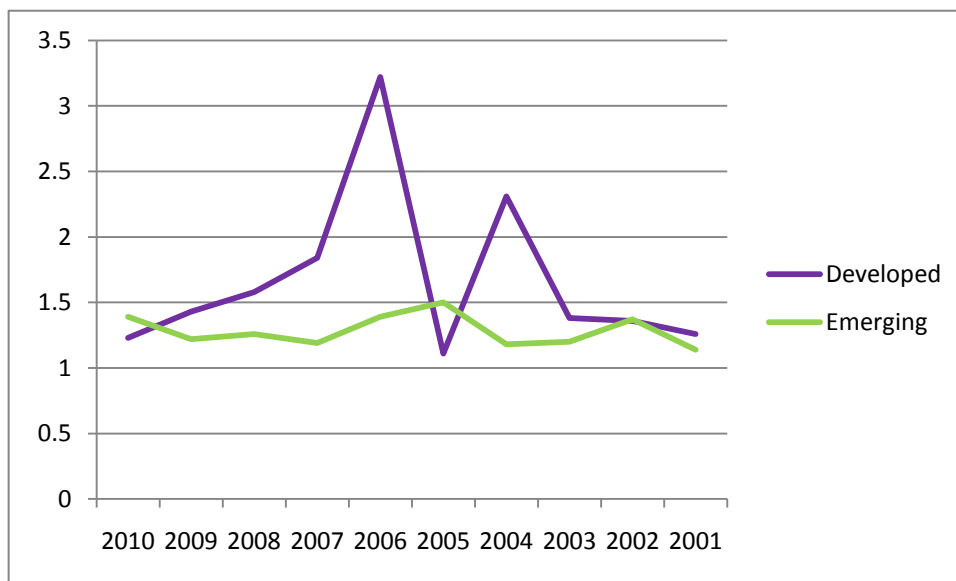
Figure 4.8: Energy Mean Deviations 2001-2010



4.5.8 Diversified

Figure 4.9 portrays the mean deviation of companies which are classified as diversified organisations. In this case the mean of companies from emerging economies is stable over the period and does not deviate to a large extent. However, the mean of companies from developed economies tends to deviate substantially between 2006 and 2007.

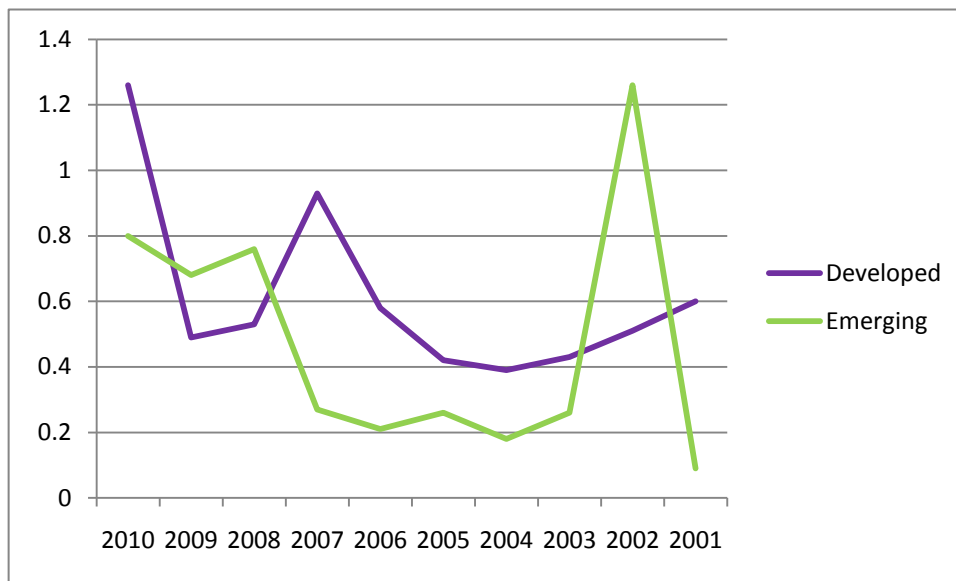
Figure 4.9: Diversified Mean Deviations 2001-2010



4.5.9 Telecommunication Services

Figure 4.10 presents the mean deviations for companies which fall into the category of telecommunication services. While companies from emerging and developed economies do not follow a similar trend they both repeatedly deviate from their means.

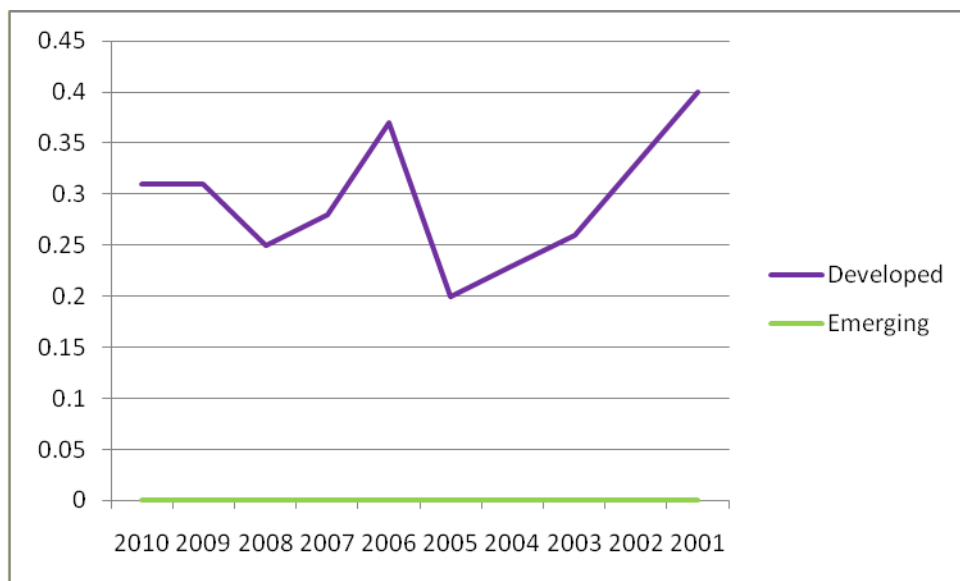
Figure 4.10: Telecommunication Services



4.5.10 Health Care

Figure 4.10 illustrates the mean deviation of companies which are classified under the category of health care. This sample consists of developed economies as the sample does not contain any companies which are from emerging economies and classified as health care.⁹

Figure 4.11: Health Care

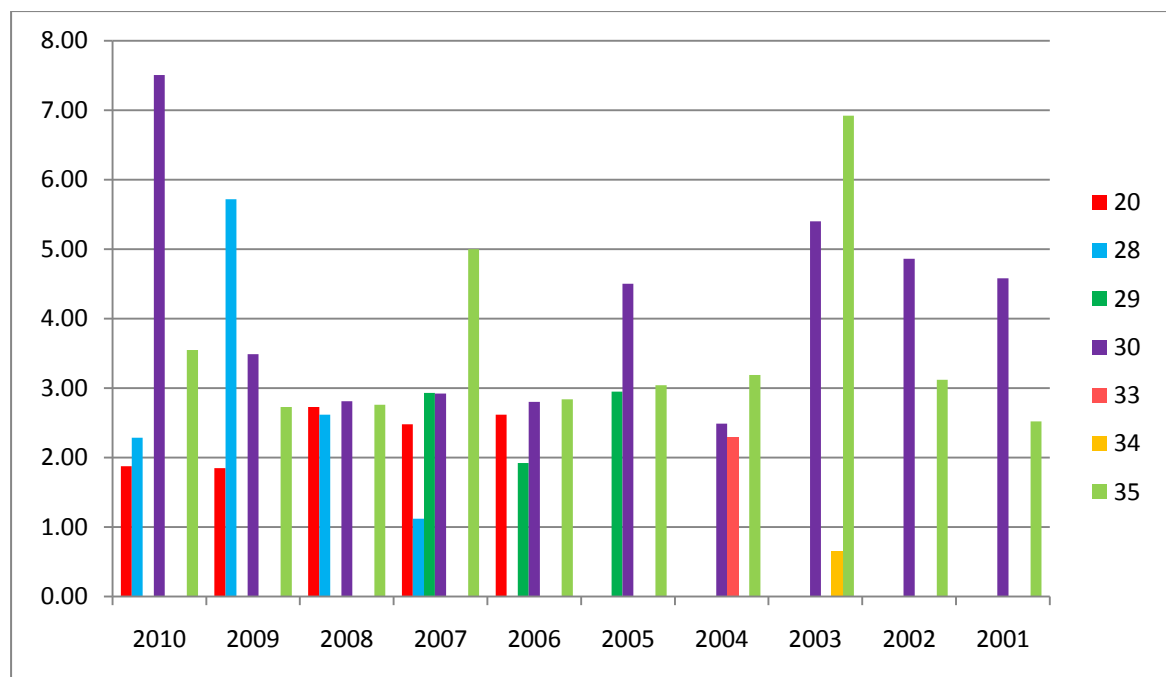


⁹ Mean Deviations are not calculated for utility companies as the sample only consists of two companies, one from an emerging economy and one from a developed economy.

4.6 Tax Rate

This section outlines the mean deviations by tax rate between 2001 and 2010. Each country is separated according to their corporation tax rate in each respective year of the sample.

Figure 4.12: Tax Rate Mean Deviations



It is evident from examining figure 4.12 that countries which have a corporate tax rate of 30 per cent and 35 per cent deviate further from their respective means than the other countries. Generally, corporate tax rates have become more in sync with one another over the time period, which has led to lower deviations. The mean deviations appear to be stable between 2006 and 2008, apart from an outlier in 2007 with the tax rate of 35 per cent.

4.7 Out of Sample Data

This section assembles the results of the regression analysis which was conducted on a selection of data from countries which were not included in the main study. The purpose of this assessment is to test the reliability of the model that was developed for this research study.

4.7.1 Emerging Economies

Table 4.28 illustrates the results of the regression analysis for the emerging economies of Argentina and China. In contrast to developed economies, the overall fit of the regression for emerging economies is very strong with an R^2 of 0.8084 being achieved. The coefficients that are statistically significant at the five per cent confidence level are outlined in table 4.29 below.

Table 4.28: Overview of Regression Results from Emerging Economies (Out of Sample Data)		
Coefficient	T-stat	Variable added
Industry	-4.55	Industry

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed

Table 4.29: Correlation Matrix Emerging Economies (Out of Sample Data)				
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Industry</i>
Gearing	1			
Size	0.1559	1		
Ownership	-0.3812	-0.2950	1	
Industry	-0.8402	-0.0002	0.6363	1

The correlation matrix in table 4.29 indicates that two variables are correlated with each other; ownership and industry. To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is not a high presence of multicollinearity in the regression.

This can be seen due to the level of VIF being 1.1711 which is significantly lower than the value of five which indicates a high level of multicollinearity.

4.7.2 Developed Economies

This regression analysis was conducted for the developed economies of Canada and France. The regression has an overall poor fit with the highest R^2 attained being 0.3569. At the five per cent confidence level, none of the coefficients are statistically significant with all of the t-stats being under two in absolute terms.

To verify the reliability of the sample and to test for collinearity amongst the variables in the model, a correlation matrix is constructed

Table 4.30: Correlation Matrix Developed Economies (Out of Sample Data)				
	<i>Gearing</i>	<i>Size</i>	<i>Ownership</i>	<i>Industry</i>
Gearing	1			
Size	-0.44737	1		
Ownership	0.0971	-0.4622	1	
Industry	-0.3033	-0.1908	0.3739	1

From observing the correlation matrix, it is clear that none of the variables are correlated with each other. To test for the presence of multicollinearity a VIF test is carried out. From this it can be verified that there is not a high presence of multicollinearity in the regression. This can be seen due to the level of VIF being 1.2723 which is considerably lower than the value of five which indicates a high level of multicollinearity.

Chapter Five

DISCUSSION

5.1 Chapter Overview

This chapter comprises of a discussion on the main findings of the study, while also comparing these findings to that of previous literature and academic findings. This section will also examine the underlying principles that resulted in the findings obtained.

5.2 Country Analysis

Giannetti (2003) ascertains that the inclusion of country-specific factors may not be important if the model used only includes companies with large market capitalisations. Therefore, this study consists of companies with both small and large market capitalisations. A number of tables in chapter four present the significant variables from the individual country regressions containing large and small cap companies. From observing the large cap companies it appears that industry is the variable which predominantly impacts on a company's capital structure. Frank and Goyal (2009), state that large cap companies with years of experience generally have strong positive reputations in leverage markets particularly in debt markets and therefore encounter lower agency costs associated with debt. For small cap companies, the variable which mainly influences a company's capital structure is size. These results support Giannetti's rationale for including companies of varying sizes in a model.

These results also highlight the comparison between the Anglo Saxon countries in the study. When looking at the variables that impact on the capital structure choices in these countries it is clear to see that for small cap companies there is not any apparent set of variables which impact on capital structure choices. However, for large cap companies industry appears to be the dominant variable in Australia and the US, which is in stark contrast with the results obtained from Japanese companies.

Chapter two outlined a wealth of factors that impact on a firm's capital structure. This study looks at three of these factors in greater detail; stock market conditions, creditor protection and macroeconomic conditions.

5.2.1 Stock Market Conditions

Booth *et al.* (2001) and Fan *et al.* (2006) uncover that capital market development plays a major role in determining a company's choice of corporate structure. Figure 4.1 in chapter four outlines the stock market conditions in each of the respective countries in the study. It is inevitable that the stock market conditions in an economy will affect the industries in that country. From this study it emerges that both the XU100 and BSE SENSEX fluctuate to a higher degree on an annual basis than any of their counterparts. Following this, the IPC and JALSH indexes experience the highest variation in prices. This establishes that stock indices in emerging economies oscillate by a higher degree than indices located in developed economies. In developed economies the stock indices appear to move concurrently with each other which indicates that developed countries respond to changes in the macroeconomic environment in a similar manner. It is evident from the diagram that each respective index fell substantially in 2008, when the global financial crisis struck. This shows how stock market conditions are highly influenced by the macroeconomic environment.

5.2.2 Creditor Protection

La Porta *et al.* (2000) and Bae and Goyal (2003) discover that a high level of creditor protection lowers the cost of borrowing for companies and also increases the value of the organisation. In addition to this, Claessens *et al.* (2001) find that strong creditor protection reduces cash flow risk, the variability in operating income, and leverage. However, the case of creditor protection is anything but a straightforward process. The suppliers of finance are not equal across countries due differences in the level of bankruptcy laws which protect creditors in each country.

The orientation of a country's bankruptcy laws can affect the characteristics of credit provided in various ways; this can be seen from examining a selection of countries from this study.

India does not have a complete set of laws governing corporate bankruptcy. Most citizens find it difficult to comprehend the terms bankruptcy, insolvency, liquidation and dissolution as they are used interchangeably. In contrast the UK has strong creditor protection laws. In the UK bankruptcy laws are separated into four systems, one for England and Wales, one for Scotland and one for Northern Ireland. Unlike India, the UK has clearly defined bankruptcy, insolvency, liquidation, and dissolution. In Japan there is not a consolidated insolvency code like that in the US, as an alternative insolvency issues are chiefly governed by the Bankruptcy Law. As the name suggests, these laws provide procedures to be followed in bankruptcy.

Palepu *et al.* (2010) establish that the composition of bankruptcy laws can affect the characteristics of credit provided in a country. Some of the ways in which legal differences affect credit are through multiple bank borrowing, supplier financing, off-balance sheet financing, and public debt. If the legal rights of financial institutions are weakly protected they may be unwilling to extend long-term credit. To overcome this problem, companies may borrow funds from a number of banks. This reduces the incentive for companies to strategically default. Generally, when creditor rights are weakly protected, supplier financing is seen as an efficient means of accessing debt. The rationale behind this is that suppliers have access to a wealth of information on their debtors' operations and if necessary have the ability to discipline their debtors by repossessing goods or withholding future deliveries. Companies may resort to off – balance sheet financing in situations where access to bank loans is restricted or overly expensive. Furthermore, public debt markets are not all developed to the same degree around the world. It is generally suggested that public debt is used as a substitute to bank debt in nations with bankruptcy laws which favour borrowers.

5.2.3 Macroeconomic Conditions

Macroeconomic conditions play a pivotal role in the choice of capital structure a company undertakes. The macroeconomic environment has a significant effect on firm level activities, as it tends to influence demand and supply dynamics faced by organisations. Economic growth and the inflation rate reflect the degree of stability in the economy. The higher the rate of economic growth the higher leverage, while the level of leverage decreases with higher inflation as debt financing becomes more expensive.

As the global economy has been in turmoil since 2008, the issuance of debt has generally become more prominent for large firms due to the size of their operations but does not have the same level of impact on smaller firms. It is also evident from examining the industry figures in chapter four, that the gearing of some industries is impacted more than that of other industries during these turbulent years. However, it is important to note that while also industries were affected by the changes in the macroeconomic environment, industries in emerging and developing markets were not affected in the same way or at the same time. Yeh (2011) states that the capital structure decisions of firms are counter-cyclical and negatively influenced by macroeconomic conditions.

5.3 Emerging/Developed Economies

De Jong *et al.* (2008) discover that country characteristics play a role in economies through their effect on firm specific factors. They find that this process differs across developed and emerging markets as well as between two developed nations and two emerging nations. To test this theory both emerging and developed countries are included in this study. Similar to the findings of Glen and Singh (2004), this study finds that the determination of capital structure in developed countries is different from that in emerging markets. From the regression analysis it is clear that the two factors which predominantly impact on gearing in emerging economies are the ownership structure and the industry in which a company is classified.

While in developed economies there is no clear link between the variables in this study and a company's choice of capital structure. The impact of ownership structure

on a company's capital formation will now be discussed while the impact of industry is considered in section 5.4.

Although a wealth of literature exists on the effects of ownership on a company's capital structure, the relationship between ownership structure and capital structure remains largely unexplored. Ownership structure explains capital structure but capital structure does not have any impact on ownership structure. Brailsford et al. (2002) propose that the link connecting managerial share ownership and gearing could be nonlinear. Companies with low levels of managerial ownership experience a decline in agency disagreements which leads to increased levels of debt and moreover capital structure. For the purposes of this study the number of mutual funds which contributed to the ownership structure of each company was utilised. This type of ownership structure, rules out agency problems as management are removed from the equation. However, in such circumstances Margaritis and Psillaki (2010) citing Grossman and Hart (1982) discover that external shareholders who hold a large percentage of the company have increased incentives to diminish managerial optimism. If this is the prevailing ownership structure within an organisation it can result in debt being employed as a mechanism to reduce the civil liberties exploited by management. If this strategy is imposed, it will result in these companies having high debt ratios.

5.4 Industry Conditions

Flannery and Rangan (2006) establish that a company's leverage ratio is often based on the gearing options chosen by the median company in the industry. The median gearing ratio of each industry is presented in table D.1 from 2001 to 2010. Companies may occasionally diverge away from their target capital structure but they generally adjust back towards the target in due course.

Yeh (2011) discovers that during the process of adjusting towards the target capital structure, companies with above-target capital structure have to gear down toward the target but companies with below-target capital structure have gear up towards the target. Taking this into consideration, the industry mean deviations are depicted from

Figure 4.1 to 4.10. From each of these diagrams the divergence between industries in emerging and developed economies can be measured. In the case of industries in developed economies five of the mean deviations of the industries fall over the period, three increase, while two remain unchanged. For emerging economies, two industries decline over the period, five increase and two remain unaffected by changes in the internal and external environment. However, as the industries are grouped by their economic status it is not feasible to highlight any one country which deviates more than another.

5.5 Tax

The corporate tax rate in a country has proved to be a big incentive for companies to accumulate debt due to the tax shields available. DeAngelo and Masulis (1980) discover that company's non-debt tax shields are a substitute for the tax benefits of debt financing. Watson and Head (2010) suggest that, if a company increases its level of debt, they are also increasing their tax shield as interest on debt is a tax-deductible expense. When the tax rates of the eight countries are grouped over the ten year period in the study, it is clear that countries with a higher rate of corporation tax (30 per cent-35 per cent) have higher levels of gearing than those countries with tax rates lower than 30 per cent. However, if the tax on income is superior to the corporate level of tax any benefits obtained would be negated. Surprisingly, the tax deviations remain balanced over the period from 2006-2008, during the time of the economic downturn. This indicates that the tax rate may not be an adequate measure of leverage in firms as it does not take macroeconomic conditions into account.

5.6 Out of Sample Data

Out-of-sample forecasting is recognised as a comprehensive analysis of the statistical capability of a model (Ashley, 2003). Out of sample data is a technique used in modelling to test the model. It involves compiling data which is not used in the original estimation of a model. In this study data is collected from two developed economies, Canada and France, and two emerging economies, Argentina and China. These variables are regressed using the same technique as that used in the original model. Similar, to the original model the variable that represents industry is statistically significant for emerging economies in the out of sample data. While also comparable with the original model, none of the variables are statistically significant for developed economies in the out of sample data analysis. This confirms the reliability and accuracy of the original model used in the study and verifies the original results obtained.

5.7 Chapter Summary

This chapter consisted of a discussion of the principal research findings of this study as outlined in chapter four. Industry and size were determined to be the principal variables which impact on the capital structure of large and small cap companies respectively. In conjunction with this industry and ownership were deemed to have the biggest impact on the capital structure of emerging economies. Furthermore, the effect of tax shields on capital structure was considered and the validity of the original model was established.

Chapter Six

CONCLUSION

6.1 Chapter Overview

This chapter provides a synopsis of the main findings of this study which were created from the primary research conducted. Following this conclusions and recommendations on the study will be presented. Finally, this chapter will come to a close with concluding remarks on the study.

6.2 Main Findings

This section provides a summary of the main findings of the study. The findings are presented in relation to the three objectives outlined in Chapter three. In addition to this, a brief synopsis of the tax rate and stock market conditions will be provided.

The first objective of this study was to establish the capital structure of a diverse range of companies in Australia, India, Japan, Mexico, South Africa, Turkey, UK, and US, and to determine if there are deviations across industries. To begin with, each country is assessed independently in two groups separated by their size before an analysis of industries from both emerging and developed economies is carried out.

From conducting a regression analysis on each country, it is clear that large and small cap companies are influenced by different factors when deciding on their capital structure. For large cap companies industry classification is the main factor which impacts on a company's capital structure, however, in the case of small cap companies the predominant factor is size. It is established that there are deviations across each industry classification but moreover it is ascertained that there are large deviations between industry classifications in emerging and developed. It is clear from this study that both emerging and developed economies react to stock market and macroeconomic conditions in different ways.

The second objective was to determine if a company's economic classification influences the capital structure formation of the organisation. This study clearly establishes that the factors which impact upon the capital structure in developed economies is significantly different to those which influence the capital structure in emerging economies. In emerging economies the predominant factors which have an effect on corporate financing decisions are ownership structure and industry classification. However, when the developed economies are grouped together there is no conclusive factor which can be associated as having a major impact on the capital structure.

Finally, the third objective of this study was to determine if the model developed is applicable to all companies through the use of out of sample data. Through the use of out of sample data, the validity of the original model was examined. It was established that the results of the developed economies in this new sample corresponded to that of the developed economies in the original sample with none of the independent variables having a significant impact on a company's choice of capital structure. In the case of the emerging economies in the new sample the results also corresponded to that of the original sample, with industry being statistically significant. Therefore, objective three was accomplished as it was established that the original model developed is applicable to all companies.

The main findings established from observing both the corporate tax rates and stock market conditions in each country are that the higher the tax rate in a country, the further that country deviates from the mean leverage. In relation to the condition of the stock market, as the overall indices fell, this was not mirrored in the individual industrial sectors.

6.3 Limitations of the Study and Suggested Future Research

The capital structure of companies in some industries is impacted by legislation with some using debt on their balance sheets to fund the transactions, therefore potentially distorting capital structure variation within the industry sector.

The analysed data covers a period in which the external economic climate may vary overtime for example differences in government policy, inflation and gross domestic product (GDP) all impact on the financial performance of the firm. This is mitigated to some extent by stratifying the data by industry sector.

As the sample size utilised in this study was relatively small, it is suggested that future research should incorporate a wider range of companies from each country or include additional countries in the sample. This would provide the study with increased depth and take account of large, medium, and small cap companies.

As the growth of the global economy lies in developing countries, a great deal of research is required in order to fully comprehend the variables that comprise the capital structure in these emerging economies. As there are a vast number of variables which impact on capital structure it is recommended that a wider range of factors be included in the study. This would ensure that a more comprehensive view of the factors which influence capital structure choices is established

An additional way to improve this study is to use both quantitative and qualitative research. A regression analysis would measure the impact of the company's fundamentals while surveys would be sent to the managers of companies to investigate their attitude to this element of corporate finance. This would provide a broader picture of the incentives behind the capital structure decisions of organisations.

6.4 Concluding Remarks

This study investigated the determinants of capital structure for developed and emerging economies over a ten year period utilising panel data analysis. The empirical evidence shows that significant differences exist across the two economic classifications. Regardless of the numerous ways in which the debt ratio can be defined, in accordance with the theory of capital structure, the significance of factors, such as industrial classification, ownership structure and company size is confirmed. Capital structure plays an imperative role in the current and potential positioning of a company and influences financing decisions in a variety of ways. Therefore, it remains at the core of the decision making process in all companies around the world, despite their economic status.

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Personal Reflection

Throughout this dissertation process I have learned an abundance of skills from a range of areas, particularly while conducting the primary research which was at the core of completing this dissertation. The initial skill I developed was that of time management. As this is quite a lengthy process it was essential that I had the ability to proportion my time between the dissertation and my term subjects. It was important not to neglect my dissertation given the scale of the exercise but at the same time I had to ensure that I didn't let it interfere with my other projects and exams. Therefore, I had to ensure that I managed my time in an effective and efficient manner.

Although I had a topic in mind long before the proposal for the dissertation had to be submitted, I had little knowledge or experience of the most suitable approach in achieving my desired research objectives. Given the vast amount of academic papers written on the subject of capital structure I found it quite difficult to narrow the topic down to specific area. At this stage of the dissertation process, the role of my supervisor was invaluable in advising me of the different routes I could take. From this interaction my communication skills were developing as I had contact with my supervisor on a regular basis.

As previously stated the immense volume of literature on the area of corporate finance and in particular on capital structure provided me with a profusion of information from which to conduct my literature review. This ensured that the primary research undertaken for the paper was well structured. As one of my modules also covered the area of capital structure, my knowledge of the area was enhanced even further. Given the nature of the topic data had to be sourced from databases, stock exchanges, academic papers, and in some instances from individual companies. This enabled me to develop my technical, communication, and analytical skills. Without the skills developed and resources available throughout this process, the completion of this dissertation would not have been possible.

Looking back over the research process, there are certain things that could have been completed differently, for example the stock exchanges could have been analysed to ensure access to information was freely available. However, I feel that overall the objectives were achieved in a well thought out and structured manner.

Despite some complications in obtaining data and completing the regression analysis, I did not feel under time constraints throughout the process. As I had prepared an outline of the dissertation procedure, I remained focused throughout and set deadlines for each task to be completed.

I am in no doubt that the skills that have been developed throughout the completion of this dissertation will stand to me again in the future, whether it is in academic or professional circumstances. I endeavour to continue developing and improving my skill base over the coming months and am confident that this will be of great assistance in securing employment.

I perceived the research process as being a daunting task to begin with given the wide range of topics to choose from and the length of the process. However, my experience has been overall positive, it was difficult at times but getting the end result was definitely worth the hard work. I truly believe that the problems encountered and skills gained will be of immense benefit to me in the future.

Table B.1 Overview of Australian Companies in the Study

Listing Code	Entity Name	Market Capitalisation (AUD)
BHP/M	BHP Billiton Limited	134,625,172
CBA/S	Commonwealth Bank.	77,183,717
WBC/S	Westpac Banking Corp	63,834,990
ANZ/M	ANZ Banking Grp Ltd	55,424,915
NAB/M	National Aust. Bank	52,856,793
TLS/M	Telstra Corporation.	37,826,947
RIO/M	RIO Tinto Limited	33,910,744
WOW/S	Woolworths Limited	32,699,082
WPL/P	Woodside Petroleum	32,363,777
WES/P	Wesfarmers Limited	31,630,724
GLH/M	Global Health Ltd	1,692
HIT/S	Hitech Group Aust.	1,551
MSI/M	Multistack Internat.	1,460
ROB/M	Robe Australia Ltd	1,391
JVG/P	JV Global Limited	1,295
BSN/M	Bisan Limited	1,250
CDH/B	Chongherr Investment	1,147
BRO/M	Broad Investments	1,106
TEO/M	Telesso Tech Ltd	1,083
AIG/S	Aircruising Aust.	961

Table B.2 Overview of Indian Companies in the Study

Listing Code	Entity Name	Market Capitalisation (INR)
RIL	Reliance Industries	284,931.02
ONGC	Oil and Natural Gas Corporation Ltd	243,404.54
INFY	Infosys	164,384.99
ITC	ITC Ltd.	150,003.07
SBI	State Bank of India	148,472.53
ICICIBANK	ICICI Bank	124,747.87
HDFCBANK	HDFC Bank	112,713.60
LNT	Larsen & Toubro Ltd	109,577.78
WIPRO	Wipro Ltd	102,806.73
HDFC	Housing Development Finance Corporation Ltd	101,051.30
GODFRYPHLP	Godfrey Philips India Ltd.	2,735.46
MTNL	Mahanagar Telephone Nigam Ltd	2,699.55
ALFALAVAL	Alfa Laval (I) Ltd.	2,698.85
NOVARTIS	Novartis	2,684.64
CARBORUNIV	Carborundum Uni.	2,648.84
BLUESTARCO	Blue Star	2,645.43
BASF	BASF India Lt	2,596.75
BIRLACORPN	Birla Corporation Lt	2,579.84
TVSMOTOR	TVS Motor Co. Ltd.	2,470.52
BEML	BEML Ltd.	2,427.82

Table B.3 Overview of Japanese Companies in the Study

Listing Code	Entity Name	Market Capitalisation (JPY)
7203	Toyota Motor Corporation	11481830
9437	NTT Docomo Inc.	6259410
7267	Honda Motor Co. Ltd.	5814686
9432	Nippon Telegraph and Telephone Corporation	5570094
7751	Canon Inc.	5048295
7201	Nissan Motor Company Ltd	3833567
8058	Mitsubishi Corporation	3387632
6954	Fanuc Corporation	3381858
9984	Softbank Corp.	3347504
2914	Japan Tobacco	3205000
6703	Oki Electric Industry Co Ltd	59246.53
9737	CSK Corp	56989.25
4041	Nippon Soda Co Ltd	54165.49
5707	Toho Zinc Co Ltd	53391.1
3110	Nitto Boseki Co Ltd	50278.54
8803	Heiwa Real Estate Co Ltd	36654.8
3103	Unitika Ltd	34095.66
5715	Furukawa Co Ltd	32760.91
9681	Tokyo Dome Corp	30482.66
3864	Mitsubishi Paper Mills Ltd	28777.08

Table B.4 Overview of Mexican Companies in the Study

Listing Code	Entity Name	Market Capitalisation (MXN)
WALMEX	Walmart de Mexico, S.A.B. DE C.V	623139.400
GMEXICO	Grupo Mexico S.A.B. DE C.V	298710.400
FEMSA	Fomento Ecinomico Mexicano, S.A.B. DE C.V.	240146.300
GMODELO	Grupo Modelo, S.A.B. DE C.V	228857.300
KOF	Coca-Cola Femsa, S.A.B. DE C.V.	192796.200
GFINBUR	Grupo Financiero Inbursa, S.A.B. DE C.V.	192510.400
TELMEX	Telefonos De Mexico, S.A.B. DE C.V.	178561.400
PE&OLES	Industrias Penoles, S. A.B. DE C. V	175763.800
TLEVISA	Grupo Televisa, S.A.B. DE C.V.	155731.600
ELEKTRA	Grupo Elektra, S.A. DE C.V.	136149.800
HOGAR	Consortio Hogar, S.A.B. DE C.V.	824.415
CMR	CMR, S.A.B. DE C.V.	812.053
POCHTEC	Grupo Pochteca, S.A.B. DE C.V.	803.899
GMD	Grupo Mexicano De Desarrollo, S.A.B. DE C.V.	781.496
CONVER	Convertidora Industrial, S.A.B. DE C.V.	423.501
HILASAL	Hilasal Mexicana S.A.B. DE C.V.	139.440
PROCORP	Procorp, S.A.B DE C.V.,	122.891
CNCI	Universidad CNCI, S.A. DE C.V.	95.633
EDOARDO	Edoardos Martin, S.A.B. DE C.V.	94.764
IASASA	Industria Automotriz, S.A. DE C.V.	11.905

Table B.5 Overview of South African Companies in the Study

Listing Code	Entity Name	Market Capitalisation (ZAR)
MTN	Mtn Group Ltd	265,842,895,745.82
SOL	Sasol Ltd	227,114,882,806.00
AMS	Anglo American Platinum Ltd	169,123,695,634.10
SBK	Standard Bank Group Ltd	155,690,708,277.13
IMP	Impala Platinum Hlgs Ltd	116,551,236,690.00
FSR	Firststrand Ltd	111,518,486,608.42
ASA	Absa Group Limited	97,626,291,144.99
NED	Nedbank Group Ltd	72,170,257,552.00
GFI	Gold Fields Ltd	72,086,896,668.87
SLM	Sanlam Ltd	57,120,000,000.00
DON	Don Group Ltd	91,290,443.93
ADI	Adaptit Holdings Ltd	69,172,985.70
PMV	Primeserv Group Ltd	59,428,234.35
RTO	Rex Trueform Cloth Ord	39,954,818.75
COL	Colliers SA Holdings Ltd	33,548,881.20
SPA	Spanjaard Ltd	31,757,115.00
AOO	African and Overseas Enterprises	11,625,000.00
MOB	Mobile Industries	10,680,396.76
KIR	Kairos Industrial Holdings	5,042,140.52
AWT	Awethu Breweries Ltd	2,536,707.27

Table B.6 Overview of Turkish Companies in the Study

Listing Code	Entity Name	Market Capitalisation (TL)
GARAN	Garanti Bankasi	29,904,000,000
AKBNK	Akbank	29,600,000,000
ISCTR	Is Bankasi	22,454,850,000
TCELL	Turkcell	19,536,000,000
YKBNK	Yapi Ve Kredi Bank	17,562,087,000
KCHOL	KOC Holding	17,485,621,000
SAHOL	Sabanci Holding	14,364,444,000
ENKAI	ENKA Insaat	12,716,000,000
FINBN	Finansbank	10,914,750,000
TUPRS	Tupras	10,492,564,000
ALCTL	ALCATEL LUCENT TELETAS	139,323
ADNAC	ADANA ÇİMENTO (C)	138,882
VAKFN	VAKIF FİN. KİR	130,000
HEKTS	HEKTAŞ	127,440
MARTI	MARTI OTEL	96,703
ALKA	ALKİM KAĞIT	78,225
UCAK	USAŞ	74,214
DENCM	DENİZLİ CAM	63,900
DOBUR	DOĞAN BURDA	58,286
AKSUE	AKSU ENERJİ	40,925

Table B.7 Overview of UK Companies in the Study

Listing Code	Entity Name	Market Capitalisation (GBP)
HSBA	HSBC Holdings	110181.8176
GEC	General Electric Co.	102480.5642
JPM	JPMorgan Chase & Co.	98529.70761
TYT	Toyota Motor Corp	93368.25381
BP	BP	86755.86326
VOD	Vodafone Group	85510.59258
TTA	Total SA	83376.66964
SIE	Siemens AG	75496.50264
SCL	Schlumberger	70437.74322
ABT	Abbott Laboratories	69051.1412
HID	Hidong Estate	0.856667
LGN	Lagan Capital Ltd.	0.7677025
CSS	CSS Stellar Plc	0.760635251
AVC	Aberdeen Development Capital	0.759033531
TLY	Totally	0.702799588
ATIA	Atia Group Ltd.	0.692541685
WST	Westside Acquisitions Pc	0.641054712
BPFA	Blue Planet FIN GRWTH&INC INV TST 1	0.612972
ENGI	Energiser Investments Plc	0.560664248
PIP	Pipehawk	0.495307725

Table B.8 Overview of US Companies in the Study

Listing Code	Entity Name	Market Capitalisation (USD)
XOM	Exxon Mobil Corporation	408858000000
PG	Procter & Gamble Company (The)	259825674000
CVX	Chevron Corporation	213470571300
IBM	International Business Machines Corporation	212614048000
GE	General Electric Company	195246279270
WMT	Wal-Mart Stores, Inc.	187046477230
JNJ	Johnson & Johnson	184890095350
T	AT&T Inc.	179495820000
JPM	J P Morgan Chase & Co	158867926300
PFE	Pfizer, Inc.	156047317500
TCI	Transcontinental Realty Investors, Inc.	17499040
BSI	Alon Holdings - Blue Square Israel Ltd.	14809145
PBI^	Pitney Bowes Inc	12436560
HNZ^	H.J. Heinz Company	7299900
KSU^	Kansas City Southern	5808000
LNC^	Lincoln National Corporation	5700000
CMS^A	CMS Energy Corporation	5508000
FMS^	Fresenius Medical Care Corporation	5200420
BMY^	Bristol-Myers Squibb Company	3420600
GMT^	GATX Corporation	3254310

Table C.1 Regression Output Australian Large Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size¹⁰	0.0374	0.0034 (0.5579)					
Ownership	0.0646	0.0078 (0.6672)	-0.7229 (-0.4504)				
Age	0.3769	0.0071 (0.6906)	-1.2371 (-0.8558)	7.4098 (1.7342)			
Industry	0.7161	0.0031 (0.3996)	0.0232 (0.0196)	2.9492 (0.8082)	-125.9347 (-2.4439)		
Turnover	0.8351	0.0049 (0.7376)	0.3387 (0.3294)	0.9059 (0.2716)	-155.2928 (-3.2911)	-0.0129 (-1.6990)	
Profit	0.8589	0.0059 (0.8114)	-0.2839 (-0.2022)	2.1622 (0.5441)	-157.0288 (-3.1121)	-0.01722 (-1.6975)	0.03413 (0.7115)

Table C.2 Regression Output Indian Large Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.1094	-0.0123 (-0.9915)					
Ownership	0.1382	-0.0003 (-1.026)	0.4766 (0.4831)				
Age	0.1995	-0.0149 (-1.0611)	0.1531 (0.1352)	-5.3417 (-0.6778)			
Industry	0.6900	0.00002 (0.0997)	-0.5222 (-0.6460)	-1.4380 (-0.2591)	-144.3135 (-2.8128)		
Turnover	0.9212	-0.0272 (-2.6197)	-0.4636 (-1.0168)	-2.5667 (-0.8163)	-116.9047 (-3.8968)	0.0316 (3.4268)	
Profit	0.9260	-0.0008 (-1.4433)	-0.3235 (-0.5383)	-1.5273 (-0.3606)	-124.9578 (-3.2697)	0.0222 (0.9358)	0.1636 (0.4409)

¹⁰ Figures in brackets represent the t-stat value, while the first figure in each row is the value of the coefficient

Table C.3 Regression Output Indian Small Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.0756	-0.0273 (-0.8084)					
Ownership	0.2511	0.0267 (0.5019)	1.6130 (1.281)				
Age	0.6479	0.0121 (0.3051)	0.5069 (0.4946)	-3.5325 (-2.6001)			
Industry	0.6832	0.0347 (0.6775)	0.7333 (0.6622)	-4.2958 (-2.4651)	-15.0130 (-0.7469)		
Turnover	0.9549	0.0496 (2.2737)	-0.1509 (-0.3016)	-2.4879 (-3.0277)	-21.8414 (-2.5434)	0.3215 (4.9123)	
Profit	0.9730	0.0147 (0.4676)	-0.7048 (-1.1866)	-1.1493 (-0.9605)	-50.5669 (-2.3326)	0.3126 (5.3143)	-0.4350 (-1.4168)

Table C.4 Regression Output Japanese Large Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.0502	-0.0084 (-0.6506)					
Ownership	0.2681	0.0041 (0.2722)	-0.1588 (-1.4436)				
Age	0.3436	0.0072 (0.4594)	-0.2411 (-1.608)	1.5473 (0.8307)			
Industry	0.4137	0.0091 (0.5544)	-0.29155 (-1.7314)	3.3888 (1.1058)	14.3899 (0.7731)		
Turnover	0.4359	-0.00285 (-0.08094)	-0.27075 (-1.41071)	3.4537 (1.0264)	17.3209 (0.7981)	0.0005 (0.3973)	
Profit	0.5145	-0.0067 (-0.1762)	-0.1684 (-0.6666)	2.0229 (0.4877)	23.8525 (0.9515)	0.0008 (0.5583)	-0.0239 (-0.6968)

Table C.5 Regression Output Japanese Small Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.1785	0.2723 (1.3182)					
Ownership	0.3046	0.4047 (1.724)	-112.419 (-1.1271)				
Age	0.3117	0.3737 (1.328)	-114.94 (-1.0676)	-18.8572 (-0.2488)			
Industry	0.3262	0.2866 (0.7079)	-110.329 (-0.9386)	-23.6627 (-0.2836)	720.9579 (0.3270)		
Turnover	0.9302	0.1750 (1.1913)	41.7229 (0.8417)	-24.0586 (-0.8013)	-2268.393 (-2.408)	6.3278 (5.883426)	
Profit	0.9366	0.2031 (1.1966)	8.2634 (0.1007)	-32.1747 (-0.8876)	-1876.602 (-1.480)	5.7338 (3.5668)	4.3014 (0.5464)

Table C.6 Regression Output Mexican Large Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.1399	-0.0018 (-1.1408)					
Ownership	0.2289	-0.0002 (-0.0900)	-0.12184 (-0.8992)				
Age	0.2308	-0.0003 (-0.1137)	-0.1146 (-0.7252)	0.1026 (0.1200)			
Industry	0.2626	-0.0013 (-0.3523)	-0.0607 (-0.2952)	0.5299 (0.4079)	-6.8086 (-0.4645)		
Turnover	0.6508	0.0120 (1.7532)	-0.1755 (-1.0494)	1.6674 (1.4684)	-0.4816 (-0.0413)	-0.02111 (-2.1087)	
Profit	0.6515	0.01236 (1.3632)	-0.1835 (-0.8457)	1.6552 (1.2553)	-0.2741 (-0.0200)	-0.0217 (-1.5853)	0.0026 (0.0806)

Table C.7 Regression Output Mexican Small Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.0241	-0.0005 (-0.3853)					
Ownership	0.0509	-0.00002 (-0.0097)	-4.6722 (-0.3753)				
Age	0.0729	-0.0005 (-0.1703)	-1.5520 (-0.0909)	-3.0604 (-0.3086)			
Industry	0.3967	-0.0001 (-0.0459)	-7.3297 (-0.4431)	-0.5931 (-0.0628)	-35.7611 (-1.2689)		
Turnover	0.5625	-0.0023 (0.5872)	4.3472 (0.1989)	5.3595 (0.4471)	-41.5948 (-1.3798)	-2.3928 (-0.8706)	
Profit	0.6420	-0.0057 (0.6488)	3.4778 (0.1241)	6.1904 (0.4011)	-59.9814 (-1.0934)	-4.4734 (-0.7926)	18.7219 (0.4713)

Table C.8 Regression Output South African Large Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.2367	-0.0023 (-1.5752)					
Ownership	0.3287	-0.00047 (-0.1922)	-0.6311 (-0.9792)				
Age	0.3291	-0.0004 (-0.1595)	-0.6310 (-0.9068)	0.1461 (0.0598)			
Industry	0.9136	0.001737 (1.544)	0.1292 (0.4262)	-0.0422 (-0.0439)	-150.693 (-5.8175)		
Turnover	0.9186	0.0006 (0.2295)	0.0521 (0.1429)	-0.5246 (-0.3669)	-129.792 (-2.5517)	0.0105 (0.4931)	
Profit	0.9222	0.00225 (0.4234)	-0.1479 (-0.2191)	-1.1439 (-0.4948)	-135.212 (-2.2831)	0.0178 (0.5746)	-0.1629 (-0.3733)

Table C.9 Regression Output South African Small Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover
Size	0.5911	0.0035 (3.2556)				
Ownership	0.7278	0.0041 (3.2556)	-126.236 (-1.4174)			
Age	0.7309	0.0041 (2.8359)	-117.53 (-1.0443)	0.2741 (0.1852)		
Industry	0.8070	0.0039 (2.6202)	-47.4232 (-0.3366)	-0.3273 (-0.1952)	-24.4667 (-0.8886)	
Turnover	0.9551	0.0037 (3.5253)	-59.301 (-0.6159)	-0.0497 (-0.0430)	-27.3165 (-1.4498)	-1.6081 (-1.8169)

Profit is omitted from this regression as it is perfectly correlated with the dependant variable.

Table C.10 Regression Output Turkish Large Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.1153	0.0101 (1.0212)					
Ownership	0.2356	0.0190 (1.4639)	-0.3860 (-1.0495)				
Age	0.2920	0.0157 (1.0921)	-0.4099 (-1.0678)	2.3102 (0.6916)			
Industry	0.5076	0.0065 (0.4482)	-0.1156 (-0.2867)	-1.1551 (-0.3002)	-44.3616 (-1.4793)		
Turnover	0.5112	0.0057 (0.3356)	-0.1099 (-0.2442)	-0.5660 (-0.1032)	-41.4158 (-1.1032)	-0.0018 (-0.1719)	
Profit	0.9345	-0.0537 (-3.5194)	-0.3107 (-1.5870)	-6.6198 (-2.4549)	-49.0399 (-3.0716)	0.0068 (1.3993)	0.8873 (4.4023)

Table C.11 Regression Output Turkish Small Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.2311	0.0023 (1.5507)					
Ownership	0.4736	0.0043 (2.5026)	-35.8841 (-1.7958)				
Age	0.5579	0.0041 (2.3673)	-10.1987 (-0.3277)	-6.1494 (-1.0694)			
Industry	0.5616	0.0040 (2.1013)	-9.1471 (-0.2665)	-6.0005 (-0.9502)	3.6994 (0.2048)		
Turnover	0.5663	0.0043 (1.7237)	-9.2037 (-0.2412)	-5.9106 (-0.8400)	3.4917 (0.1736)	-0.2299 (-0.2081)	
Profit	0.6692	0.0039 (1.5319)	2.9077 (0.0718)	-4.7962 (- 0.66723)	5.8984 (0.2887)	0.4509 (0.3422)	-4.4528 (-0.9663)

Table C.12 Regression Output UK Large Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.4709	0.0154 (2.6682)					
Ownership	0.4871	0.0156 (2.5643)	0.0339 (0.4700)				
Age	0.4871	0.0156 (2.3451)	0.0338 (0.4327)	0.0216 (0.0093)			
Industry	0.5267	0.0118 (1.2843)	0.0446 (0.5309)	-0.3965 (-0.1567)	-25.5781 (-0.6467)		
Turnover	0.7967	0.0088 (1.2869)	-0.0386 (-0.5414)	-2.5275 (-1.2205)	-63.2453 (-1.9011)	-0.00002 (-2.3054)	
Profit	0.8326	0.0068 (0.9024)	-0.0509 (-0.6672)	-2.0917 (-0.9349)	-58.3025 (-1.6469)	-0.0001 (-1.0099)	0.0087 (0.8018)

Table C.13 Regression Output UK Small Cap Companies

	R ²	Size	Ownership	Age
Size	0.5194	-1.3719 (0.7620)		
Ownership	0.5429	-1.3173 (-1.4226)	-22.0575 (-0.3209)	
Age	0.6118	-1.9811 (-0.9978)	-13.2923 (-0.1446)	3.6917 (0.4210)

This regression only consists of three independent variables as the variables for industry, turnover, and profit are perfectly correlated with the dependent variable.

Table C.14 Regression Output US Large Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.0985	-0.0009 (-0.9347)					
Ownership	0.1781	-0.0010 (-0.9828)	0.21834 (0.8235)				
Age	0.1781	-0.0010 (-0.8695)	0.2223 (0.5371)	-0.0359 (-0.0132)			
Industry	0.5527	-0.0010 (-1.0690)	0.3723 (1.0874)	-0.6519 (-0.2941)	-45.2386 (-2.0463)		
Turnover	0.6094	-0.0003 (-0.2050)	0.4124 (1.1405)	-1.8284 (-0.6568)	-55.833 (-2.0708)	-0.0008 (-0.7618)	
Profit	0.7927	-0.0027 (-1.4353)	0.3241 (1.0492)	0.2976 (0.1109)	-53.4507 (-2.3521)	-0.0007 (-0.8898)	0.0329 (1.6291)

Table C.15 Regression Output US Small Cap Companies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.1645	0.0472 (1.2551)					
Ownership	0.1648	0.0462 (1.0182)	-0.0136 (-0.0467)				
Age	0.1651	0.0471 (0.8953)	-0.0274 (-0.0648)	0.3839 (0.0487)			
Industry	0.1682	0.0417 (0.5998)	-0.0078 (-0.0161)	-0.1999 (-0.0208)	-10.7591 (-0.1374)		
Turnover	0.2565	-0.0017 (-0.0172)	0.8500 (0.6315)	-11.0718 (-0.5900)	21.3985 (0.2252)	-0.0977 (-0.6889)	
Profit	0.3612	-0.0168 (-0.1585)	1.3073 (0.8267)	-15.6986 (-0.7426)	37.2287 (0.3574)	-0.0574 (-0.3534)	-0.6108 (-0.7014)

Table C.16 Regression Output Emerging Economies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.0465	0.0054 (1.9503)					
Ownership	0.1187	-0.0054 (-1.0580)	0.5531 (2.5118)				
Age	0.1259	-0.0050 (-0.9815)	0.5279 (2.3664)	1.0665 (0.7885)			
Industry	0.2319	-0.0035 (-0.7133)	0.5020 (2.3832)	0.4278 (0.3312)	-47.4454 (-3.2171)		
Turnover	0.2593	-0.0088 (-1.5184)	0.5009 (2.4054)	-0.0598 (-0.0456)	-48.0168 (-3.2924)	0.0114 (1.6553)	
Profit	0.2608	-0.0101 (-1.4942)	0.5059 (2.4107)	-0.0702 (-0.0533)	-48.0262 (-3.2740)	0.0099 (1.2811)	0.0301 (0.3825)

Table C.17 Regression Output Developed Economies

	R ²	Size	Ownership	Age	Industry	Turnover	Profit
Size	0.0065	-0.0027 (-0.7139)					
Ownership	0.0075	-0.001 (-0.1396)	-0.1039 (-0.2855)				
Age	0.0114	-0.0012 (-0.1733)	-0.1514 (-0.4030)	3.9428 (0.5447)			
Industry	0.0128	-0.0012 (-0.1592)	-0.1828 (-0.4689)	4.4777 (0.6001)	37.0636 (0.3289)		
Turnover	0.0128	-0.0011 (-0.1520)	-0.1832 (0.4665)	4.4607 (0.5918)	36.6411 (0.3201)	-0.000002 (0.0275)	
Profit	0.0132	-0.0019 (-0.2157)	-0.1898 (-0.4774)	4.5041 (0.5933)	36.1709 (0.3138)	-0.0002 (-0.1612)	0.0150 (0.1593)

Table C.18 Regression Output Developed Economies (Out of Sample Data)

	R ²	Size	Ownership	Industry
Size	0.2001	-0.0824 (-1.8717)		
Ownership	0.2154	-0.0942 (-1.8476)	-0.0053 (-0.5035)	
Industry	0.3569	-0.0959 (-1.9957)	0.0003 (0.0287)	-12.6832 (-1.6249)

Table C.19 Regression Output Emerging Economies (Out of Sample Data)

Table 4.38: Regression Output Emerging Economies (Out of Sample Data)				
	R^2	Size	Ownership	Industry
Size	0.0243	0.0013 (0.4464)		
Ownership	0.1474	0.0004 (0.1304)	-0.1030 (-1.0052)	
Industry	0.8084	0.0023 (1.4036)	0.1101 (1.5650)	-207.2950 (-4.5499)

Table D.1 (a) Overview of Industry Means, Medians, and Standard Deviations

	Financials	Consumer	Industrials	Consumer	Materials
2010					
Mean	6.5209	1.2850	1.0523	-0.4815	0.4940
Median	6.4484	0.8576	0.9003	0.5294	0.4448
Standard Deviation	4.3691	3.1520	1.0081	4.8242	0.7610
2009					
Mean	6.2140	7.0477	0.7676	0.6122	10.9513
Median	6.4686	0.8274	0.8529	0.4886	0.7093
Standard Deviation	4.3618	20.4174	1.3760	0.8983	41.3946
2008					
Mean	6.6054	-0.7631	0.8120	0.6625	1.3406
Median	7.0061	0.7936	0.8180	0.5398	0.5905
Standard Deviation	4.5703	8.6666	1.2285	0.9287	2.9141
2007					
Mean	6.7056	0.0775	0.8344	0.6080	0.7644
Median	7.8626	0.5686	0.9412	0.4747	0.5112
Standard Deviation	5.0460	4.3714	1.0806	0.6850	1.0268
2006					
Mean	6.7114	0.1472	1.1231	0.5691	0.7855
Median	7.7529	0.4725	1.0147	0.4528	0.4658
Standard Deviation	4.9247	3.3835	1.4095	0.5538	0.8927
2005					
Mean	5.2553	1.6476	1.4035	0.6678	0.7372
Median	7.7395	0.6053	1.1971	0.5465	0.4999
Standard Deviation	18.1236	4.0224	1.9302	0.6967	1.5092
2004					
Mean	5.8940	1.4839	0.6465	0.6867	2.0294
Median	7.1307	0.6297	0.8993	0.5846	0.5259
Standard Deviation	5.6342	2.8451	1.8553	0.6498	5.2284
2003					
Mean	6.3694	1.7796	1.3572	0.8120	0.9385
Median	6.9476	0.6582	1.2238	0.5785	0.6819
Standard Deviation	5.3540	5.3000	1.8761	0.8272	1.1103
2002					
Mean	6.8223	1.7502	1.2449	0.3848	0.7559
Median	6.9866	0.6628	1.4923	0.5695	0.7644
Standard Deviation	5.7503	5.2553	1.3171	0.9934	1.4722
2001					
Mean	7.7072	-2.0954	1.1358	0.5416	-1.3222
Median	7.4338	0.6804	0.9748	0.6860	0.7335
Standard Deviation	14.0933	14.9445	1.1882	0.8342	9.3092

Table D.1 (b) Overview of Industry Means, Medians, and Standard Deviations

	Technology	Energy	Diversified	Telecommunication	Health	Utilities
2010						
Mean	19.4898	1.0675	1.2555	1.4151	0.5151	5.9725
Median	0.1846	0.8325	0.9500	1.0890	0.5507	5.9725
Standard Deviation	69.2390	1.1940	1.5623	1.6311	0.3585	8.2872
2009						
Mean	-3.0454	0.8456	1.8093	3.7865	0.5268	6.1453
Median	0.1480	0.6602	1.8251	0.9498	0.5323	6.1453
Standard Deviation	11.1845	0.6469	1.5642	8.8509	0.3666	8.5400
2008						
Mean	1.4724	1.0204	1.8748	-0.4798	0.4997	7.6561
Median	0.2952	0.7303	1.6145	0.6196	0.4621	7.6561
Standard Deviation	3.1033	1.2161	1.7035	3.9846	0.3495	10.6953
2007						
Mean	1.3220	1.0066	1.9527	0.3121	0.4916	21.6412
Median	0.2215	0.7588	1.4831	0.6514	0.4204	21.6412
Standard Deviation	2.6333	1.0900	2.0848	1.1095	0.3915	30.4845
2006						
Mean	0.7387	0.8641	2.4827	0.7927	0.5344	8.9887
Median	0.3243	0.7720	1.4681	0.7516	0.3961	8.9887
Standard Deviation	1.2734	0.5741	3.4582	0.6579	0.4692	12.5950
2005						
Mean	2.6776	0.8777	-4.0085	0.5529	0.4436	5.8618
Median	0.2610	0.5995	0.5948	0.6115	0.4868	5.8618
Standard Deviation	8.2913	0.7438	17.5113	0.4475	0.2755	8.0261
2004						
Mean	-0.1436	0.5491	2.1699	0.5865	0.5120	4.6515
Median	0.2699	0.5360	1.6007	0.6899	0.5615	4.6515
Standard Deviation	3.4785	0.6065	2.6521	0.4179	0.3386	6.5383
2003						
Mean	15.1485	0.6469	1.6861	0.6865	0.5217	49.9758
Median	1.0323	0.6158	1.6512	0.8216	0.5527	49.9758
Standard Deviation	39.6421	0.5531	1.4752	0.5075	0.4034	70.4478
2002						
Mean	10.9974	1.2730	1.6266	-1.2064	0.5337	16.1933
Median	0.8834	0.9113	0.9895	1.0731	0.5436	16.1933
Standard Deviation	35.8971	1.3179	1.5149	6.0950	0.4956	22.6635
2001						
Mean	-1.0566	1.1919	1.5320	0.7404	0.5747	3.2431
Median	0.6615	0.7608	1.1251	1.0229	0.5025	3.2431
Standard Deviation	7.8324	1.2983	1.4395	0.5635	0.5792	4.2824