

**Capital Structure of Publicly Listed Companies  
and State-Owned Entities in Fiji**

By

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of the Requirements for the degree of  
Master of Commerce in Accounting**

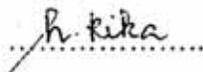
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2009

# DECLARATION OF ORIGINALITY

## Statement by Author

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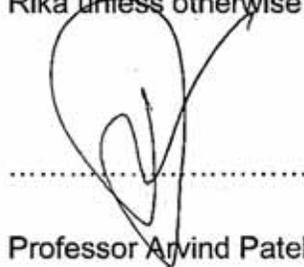
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## Statement by Supervisor

I hereby confirm that the work contained in this thesis is the work of Nacanieli Rika unless otherwise stated.

  
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8 October 2009

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# ABSTRACT

The present study provides evidence that the determinants and theories of capital structure are applicable, relevant and transferable to small island states. Among firms in Fiji, leverage is positively correlated with firm size and inversely correlated with tangibility and both past and present profitability.

In addition, the study finds that state-ownership is a significant and positive predictor of leverage. State-owned entities have a significantly higher propensity to borrow than publicly listed companies. This can be explained by several differences between the two groups. First state-owned entities carry higher levels of non-current assets which must be financed through debt or equity. Second state-owned entities are demonstrably less profitable and carry lower levels of retained profits. This conundrum leads them to acquire debt, in line with the pecking order theory. Third, some state-owned entities are able to borrow under government guarantee. This discounts their cost of debt and facilitates greater borrowing.

The results conflict with a previous study in China which reported an inverse correlation between state-ownership and leverage (Chen and Strange 2005). This contradiction may be explained by different political systems and governance structures in the two countries. A Vietnamese study attributed higher leverage among state-owned entities to preferential treatment from state-owned banks (Nguyen and Ramachandran 2006). The present study clarifies that state-owned entities are more highly leveraged even when they have to obtain loans from commercial banks.

Compared to state-owned entities, publicly listed companies are found to be more profitable and less leveraged. They also carry a lower proportion of non-current assets. In spite of the prospects of such benefits from privatization, divestment remains limited. Government may be reluctant to divest ownership for three reasons. First it may fear that listed companies would place less emphasis on social obligations. Second, certain state-owned entities may be retained for reasons of national importance and security. Third, profitable state-owned entities reduce budget deficits by generating regular dividend streams.

Government can reduce budget deficits by withdrawing guarantees and soft loans currently provided to several entities. This may force such entities to exercise greater financial discipline. However government is subject to political pressure from lobby groups representing various interests. As such, it must demonstrate strong political will if it is committed to public enterprise reform. State-owned entities must also be encouraged to utilise their assets more efficiently and divest those which are not productive.

Firms in Fiji employ more equity than debt. Equity financing is generally represented by retained profits rather than the issue of new shares. This is consistent with the pecking order theory which asserts that firms prefer internal funding to external funding. Only the smallest firms on the South Pacific Stock Exchange (SPSE) have issued additional shares since they were listed. However such issues have been restricted to directors, employees and existing shareholders. This highlights the need for the Capital Markets Development Authority (CMDA) and SPSE to encourage the issue and trading of shares. In this regard, CMDA and SPSE may encourage government to divest some of its shares in profitable state-owned entities through initial public offerings.

The inverse relationship between leverage and profitability provides comprehensive support for the pecking order theory but is contrary to expectations based on the static trade-off theory. Similarly, the wide variation in debt levels for each organisation does not support the existence of a well-defined target debt ratio as predicted by the static trade-off theory. However, larger firms employ higher leverage than smaller ones which is consistent with both the static trade-off theory and the political cost hypothesis.

While the regression model is able to explain more than half of the variation in leverage, it also indicates that there are other determinants of capital structure, which have not been identified in the present study. Future studies may investigate how leverage is affected by other variables such as firm age, governance structures and shareholder diversification.

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# **CHAPTER ONE**

## **INTRODUCTION**

## 1.1 Introduction

Effective management of capital structure benefits an organisation in several ways. These include; a reduction in its cost of capital, increased profitability, greater returns to shareholders and higher share prices.

Although numerous studies have analysed the relationship between capital structure and profitability (Booth et al. 2001; Krishnan and Moyer 1996; Rajan and Zingales 1995), they have concentrated mainly on organisations with profit-making motives. This thesis extends knowledge in the discipline by comparing the capital structure of publicly listed companies with that of state-owned entities (SOEs), to determine any significant differences between the two groups.

Since state-owned entities are required to fulfill both commercial and social objectives (Public Enterprise Act 1996; Sarker and Pathak 2003) they may be less motivated to maximise profits in comparison to listed companies. In light of their social obligations, it may also be perceived as inappropriate for them to generate and report high profits. This is reflected in the benchmarks which government sets for their return on investment; their targets are considerably lower than those required in the private sector. Consequently, state-owned entities may have less incentive to seek increased profitability through management of their capital structure.

Given their lower profitability, state-owned entities are likely to have less retained profits for re-investment (Ministry of Finance and National Planning 2006). Accordingly, they must seek more external finance. In addition, they have the potential to borrow more heavily than publicly listed companies. This is facilitated by government guarantees that support their applications for, and issue of, debt. For example, the Fiji Electricity Authority (FEA) and the Housing Authority have been issuing bonds under government guarantee for more than 20 years, while the Public Rental Board (PRB) has used similar guarantees to issue promissory notes. Extreme results of such borrowing are evident at PRB, which is technically insolvent. The directors have highlighted the need to restructure its balance sheet, in order to deliver the return required by government (PRB 2007). This is part of the strategy previously adopted by the

Housing Authority, which improved its efficiency and profitability through restructuring its balance sheet, reducing costs and making sound investments (anon (b) 2006).

### **1.1.1 Social Obligations of State-Owned Entities**

The impact of social obligations on profitability is most evident among commercial statutory authorities such as FEA, the Housing Authority and PRB. In 2007, FEA recorded a return on shareholders' funds of 2.8 percent (FEA 2008). This was considerably less than the return on equity for large publicly listed companies such as: Amalgamated Telecom Holdings Limited, which recorded 18.3 percent (ATH 2007); and Foster's Group Pacific Limited, which reported 14.1 percent (FGP 2007).

In 2007, the actual cost of social or non-commercial obligations to FEA was estimated at \$15 million. This represented the cost of providing subsidised electricity to the islands of Vanua Levu and Ovalau as well as rural areas on the main island of Viti Levu. These costs are not refunded by government; instead they are recognised as an annual dividend received from FEA. Had the cost of social obligations been excluded, it is calculated that FEA would have generated a return of 5.4 percent. This is still significantly less than the target of 10 percent set by government (FEA 2008).

Between 2002 and 2006, the return on equity for the Housing Authority ranged from 1.40 percent to 5.68 percent. Prior to 2002, the entity reported negative returns (Housing Authority 2007). In 2004, the organisation produced a return of 5.00 percent (Housing Authority 2005); in 2005, it delivered a return of 5.68 percent, against a stretch target of 8.00 percent (Housing Authority 2006) and in 2006 it recorded a return of 4.3 percent compared to the target of 5.3 percent (Housing Authority 2007).

In accordance with its social objectives, the Housing Authority provides affordable housing, with priority given to low income earners and those whose needs have not been adequately met in the private sector. These objectives are partly funded by government grants and achieved in three ways. First, the Housing Authority ensures that not less than 50 percent of housing assistance is received by households with an annual income of \$16,500 or less. Second, it

subsidises interest rates to households with a total income of less than \$6,500. In this regard, it provided a two percent subsidy to 298 families and 46 village housing schemes during 2006. Third, the authority provides financial assistance to defaulting customers who experience financial difficulties due to old age, retirement, loss of income or sickness. This enables them to meet loan repayments and retain their homes. In 2006, financial assistance valued at \$150,000 was provided to 11 such customers (Housing Authority 2007).

PRB was established in 1989 and provides affordable rental accommodation to low income earners on a transitional basis. In 2004, KPMG calculated that PRB was losing \$0.7 million in revenue by failing to charge market rents. This represents a social subsidy provided by the entity, over and above the annual subsidies paid by government in the form of grants. It reflects the social cost of caring for financially disadvantaged tenants, in accordance with the social objectives of the entity (PRB 2005).

### **1.1.2 Rationale for the Present Study**

Public sector reform emerged as a global phenomenon in the late 1970s and has been implemented in many nations around the world. It first appeared in Fiji in the late 1980s and has focused on three broad areas. These include civil service reform, financial management reform and public enterprise reform (Laqeretabua 2005; Ministry of Finance and National Planning 2006).

The present research is concerned with public enterprise reforms. These reforms have been driven by the perceived failure of state-owned entities combined with pressure from aid donors such as the Asian Development Bank (ADB) and the World Bank. Another significant influence has been the implementation of such reforms by Australia and New Zealand, whose strategic direction Fiji has tended to follow (Sarker and Pathak 2003).

In Fiji, the reform of a public enterprise generally consists of three stages. The first is reorganisation, which involves implementation of business-oriented managerial practice. The second phase is corporatisation, whereby a government department or statutory authority is transformed into a limited liability company, with purely commercial objectives. The final stage is privatisation. At this stage, government may divest part or all of its shareholding

to private investors. This generally happens after the company has become commercially viable, since it can then be sold for a higher price. Examples of divestment include the sale of controlling interests in: the National Bank of Fiji, to Colonial Insurance; and Amalgamated Telecom Holdings Limited, to the Fiji National Provident Fund (Sarker and Pathak 2003).

The Public Enterprise Act of 1996 provides a clear mandate for the re-organisation of state-owned entities with the objective of increasing accountability, efficiency, productivity and ultimately profitability (Ministry of Finance and National Planning 2006).

Despite expectations that reformed public enterprises would deliver profitable returns and yield high dividends, few of them have made profits and even fewer have paid dividends (Sarker and Pathak 2003). In 2006, the Minister of Public Enterprises and Public Sector Reform accused state-owned entities of three specific weaknesses; low profitability, excessive expenditure and heavy borrowing. At the time, state-owned entities were delivering an average return on shareholders' funds of around 3 percent, which was significantly less than the 15 percent required by investors in the private sector (anon (a) 2006). One extreme example is Fiji Ships and Heavy Industries Limited (FSHL), which recorded four successive losses from 2001 to 2004. This performance was particularly disappointing since government had spent \$6.5 million to acquire the facility in 2001 and an additional \$2.85 million to refurbish it (Baselala 2005).

High levels of expenditure among state-owned entities place considerable pressure on the government budget, through grants for operating and capital expenditure. In 2006, this was estimated to account for 30 percent of Gross Domestic Product (GDP). The problem is further compounded by high borrowing costs faced by government. At the end of 2005, total borrowing by state-owned entities amounted to \$541 million and represented 11 percent of GDP. A large proportion of these funds was guaranteed by government (anon (a) 2006).

In light of the problems highlighted above, public enterprises were challenged to become more profitable, investment-oriented and less dependent on government funding. Government's Strategic Development Plan (SDP) for 2007

to 2011 included several benchmarks designed to meet these objectives, such as delivering a 10 percent rate of return and reducing contingent liabilities (including loan guarantees) to less than 10 percent of GDP.

Improved profitability of state-owned entities delivers several benefits for stakeholders. The reduction in government expenditure enables it to reduce personal and corporate taxes while increased returns on investment provide government with more funds to meet its social objectives. Profitability also attracts private investors. Public-private partnerships enable state-owned entities to adopt best-practice and improve their efficiency and productivity. This further enhances profitability, reduces prices and improves service delivery (anon (a) 2006; Laqeretaua 2005). Towards this end, government expressed its intention to divest at least 10 state-owned entities, including Airports Fiji Limited, Fiji Broadcasting Corporation Limited, Fiji Ships and Heavy Industries Limited, Food Processors Limited, Rewa Rice Limited and Ports Terminal Limited (Ministry of Finance and National Planning 2006).

Against the background of public enterprise reform outlined above, the present study compares the capital structure of state-owned entities with that of publicly listed companies and investigates the interaction between leverage and profitability.

### **1.1.3 Objectives**

The general objective of this study is to determine and compare the factors which impact upon the capital structure of large organisations throughout Fiji, including publicly listed companies and state-owned entities.

The specific objectives of this study are to:

1. Calculate levels of leverage among selected entities in Fiji.
2. Analyse the composition of capital structure for these entities.
3. Determine the relationship between leverage and profitability among these entities.

4. Compare capital structure of publicly listed companies with that of state-owned entities.
5. Explain differences in capital structure between publicly listed companies and state-owned entities identified in 4 above.

#### **1.1.4 Contributions**

This study makes two important contributions. First it will extend knowledge in the discipline by comparing leverage in state-owned entities and publicly listed companies. Previous comparative studies have focused on leverage across national boundaries (Booth et al. 2001; Krishnan and Moyer 1996; Panno 2003; Rajan and Zingales 1995) or differences based on firm size (Voulgaris et al. 2004), but failed to adequately examine how leverage of state-owned entities differs from that of publicly listed companies, given their significantly differing objectives. For example, Rajan and Zingales (1995) excluded state-owned entities from their sample, while Krishnan and Moyer (1996) eliminated all companies in which government owned a majority of the equity.

The findings of the present study are expected to be of interest to other countries which, like Fiji, are committed to reducing government expenditure and the size of their public service by divesting state assets through programmes of corporatisation and privatisation. The study will indicate how profitability and capital structure may be affected when the requirement to meet social objectives is withdrawn.

Second, while several studies have examined capital structure in developed countries (Dessi and Robertson 2003; Krishnan and Moyer 1996; Rajan and Zingales 1995) and larger developing nations (Al-Sakran 2001; Booth et al. 2001), little is known about leverage in small island states, apart from a study conducted in Mauritius (Manos and Ah-Hen 2003). The present study addresses that gap in the context of Fiji, which has a small and relatively under-developed capital market.

This study will provide insight on the extent of similarity or divergence between capital structures in small island states and larger economies. In particular, it will indicate whether capital structure is influenced by the same variables that

are influential in larger countries, and whether these variables have the same effect. For instance, a study of 10 large developing nations observed that the signs on some coefficients were opposite to what had been observed in more developed economies (Booth et al. 2001). The findings of the present study will be of interest to other small developing nations, particularly those whose capital markets are in their formative stages.

### **1.1.5 Implications**

The findings of this empirical study may be useful for various individuals and organisations in Fiji.

Studying the relationship between firm type (state-owned or publicly listed) and level of leverage will indicate the extent to which choices concerning capital structure are affected by the presence of social objectives. These findings will assist the Ministry of Public Enterprise in evaluating and reviewing the objectives of state-owned entities. Moreover, the study will help to predict anticipated changes in leverage for state-owned entities that are earmarked for corporatisation. These include the departments of: Government Supplies; National Roads; and Water and Sewerage (Ministry of Finance and National Planning 2006).

The study will suggest strategies and structures, which can be implemented to facilitate private investment, based on the financing behaviour of the organisations being studied. In particular, it will indicate whether such developments should focus on debt or equity. This may assist the Capital Markets Development Authority (CMDA) in formulating appropriate policies and regulations.

The findings of this study will provide financial institutions with insight concerning the relative popularity of different forms of debt financing. It will also indicate whether certain debt instruments have gained or declined in popularity over time. This will enable banks and other lending institutions to develop, tailor and promote a portfolio of financial products that meet market requirements.

The regression model developed in this study may assist financial analysts and planners at a macroeconomic level. The correlation between variables will help

them to predict likely changes in leverage based on alternative values of explanatory accounting variables, such as profit. Conversely, the model will indicate what adjustments are required to each variable in order to maintain desired levels of borrowing and leverage. This may also provide guidance to managers in evaluating and selecting appropriate capital structures for their entities.

As the first study to investigate leverage among entities in Fiji, the findings will be of particular interest to academics. They will provide insight concerning financing choices made by managers, indicating whether they are consistent with choices made in other countries. In contributing to the body of knowledge on financial leverage in Fiji, the study will provide empirical evidence to demonstrate the extent to which financial concepts are applicable, relevant and transferable.

The remainder of this chapter outlines the concept of capital structure and discusses its implications on the value of a firm.

## **1.2 Capital Structure**

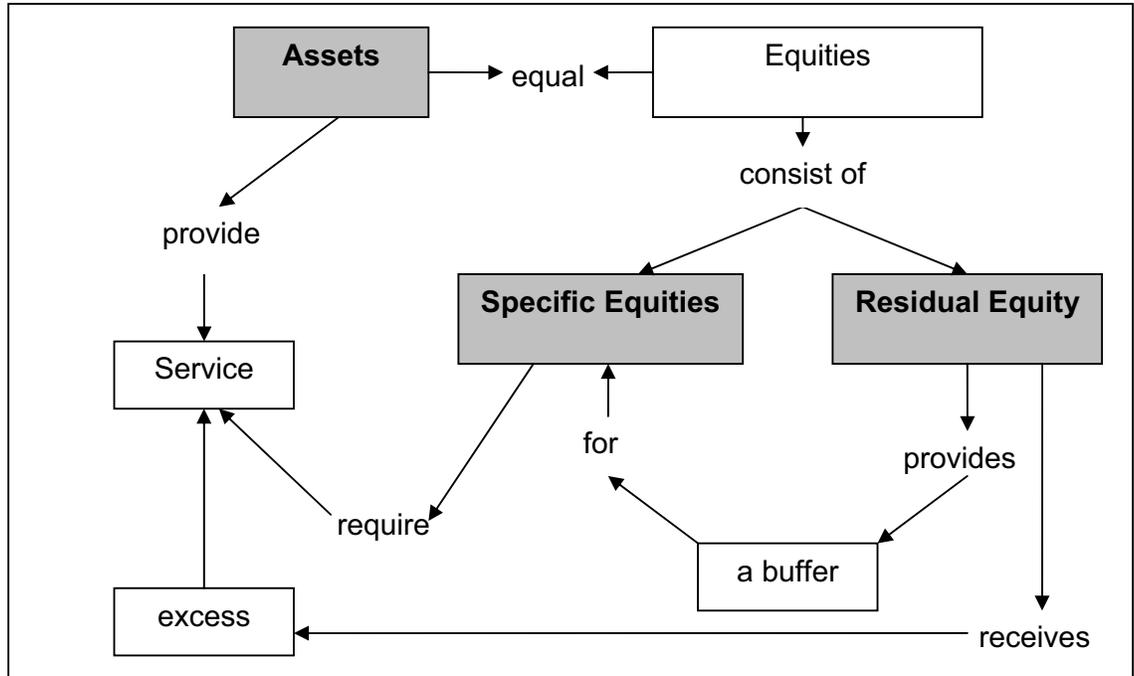
### **1.2.1 Background**

The financial position of an entity is summarised in its balance sheet, which is a complete statement of the properties and equities pertaining to a particular enterprise. A property represents a resource or asset to which the enterprise has title while an equity represents the value of a right in a property. Without the co-existence of equities and properties, there could be no accounting equation (Paton 1973).

Under investor theory, the financing side of the balance sheet is the aggregate of specific equities and residual equity, as illustrated in figure 1.1. Specific equities include liabilities and preference shares, while residual equity represents ordinary share capital. Specific equities are measurable rights to receive specified services from the entity. These rights are definite and enforceable. On the other hand, residual equity represents the right to receive any services that the entity is capable of providing after it has fulfilled the terms of specific contracts. In other words, investor theory regards residual equity as a

junior claim or a buffer for all other equities. As such, changes in residual equity (through profit) are of interest to all investors, since they represent a change in the buffer (Staubus 1971).

**Figure 1.1** The Balance Sheet, under Investor Theory



In summary then, the assets of an entity can be financed through:

1. specific equities (hereafter referred to as debt or liabilities);
2. residual equity (hereafter referred to as equity or shareholders' equity); or
3. some combination of specific and residual equities.

### 1.2.2 Definitions

Capital structure is the particular combination of debt and equity which an organisation selects to finance its assets. More specifically, it relates to long-term finance and excludes short-term financing arrangements, such as bank overdrafts and trading accounts with suppliers.

Ideally, non-current assets are financed using long-term financing options, while current assets are financed through short-term debt (Booth et al. 2001). An entity acquires non-current assets with the intention of using them for longer

than one year, while current assets will be converted into cash within the entity's normal operating cycle or one financial reporting period of 12 months. Plant, property and equipment generally represent a significant component of non-current assets (IASB 2007).

Financial leverage is the extent to which an entity relies on debt financing. A firm that uses a relatively higher proportion of debt in its capital structure is said to be more highly levered.

### **1.2.3 Implications**

Decisions about capital structure are critical, since financial leverage can positively affect cost of capital, share price, return to shareholders and ultimately the value of the firm. These benefits will now be summarised; they are directly related to differential tax rates on corporate and personal income.

#### **1.2.3.1 Earnings per Share (EPS)**

EPS is equal to profit after tax divided by the number of issued shares. Mathematically, it can be shown that increasing the proportion of debt in the capital structure leads to higher levels of EPS (see for example Beal et al. 2005).

By converting equity to debt, a firm reduces the number of issued shares. The higher level of debt causes an increase in interest expense, but this is partially off-set by tax shields, since interest is deductible for tax purposes.

Although additional debt generates greater returns per share, the returns are off-set by increased financing risk associated with carrying additional debt. This trade-off is discussed in greater detail under the static trade-off theory in chapter two of this thesis.

#### **1.2.3.2 Cost of Capital and Share Price**

The cost of debt is generally lower than the cost of equity. One significant reason for this is the greater risk associated with equity. As illustrated in figure 1.1, shareholders have a junior claim over the assets of the business. They are only entitled to a dividend from after-tax profits, which depend on the financial

performance of the business. Shareholders can only be paid after all senior claims have been serviced. By contrast, the return to debt-holders is fixed, guaranteed and often protected by collateral. In addition, debt-holders take priority upon liquidation, while shareholders are only entitled to participate in any residual equity, after the claims of all creditors have been settled.

The cost of debt is further reduced by tax shields. As a result, the weighted average cost of capital (WACC) for a particular firm will decrease as it assumes more debt. By definition, share price is inversely related to the cost of capital. Consequently, the price of a firm's shares is maximised at the level of debt for which WACC is minimised.

#### 1.2.3.3 Firm Value

The value of a firm can be calculated from the present value of future cash flows to its financiers. This is essentially equal to the sum of discounted dividends and interest. Since dividends are paid out of after-tax profits, while interest is paid from pre-tax profits, debt-financing effectively enables the firm to provide a greater total return to its financiers.

#### 1.2.4 Counter-Arguments

There are also some arguments which question the importance of capital structure. They will be briefly summarised and refuted below; however a more comprehensive discussion of these issues is beyond the scope of this thesis.

##### 1.2.4.1 Irrelevance of Capital Structure

Modigliani and Miller (1958) argued that capital structure is irrelevant, since it is impossible to increase the value of a firm simply by re-structuring its finances. Their conclusions were based on simplifying assumptions such as: the availability of perfect, costless information; and the absence of taxes. For instance, there is no tax advantage from debt financing if interest cannot be deducted for tax purposes. Likewise, if all investors have unrestricted access to a complete set of information about capital markets, there is no chance of profits or losses from information asymmetry.

However these assumptions do not hold in reality since interest is tax-deductible in many jurisdictions. Furthermore, not all information about firms is available in the public domain. In particular, investment opportunities are regarded as proprietary information and generally known only by management and staff of individual firms. The implications of such information asymmetry will be discussed in greater detail in chapter two. Finally, it is costly to obtain, analyse and compare information on the performance of firms. These costs may involve personal time as well as payments to financial analysts and subscriptions for access to financial databases.

#### 1.2.4.2 Homemade Leverage

If personal and corporate rates of income tax are equal, it may be possible for individuals to undo the effects of corporate leverage by practicing their own – or homemade – leverage. Shareholders who are unhappy with the capital structure selected by management can assume debt in their own right by borrowing to finance their equity investment in the firm.

However, when corporate tax rates are higher than personal tax rates, corporate borrowing will always be preferred since it generates greater tax shields. In addition, interest rates charged to individuals tend to be higher than those offered to firms, since the latter generally have greater negotiating power and carry lower risk, for reasons that will be explained in chapter two. Therefore, homemade leverage is a sub-optimal alternative to corporate leverage.

#### 1.2.4.3 Dividend Imputation

The tax advantage of debt can also be off-set through dividend imputation, as practiced in Australia (Pattenden 2006). Under this system, firms convey a tax credit to shareholders, together with any dividend paid. Shareholders can only be taxed to the extent that personal tax rates differ from corporate tax rates or if the dividend relates to income that is exempt from tax in the hands of the company. Dividend imputation off-sets the advantage of corporate leverage, ensuring that the total amount of tax charged remains the same, irrespective of whether debt is assumed by the firm or individual shareholders.

However, in jurisdictions which do not practice dividend imputation, dividends are liable to double taxation; initially in the hands of the company and subsequently in the hands of shareholders. On the other hand, interest is only taxed once; when received by lenders. As such, debt is preferable to equity.

### **1.3 Summary and Organisation of Thesis**

This chapter has introduced the concept of capital structure and explained its implications for a firm. In particular, financial leverage enables an enterprise to increase its profitability through tax shields and a lower cost of capital. However, profitability is not the only consideration for state-owned entities. In making operating, investing and financing decisions, they must also carefully consider the implications on their social obligations.

As a result of their lower profitability, state-owned entities are likely to have less retained profits available for re-investment. Consequently, they have a higher propensity to borrow and this is often facilitated through government guarantees. Therefore, the capital structure of state-owned entities may be expected to differ from that of publicly listed companies.

In comparing the capital structure of state-owned entities and publicly listed companies, the present study makes an important contribution to the body of knowledge in the discipline. It examines how public enterprise reform may benefit the nation through reduced pressure on government expenditure, borrowing and debt-servicing. In addition, it analyses capital structure in the context of a small island state, which has under-developed capital markets. This will verify the extent to which financial concepts are transferable to small, emerging economies.

The remainder of the thesis is organised as follows: chapter 2 discusses theories and determinants of capital structure; chapter 3 describes capital markets in Fiji and the financing options currently available; chapter 4 analyses the capital structure of selected firms in Fiji; chapter 5 discusses the methodology, data and regression model before analyzing and interpreting results of the empirical analysis; while chapter 6 deals with conclusions and recommendations.

## **CHAPTER TWO**

# **THEORIES AND DETERMINANTS OF CAPITAL STRUCTURE**

## **2.1 Introduction**

Chapter one introduced the concept of capital structure and outlined several ways in which an entity can benefit from financial leverage. This chapter reviews the literature relating to capital structure and is divided into three parts.

The first section describes several theories which have been used to explain the behaviour and practices of entities in managing their capital structure. These theories are widely referenced in previous empirical studies and include the static trade-off theory, pecking order theory and agency theory framework.

To distinguish between the static trade-off theory and the pecking order theory, many researchers examine the nature of the correlation between leverage and specific firm characteristics, notably profitability (see for example Manos and Ah-Hen 2003). Accordingly, the second section of this chapter describes the determinants of capital structure identified in previous studies. These include firm size, profitability, tangibility of assets, tax rates and growth prospects.

The third section of this chapter summarises previous attempts to incorporate state-ownership as a variable in empirical studies of capital structure. It highlights the shortcomings of these studies and indicates how they are addressed in the present study.

## **2.2 Theories of Capital Structure**

### **2.2.1 Static Trade-off Theory**

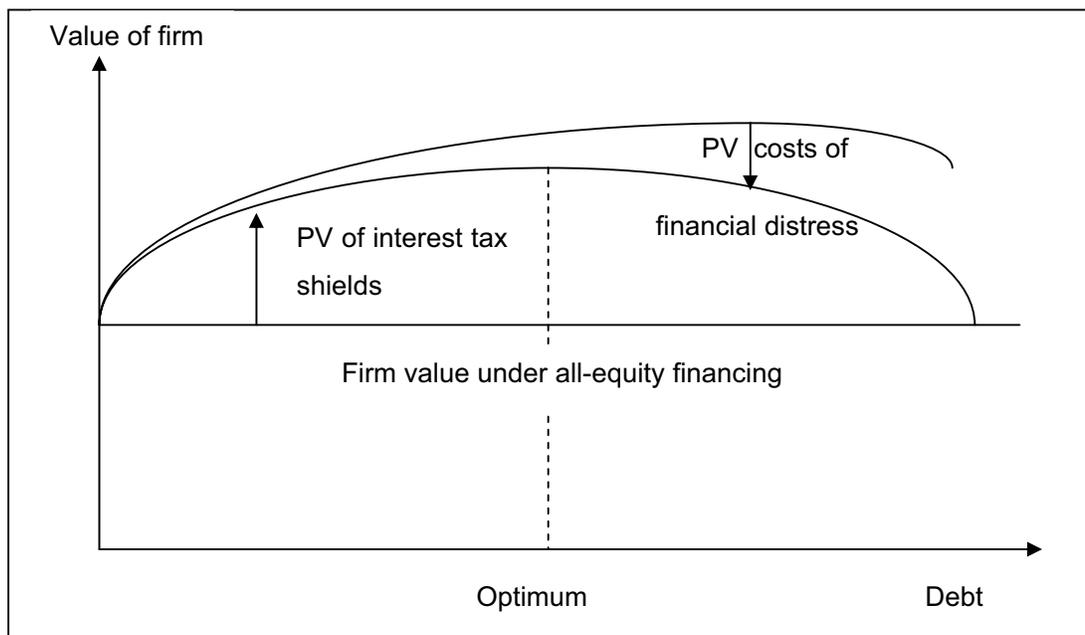
Under this theory, an entity is regarded as setting an optimum or target debt ratio and gradually moving towards it (Myers 1984). Firms operating below the optimum ratio are expected to assume additional debt, while those operating above the target are predicted to reduce their debt levels by issuing equity.

In figure 2.1, the value of the firm is measured in terms of expected cash flows. As illustrated, the target ratio is the capital structure which maximises firm value.

In general, more profitable firms will assume higher levels of debt in order to reduce their tax burden by maximising the value of interest tax shields. However,

“Optimal capital structures involve less debt financing than the maximum amount of borrowing allowed by the capital market, and, hence, shareholder-wealth-maximizing firms will search for optimal capital structures rather than simply maximise their borrowing.” (Kim 1978: 47)

**Figure 2.1** The Static Trade-off Theory of Capital Structure



**Source** Myers, 1984: 577

The trade-off can be explained by comparing firm value below and above the target debt level. It is helpful to consider a firm which commences without any debt financing and is therefore financed entirely through equity.

#### 2.2.1.1 Below the Target Debt Level

In figure 2.1, the entity initially acquires more debt in order to benefit from tax deductions on interest, which were described in chapter one. Greater financial leverage causes the value of the firm to increase. This would seem to imply that the firm should only utilise debt financing and completely eliminate equity from its capital structure. However, when firms are subject to bankruptcy costs:

“Their debt capacities will be reached prior to one-hundred percent debt financing.” (Kim 1978: 46)

#### 2.2.1.2 Above the Target Debt Level

Beyond the optimum level of debt, the costs of financial distress begin to off-set the tax shields, leading to a reduction in the value of the firm. These costs are both explicit and implicit (Beal et al. 2005).

First, higher levels of debt introduce a greater degree of financial risk. This generates increased costs of monitoring by, and bonding with, lenders since the firm must gather and report more information. In a worst case scenario, the costs of financial distress also include the legal and administrative costs of liquidation.

Second, a financially distressed firm is likely to incur implicit costs arising from loss of market share as customers, suppliers and other stakeholders begin to withdraw their business, in anticipation that the firm may soon be declared bankrupt and forced to liquidate.

Third, loss of efficiency imposes an additional set of indirect costs since management is required to devote more time and effort to managing the financial crisis. Consequently, it has less time to manage the business and identify viable investment projects.

Finally, financial distress implies scarcity of funds. This generates an opportunity cost to the firm, since it is forced to abandon or reject viable investment proposals.

#### 2.2.1.3 Empirical Evidence

A study of US firms (Kim 1996) examined changes in leverage following tax reforms in 1986. It was based on 182 issues of equity and 44 issues of debt between 1982 and 1987. The results indicate a trade-off between tax shields and costs of financial distress, where the latter is measured by variations in operating income. As the risk of financial distress increased, there was a significant decrease in the level of debt issued by firms. This supports the

argument that costs of financial distress counter-act interest tax shields, as depicted in figure 2.1.

A Swiss study reported that firms adjust toward a target debt ratio, consistent with the predictions of static trade-off theory. These findings were based on a panel of 104 companies listed on the Swiss stock exchange. The sample included industrial, commercial and service companies over a ten year period between 1991 and 2000 (Gaud et al. 2005). The adjustment process in Switzerland is slower in comparison to other countries such as: France and Germany (Kremp et al. 1999 cited in Gaud et al. 2005); Spain (Miguel and Pindado 2001 cited in Gaud et al. 2005); United Kingdom (Ozkan 2001 cited in Gaud et al. 2005); and the United States (Shyam-Sunder and Myers 1999 cited in Gaud et al. 2005).

In relation to target debt ratios, a study of 150 firms in the United Kingdom and Italy produced conflicting results. Companies from the United Kingdom were found to:

“behave as if they had target gearing ratios in mind and they tend to adjust towards those targets; thus companies which are below their long-term debt target are more likely to issue debt.”  
(Panno 2003: 107)

However, Italian companies in the same study:

“did not behave as if they had optimal target ratios ... but ... adjust their leverage ratio in response to other circumstances.”  
(Panno 2003: 107)

In explaining the behaviour of Italian firms, Panno (2003) suggests that adjustment costs are sufficiently high so as to inhibit them from adjusting their capital structure. These costs include: penalties for early retirement of debt; and floatation costs associated with raising equity. In addition, Italian firms generally adopt a short-run perspective compared to the long-term approach adopted in the United Kingdom. Italian firms are more likely to adjust their debt ratios based on short-term considerations whereas those in the United Kingdom tend to employ financial planning, which is based on long-term targets (Panno 2003).

## 2.2.2 Pecking Order Theory

Unlike the static trade-off theory, the pecking order theory does not assume that entities have well-defined target debt ratios. The pecking order theory can be summarised as follows: when obtaining finance, firms prefer internally available funds; however, when they are required to obtain funds externally, they demonstrate a preference for debt rather than equity (Myers 1984).

### 2.2.2.1 Internal Funds Preferred to External Funds

Generally, firms prefer to use retained profits as opposed to external funds (Myers 1984). One reason for this preference is that internal funds are readily available within the firm and may be utilised at the discretion of management. Even when board approval is required, all decisions are made internally so the process is still likely to be faster than seeking funds from a third party.

Second, using internal funds eliminates costs associated with raising funds externally such as the cost of producing and issuing a prospectus followed by the administrative burden of allotting shares.

Third, internal funds are preferred because they avoid sending bad signals to investors. This is pertinent in light of information asymmetry where managers have access to a complete set of information about their firm, while potential investors do not.

“When managers know that the value of the firm is above its current market value, they will be reluctant to issue equity. Under such circumstances outsiders rely on managers’ actions as signals regarding the true value of the firm, and an issue of equity is likely to be interpreted as a bad signal. Thus, to avoid sending bad signals managers will rely primarily on internal funds.” (Manos and Ah-Hen 2003: 131)

Fourth, reliance on external finance may impose implicit costs relating to the under-pricing of new securities. By definition, share price is positively related to future dividends and growth. Therefore prospective investors would be willing to pay a higher price if they knew the net present value (NPV) of projects currently being evaluated by the firm. However, access to the full set of information is restricted to managers. Consequently, the firm is forced to reduce its issue price

because buyers do not know the true value of the securities. This represents a sub-optimal alternative for the firm, since it leads to a reduction in market value.

Rationally, the firm will only reduce the issue price to the extent that such a reduction can be recovered through investment projects with positive NPV already known to managers. However, if the differential in issue price exceeds the expected NPV of investment projects, the firm will choose not to issue securities, thereby relinquishing investments with the potential to generate positive NPV. Such losses can be avoided if the firm retains sufficient internally-generated cash to cover viable investment opportunities (Myers 1984).

In summary, the greater level of internal funds available to more profitable firms implies that they have less need to borrow (Myers 1984). Consequently, the pecking order theory predicts an inverse relationship between profitability and leverage.

#### 2.2.2.2 Debt Preferred to Equity

When firms must use external funds, they prefer to use debt rather than equity. Therefore once retained profits have been exhausted, firms are more likely to issue debt or borrow funds rather than issuing equity. There are several reasons for this preference.

First, floatation costs associated with equity make it more expensive relative to debt. Second, debt financing protects the claims of existing shareholders from possible dilution through the issue of new shares.

A third factor in favour of debt relates to differentials in the issue price of securities, which were discussed above. Differentials can be reduced by issuing less risky debt, such as default-risk free debt (Myers 1984). This reduces the price differential to zero since risk free debt carries a fixed return, which does not depend on future cash flows. As such, it is unaffected by information asymmetry and ensures that firms never pass up a valuable investment opportunity. In summary:

“Managers ... prefer debt to equity because debt is less sensitive to information asymmetries.” (Manos and Ah-Hen 2003: 131)

### 2.2.2.3 Empirical Evidence

There is substantial evidence to support the pecking order theory. Several studies have observed a negative relationship between leverage and profitability. For instance, a cross-sectional study of 283 large firms in 17 industrialised countries reported an inverse relationship between leverage and past profitability (Krishnan and Moyer 1996).

Among 10 developing countries, more profitable firms generally displayed lower debt ratios (Booth et al. 2001). Similarly, a study in the United Kingdom reported a negative relationship between profitability and leverage (Dessi and Robertson 2003). In China, a study of the 50 largest companies found that profitability had a negative and significant relationship with leverage, irrespective of whether the former was lagged or not. All companies in the study were listed on the Shanghai or Shenzhen Stock Exchange (Tong and Green 2005).

There are also numerous studies which illustrate that firms prefer internal funds to external funds. Among companies in the United Kingdom and Italy, Panno (2003) found that those which had accumulated higher reserves displayed a lower propensity to borrow. Voulgaris et al. (2004) observed that Greek firms preferred retained earnings and only used debt when additional finance became essential. This was true for both small and large firms. Gaud et al. (2005) reported that Swiss companies generally used internal financing; when they needed external finance, they displayed a preference for debt.

Similar results have also been observed in a smaller capital market. A study of 24 non-financial listed companies in Mauritius observed that firms borrow less when profits are adequate to meet their financing needs (Manos and Ah-Hen 2003).

### **2.2.3 Agency Theory Framework**

In addition to the preceding theories, the agency theory framework also provides useful perspectives concerning capital structure. Agency theory describes the relationship between managers and the providers of finance, both equity and debt. Based on the underlying assumption of rational self-interest, it assumes that managers will engage in opportunistic behaviour, which can

reduce returns to shareholders (relative to managers) and debt-holders (relative to shareholders).

Managers may expropriate wealth from shareholders through risk-aversion, cash-retention and emphasis on short-term profitability rather than long-run returns. They may also transfer wealth from debt-holders through asset substitution, claim dilution, excessive dividends and under-investment.

Booth et al. (2001) assert that potential conflicts of interest between internal and external investors determine an optimal capital structure that trades off agency costs against other financing costs. The nature of the firm's growth opportunities is an important factor in the determination of agency costs. An entity with favourable growth opportunities is expected to prefer debt because existing shareholders do not wish to share the expected benefits with new shareholders. On the other hand, when a firm faces unfavourable growth opportunities, it may be expected to prefer equity.

Within the agency theory framework, two specific perspectives merit further discussion.

#### 2.2.3.1 Free Cash Flow Theory

This theory states that debt has the potential to limit the agency costs of managerial discretion by reducing access to uninvested cash flows. Since debt payments are fixed, managers must assign them a higher priority and are therefore restricted from investing in unviable projects. As such, debt is able to control the behaviour of managers, particularly those who receive bonuses which are linked to profits. In the absence of debt, management might invest in projects with negative NPV, provided the projects are able to increase earnings. Such opportunistic behaviour causes shareholders to suffer in two ways. First, bonuses result in lower levels of profit and cash in the business since they represent an expense and a cash outflow. Second, there is an opportunity cost since the shareholder would have been better-off had the firm paid the free cash out as a dividend, rather than investing in unviable projects. Shareholders could invest these dividends elsewhere, for higher returns (Beal et al. 2005).

A study of 102 non-financial Chilean companies concluded that debt is sought for its control function. Family-controlled firms were found to employ less debt in the presence of alternative control mechanisms, such as group structures or pyramids. Firms which are members of large groups used significantly lower debt in their capital structures (Ghaddar 2003).

Despite its benefits, the existence of debt may result in rejection of new projects with positive NPV, particularly if the firm is in financial distress. Faced with the threat of bankruptcy, risk-averse managers may be unwilling to accept high risk premiums associated with viable investments. Such behaviour can be explained in several ways. The first relates to the problem of under-investment. Managers may reject viable projects because debt-holders would have first claim over the incremental cash flows which they generate. Given that managers prioritise the wealth of shareholders, they are unlikely to support such investments since earnings will be used entirely for repayments to debt-holders but will not directly benefit shareholders. Second, the additional risk associated with the investments further jeopardizes managers' employment by increasing the chance of bankruptcy, loss of employment and implied reduction in future employment prospects. Third, debt financing reduces managers' control over decision-making since debt-holders are likely to monitor the firm more closely in the context of financial distress.

In summary, the free cash flow theory is useful in explaining the capital structure choices of firms which are not faced with financial distress and also have uninvested cash flows.

#### 2.2.3.2 Political Cost Hypothesis

The political cost hypothesis implies that larger firms are more likely to use accounting practices which reduce reported profits. As such, they will be more closely monitored.

US studies have found that large firms demonstrate higher leverage, consistent with the expectation that they enjoy a lower cost of capital as a result of closer monitoring. For similar reasons, regulated firms are able to borrow more (Chung 1993; Kim 1996).

Chung (1993) studied 1,449 US firms over a five year period from 1980 to 1984. The sample included 1,130 firms in non-regulated industries and 319 firms in regulated industries. Agency problems such as asset substitution and under-investment were found to play an important role in the determination of corporate financial structures (Chung 1993).

Asset substitution occurs when a firm borrows funds for one project but subsequently invests them in a more risky project, for which the financier would have charged a higher cost of capital. This problem can be avoided through explicit debt covenants and collateralisation, whereby the debt is secured over the same asset it is supposed to finance. Kim (1996) found that firms with higher ratios of tangible assets displayed greater leverage. This is consistent with the argument that tangible assets, used as collateral, serve as a bonding mechanism by reducing managers' opportunities for asset substitution.

## **2.3 Determinants of Capital Structure**

Previous research has established that leverage is determined by firm size, profitability and growth prospects as well as tax rates and the proportion of tangible assets held by the firm (Booth et al. 2001; Dessi and Robertson 2003; Krishnan and Moyer 1996).

### **2.3.1 Firm Size**

Larger firms generally demonstrate higher levels of financial leverage than smaller ones. This can be explained by the greater ability of larger firms to diversify their risk, through a broader customer base, and a wider range of investments. Lower levels of risk attract a lower cost of capital, encouraging higher levels of borrowing. This argument is consistent with the static trade-off theory, which predicts an inverse relationship between leverage and the costs of financial distress.

In terms of the political cost hypothesis, risk associated with larger firms is reduced through closer monitoring, additional disclosure and multiple sources of information. This implies that larger firms will be able to borrow more, since lenders are more confident to finance them.

On the other hand, small firms are more likely to be controlled by fewer shareholders, who may fear loss of control through restrictive debt covenants imposed by financiers. In Mauritius, for example:

“... firms ... which are typically associated with particular families, do not like the restrictions or the disclosure of information that comes with debt.” (Manos and Ah-Hen 2003: 146)

Consequently, smaller firms are less disposed to borrow. When small firms demonstrate high debt levels, it is often personally guaranteed by the owners and directors who may also pledge their personal assets as collateral. Hence, it may be more appropriate to classify such debt as personal liability or homemade leverage. This would seem to represent equity rather than externally-acquired debt (Beal et al. 2005).

Evidence of a positive relationship between size and leverage is provided in studies by Homaifar et al. (1994), Rajan and Zingales (1995), Krishnan and Moyer (1996), Al-Sakran (2001), Booth et al. (2001), Dessi and Robertson (2003), Manos and Ah-Hen (2003), Panno (2003), Voulgaris et al. (2004) and Gaud et al. (2005). Details of these studies are summarised in appendix 1 and discussed below.

A US study found that leverage was positively related to firm size, measured by the natural logarithm of total assets. The study was based on cross-sectional data for 370 companies between 1979 and 1988 (Homaifar et al. 1994).

Rajan and Zingales (1995) studied capital structure in G-7 countries, using data from 1987 to 1991. The study examined over 4,500 large, listed non-financial corporations. Firm size was measured using the logarithm of net sales. It had a significant positive effect on book leverage in US, United Kingdom, Canada and Japan. France and Italy were also characterised by positive, but insignificant, relationships. Germany was the only country for which an inverse relationship was observed and the authors were unable to explain this divergence.

Krishnan and Moyer (1996) studied 283 large corporations, drawn from 17 industrialised countries, including those in the earlier study by Rajan and Zingales (1995). Krishnan and Moyer (1996) selected non-regulated

corporations with total assets over \$5 billion. They also excluded corporations that were wholly or majority-owned by national governments. Measured by the logarithm of total assets, firm size demonstrated a significant positive relationship with leverage.

Al-Sakran (2001) studied 35 publicly traded firms in Saudi Arabia, employing data from 1993 to 1997. The sample excluded firms in the banking sector and included those involved in; agriculture, cement, electricity, manufacturing and services. Firm size was measured by the natural logarithm of total assets, and displayed a significant positive relationship with leverage.

Booth et al. (2001) analysed the capital structure of large publicly-traded firms in 10 developing countries from Africa, Asia, the Middle East and South America. The data covered the period from 1980 to 1990, although complete data for all countries were only available between 1985 and 1987. The relationship between firm size and leverage was generally positive and highly significant across most countries. The proxy for firm size was the natural logarithm of local currency sales divided by 100.

Dessi and Robertson (2003) used panel data to analyse capital structure among 557 companies in the United Kingdom, during the period 1967 to 1989. The study excluded firms from the financial and insurance sectors. A positive relationship was found between firm size and leverage. The proxy for firm size was the logarithm of real sales, based on 1985 prices.

Among 24 non-financial companies listed on the Mauritius stock exchange, Manos and Ah-Hen (2003) reported a strong, significant and positive relationship between firm size and leverage, whether size was measured on the basis of turnover or total assets. The study was based on data from 1992 to 2000.

Panno (2003) studied debt and equity securities issued in the United Kingdom and Italy between 1992 and 1996. The sample consisted of 87 security issues by firms in the United Kingdom and 63 issues by Italian firms. The study included financial companies and utilities. Measured by the natural logarithm of total assets, firm size had a positive effect on leverage in both countries.

Voulgaris et al. (2004) examined firms in the Greek manufacturing sector, including 143 small and medium sized enterprises (SMEs) and 75 large sized enterprises (LSEs). The study analysed data from 1989 to 1996 in a non-linear model, using total assets as a proxy for firm size. This was positively and significantly correlated to leverage.

Gaud et al. (2005) analysed the capital structure of 104 listed Swiss companies over the period 1991 to 2000. Using the natural logarithm of sales as a proxy, they found a significant, positive relationship between firm size and leverage.

### **2.3.2 Profitability**

Numerous studies indicate that increased profitability is associated with decreased leverage. Such findings are consistent with the pecking order theory which predicts that more profitable firms will demonstrate lower debt levels, since their profits ensure a steady supply of retained earnings, assuming a stable payout ratio.

An inverse relationship between profitability and leverage has been reported by Rajan and Zingales (1995), Krishnan and Moyer (1996), Graham (2000), Al-Sakran (2001), Booth et al. (2001), Dessi and Robertson (2003), Manos and Ah-Hen (2003), Voulgaris et al. (2004) and Gaud et al. (2005). The details of these studies are summarised in appendix 2 and discussed below.

Rajan and Zingales (1995) measured profitability using the ratio of earnings before interest, tax, depreciation and amortisation (EBITDA) to book value of assets. EBITDA approximates cash flow from operations since it eliminates non-cash expenses, financing costs and tax. Using a linear regression model, a significant inverse relationship was found between leverage and profitability in US, United Kingdom, Canada and Japan. France and Italy also demonstrated inverse relationships between the variables, although these were insignificant. An insignificant positive relationship was observed in Germany. While this was not explained by the authors, Manos and Ah-Hen (2003) suggest that lenders may deliberately target more profitable firms, assuming that profitability is a proxy for higher cash flows. This is a plausible explanation, given the dominance of bank financing in Germany. Furthermore, the German results are consistent with the static trade-off theory insofar as more profitable firms: carry

less risk of financial distress; and are more likely to assume debt in order to benefit from interest tax shields.

Krishnan and Moyer (1996) measured profitability using the five year average pre-tax margin. The profit variable displayed a significant negative coefficient in the regression model. A similar relationship was observed when US firms were excluded from the sample.

In an extensive study of US firms, Graham (2000) found that more profitable firms use less debt. This study was based on data from 1980 to 1994 and included primary, secondary and tertiary industries. Profitability was measured by the return on assets. Whereas previous studies had used debt ratios as the dependent variable, Graham (2000) employed kink, defined as the point at which marginal benefits of interest tax shields begin to decline.

Al-Sakran (2001) used a multi-linear regression model with five explanatory variables including profitability margin, measured as earnings before tax divided by sales. Profit margin for Saudi firms was significantly and negatively correlated to both long term and total debt.

In their cross-sectional regression, Booth et al. (2001) used average return on assets as a measure of profitability. The study found that more profitable firms in developing countries consistently used less debt. This was observed in the pooled data as well as country-specific data.

In the United Kingdom, Dessi and Robertson (2003) defined profitability as operating income divided by total assets. Both static and dynamic regression models were used in the study. The results demonstrated a significant negative relationship between leverage and profitability, both current (from the static model) and lagged (from the dynamic model).

A study in Mauritius (Manos and Ah-Hen 2003) measured profitability using the average profit ratio over a three year period. Profit was measured using earnings before interest and exceptional items. This was divided by total assets to determine the profit ratio. A significant negative relationship was observed between profit and leverage.

Among Greek firms, Voulgaris et al. (2004) measured profitability using net profit as a percentage of total assets. Profitability displayed a negative correlation to both total and long-term debt.

Using the EBITDA ratio as a proxy, Gaud et al. (2005) found a significant negative relationship between leverage and profitability among Swiss firms.

A dissenting result emerged in a study by Panno (2003) which measured profitability using the pre-tax profit margin. Results indicated a significant positive relationship between profitability and leverage in both the United Kingdom and Italy. There are several plausible explanations for these results. First, they are consistent with the static trade-off theory, which states that more profitable firms utilise debt to reduce their tax burden. Second, the trade off theory implies that debt-holders are more willing to lend to profitable firms, since they carry less risk of financial distress. This is especially true when profits are strongly associated with cash flows. Third, the findings are based on a different model. Unlike the other studies reported above, which generally used regression models, Panno (2003) relied on Logit and Probit models to quantify the relationship between a firm's characteristics and the probability of issuing debt or equity.

### **2.3.3 Tangibility of Assets**

Firms with higher levels of tangible assets are likely to have greater access to debt, because such assets provide collateral, which can be pledged as security. From a static trade-off perspective, tangible assets have a higher value in liquidation so they reduce risk and enable greater leverage. Similarly, firms with relatively more non-current assets may be expected to display higher levels of long-term debt since plant, property and equipment are generally pledged as security for such borrowing.

Studies by Rajan and Zingales (1995) Graham (2000), Dessi and Robertson (2003) and Gaud et al. (2005) demonstrated a positive relationship between asset tangibility and total leverage. In addition, Chung (1993), Krishnan and Moyer (1996), Booth et al. (2001) and Voulgaris et al. (2004) found a positive relationship between asset tangibility and long-term leverage. Details of these studies are summarised in appendix 3 and discussed below.

In their cross-sectional study of G-7 countries, Rajan and Zingales (1995) found evidence that tangibility of assets is positively and significantly related to leverage. The proxy for tangibility used in the study was the ratio of fixed assets to the book value of total assets. Long-term debt was not analysed separately.

Among US firms, Graham (2000) measured tangibility as the ratio of plant, property and equipment to total assets. Firms with relatively more collateral displayed higher leverage whereas those with more intangible assets used debt conservatively.

Dessi and Robertson (2003) measured tangibility as: tangible fixed assets, stocks and work in progress; divided by total net assets. A significant positive relationship was observed between tangibility and leverage.

Using a similar proxy, Gaud et al. (2005) found that tangibility was significantly and positively related to leverage among Swiss firms.

In the US, Chung (1993) used the average ratio of fixed assets to total assets as a proxy for tangibility. Firms with higher fixed asset ratios were found to use more long-term debt. This is consistent with the results from a study of 10 developing countries where tangibility was defined as total assets minus current assets, divided by total assets. In most countries, firms with more tangible assets were observed to use more long-term debt (Booth et al. 2001).

Among Greek firms, Voulgaris et al. (2004) calculated tangibility as net fixed assets divided by total assets. A positive and significant relationship was observed between tangibility and long-term debt.

Krishnan and Moyer (1996) also reported a significant positive relationship between tangible assets and long-term debt. Unlike other studies, tangibility was measured using the fixed asset turnover ratio.

Dissenting views have emerged from studies in developing countries (Booth et al. 2001; Manos and Ah-Hen 2003). Among Mauritian firms, Manos and Ah-Hen (2003) measured tangibility as the ratio of fixed assets to total assets. This was significantly and negatively correlated with leverage. Manos and Ah-Hen (2003) suggest two explanations for their findings. The first draws on agency theory.

Compared to other assets, fixed assets are easier to monitor since they are more tangible and less liquid. Consequently, firms with a higher proportion of fixed assets have less need to assume debt for monitoring purposes. Second, they suggest that a higher proportion of fixed assets may imply higher fixed costs, such as depreciation, which lead to higher operating leverage. Firms in this situation may seek to offset their operating leverage with lower financial leverage. Following this argument, firms with a higher proportion of tangible assets will assume less debt.

#### **2.3.4 Tax**

The higher the effective tax rate, the greater the benefit relating to tax deductions on interest. The static trade-off theory implies that firms facing higher tax rates should display higher levels of debt, provided they are not in financial distress. From this perspective, a firm that is tax-exempt has less motivation to enter into debt agreements than a tax-paying firm. For example, a study in Saudi Arabia reported relatively low levels of leverage. Since there is no income tax in that country, there is no benefit from tax deductions on interest (Al-Sakran 2001). The results of other studies are summarised in appendix 4 and discussed below.

Using US data, Homaifar et al. (1994) reported that leverage is positively related to the corporate tax rate in the long run, but not in the short-term. In explaining their findings, Homaifar et al. (1994) suggest that firms have an optimal capital structure in the long-run, but not in the short-run. They constantly adjust towards their optimal capital structure, but this cannot be attained in the short-run.

In their study of 10 developing countries, Booth et al. (2001) calculated a proxy for the average tax rate, by comparing earnings before and after tax. They found that debt levels actually decrease with the average tax rate. This is consistent with the results reported by Krishnan and Moyer (1996) in 17 industrialised nations. In explaining these findings, the authors suggest that the effective tax rate may actually be a proxy for profitability rather than the interest tax shield. This is based on the observation that profitable firms are required to pay tax, but unprofitable ones do not receive tax refunds (Krishnan and Moyer

1996). Therefore an inverse relationship between the tax variable and leverage may actually reflect that firms which are subject to higher tax rates are more profitable and require less debt. Consistent with this reasoning, Panno (2003) did not include a separate tax variable in the regression model. Instead, the effect of tax incentives was identified through the profitability variable.

Unlike other studies, Manos and Ah-Hen (2003) used a non-debt tax shield in their regression model. This was calculated as depreciation divided by total assets. A positive relationship was noted between the tax shield and leverage such that firms with higher tax shields from depreciation also borrow more. Manos and Ah-Hen (2003) were unable to explain this paradox since the static trade-off theory implies that firms with higher tax shields from other sources have less need for interest tax shields.

In attempting to elucidate the paradox, it may be useful to consider how the tax shield has been specified in the model. Manos and Ah-Hen (2003) used accounting depreciation rather than tax depreciation. The latter may be expected to provide a better proxy for tax shields, although it is conceded that such information may not be available in the public domain.

Rajan and Zingales (1995) excluded tax from their regression model. They emphasised that where tax is included, both personal and corporate taxes should be considered. In addition, it is important to correctly determine the effective tax rate. When there are multiple tax brackets in an economy, results may differ depending on which tax bracket is used to calculate the effective tax rate (Graham 2000). Similarly, Gaud et al. (2005) emphasise the importance of choosing the appropriate marginal tax rate.

### **2.3.5 Growth Prospects**

Firms with greater growth prospects may be expected to require more finance. Ultimately, this must drive them to assume higher levels of debt, once they have exhausted the funds generated internally (Beal et al. 2005). This is consistent with predictions of the pecking order theory.

Empirical evidence has yielded conflicting results. Krishnan and Moyer (1996), Booth et al. (2001), Dessi and Robertson (2003), Manos and Ah-Hen (2003)

and Voulgaris et al. (2004) have reported a positive relationship between growth prospects and leverage . Other studies have found a negative relationship (Al-Sakran 2001; Gaud et al. 2005; Graham 2000; Rajan and Zingales 1995). The results of these studies are summarised in appendix 5 and discussed below.

Krishan and Moyer (1996) measured growth opportunities using the five year rate of growth in sales. Growth was positively and significantly related to leverage, in accordance with the predictions of the pecking order theory. High growth firms borrow more because they have a greater need for external funds.

In the United Kingdom, Dessi and Robertson (2003) also measured growth through average sales, but over a three year period. Growth was positively and significantly related to leverage. Firms with fewer growth opportunities were found to borrow less.

Manos and Ah-Hen (2003) measured growth as the rate of growth in total assets over a three year period. Growth was positively associated with leverage. This was explained by the fact that Mauritian firms generally rely on bank loans and retained earnings for their financing requirements. In line with the pecking order theory, firms with lower levels of retained profits must resort to bank loans.

Voulgaris et al. (2004) reported similar results among Greek manufacturing firms, measuring growth as percentage change in total assets. Companies experiencing high growth rates were unable to meet their financial requirements internally and resorted to debt because of difficulties in accessing capital markets.

In contrast, Graham (2000) found that growth firms in the US tend to use debt sparingly. This was explained by the argument that shareholders prefer not to share profitable investment opportunities with debt-holders. Such reasoning is consistent with the agency theory framework as documented by Booth et al. (2001). Various proxies were used for growth, including: the q-ratio; and the ratio of research and development expense to sales. The former is calculated by adding preferred stock, market value of common equity and net short-term liabilities. The sum is then divided by total assets.

Al-Sakran (2001) also found an inverse relationship between growth and long term book debt among Saudi firms, measuring firm growth as the percentage change in assets. This was explained by the fact that high growth firms have less incentive to invest sub-optimally. As such, they have less need to acquire debt for the purpose of discouraging sub-optimal investment. Such an argument is consistent with the agency theory framework which contends that debt is sought for its control function.

In their Swiss study, Gaud et al. (2005) used the market to book value of assets as a growth proxy. Growth was found to have a negative impact on leverage, when the latter was measured using market values. These results were explained by analyzing and classifying firms into cash-cows and those in financial distress. The former are able to comfortably finance growth requirements internally while the latter are unlikely to receive debt due to their high credit risk. In summary, firms experiencing higher growth borrow less; either because they have less need of debt or because their financial risk is assessed as being too high.

A study of 10 developing countries produced conflicting results. At a country level, firms with higher growth prospects were found to borrow less. This is consistent with the argument that debt is used to minimise sub-optimal investment. Since growth firms have better investment opportunities, their uninvested cash flows are reduced and they have less need to acquire debt for control purposes. However, when country factors were controlled for, the relationship became positive, implying that firms experiencing higher growth cannot fund their investments through retained earnings and must therefore borrow. The conflicting results were considered to indicate the relevance of institutional factors within individual countries (Booth et al. 2001). Further discussion of these factors is beyond the scope of this thesis.

## **2.4 State-Ownership**

The capital structure of state-owned entities may be affected by their social obligations and ability to borrow under government guarantee. In spite of this, previous studies have failed to satisfactorily examine how leverage of state-owned entities differs from that of publicly listed companies. Some deliberately

excluded state-owned entities (Rajan and Zingales 1995) while others eliminated all companies in which government owned a majority of the equity (Krishnan and Moyer 1996).

A study of Chinese firms reported that most listed companies had originally been state-owned enterprises and the state retains a controlling share in many cases. However, state ownership was not included as an explanatory variable in the regression model (Tong and Green 2005). A more recent Chinese study included two explanatory variables relating to state-ownership. Both had a significant negative impact on leverage. In explaining this result, the authors suggest that state ownership is highly entrenched and less willing to accept risks associated with financial leverage (Chen and Strange 2005). It is unclear whether such risk-aversion is peculiar to China.

A study of publicly-traded firms in Saudi Arabia documented that government was a major shareholder in many of the companies (Al-Sakran 2001). Similar to a previous Chinese study (Chen and Strange 2005), the regression model included two independent variables: the percentage of government shareholding; and the value of government subsidies. Government shareholding did not significantly affect leverage for all firms in the sample. A positive relationship was observed between government subsidies and leverage; however this was only significant in the long term. This relationship is somewhat counter-intuitive since subsidies represent a form of finance and might be expected to reduce the need for additional borrowing.

Given the conflicting results from these previous studies, it is important to re-examine the relationship between state-ownership and leverage. Both the Chinese study (Chen and Strange 2005) and the Saudi study (Al-Sakran 2001) were restricted to publicly listed companies and did not include unlisted state-owned entities. The present study will address this gap by examining unlisted state-owned entities.

A Vietnamese study (Nguyen and Ramachandran 2006) examined small and medium-sized enterprises (SMEs) and reported a positive relationship between leverage and state-ownership. State-owned SMEs were able to borrow from state-owned commercial banks under preferential terms and this enabled them

to obtain higher leverage. Although the study compared leverage of state-owned SMEs and privately-owned SMEs, none of the firms in the study were publicly listed. In addition, the reliability of the data is questionable. The study was based on unaudited financial statements which were neither prepared in accordance with Vietnamese nor international accounting standards (Nguyen and Ramachandran 2006). The present study will address this issue by using data extracted from audited financial statements which comply fully with international accounting standards (IAS) and/or international financial reporting standards (IFRS).

## **2.5 Summary**

This chapter has reviewed empirical studies of capital structure from several countries around the world. Most of them have analysed the determinants of capital structure and used research findings to evaluate the theories of capital structure. The results display some divergence, particularly with regard to the sign and significance of relationships. It also appears that any individual study may yield findings that are partly consistent with more than one theory (see for example Manos and Ah-Hen 2003). Nevertheless, the studies reviewed in this chapter enable several useful observations to be made.

First, there is a general consensus that firm size is positively related to leverage as documented in appendix 1. This relationship has been validated across various industries and in countries at various stages of development. The two most common proxies for firm size are total assets and sales. The nature of the relationship is explained by the static trade-off theory in the sense that larger firms generally have more diversified risk so lenders are more inclined to lend to them. The relationship can also be explained within an agency theory framework, using the political cost hypothesis. Larger firms are more visible and subject to greater monitoring. Consequently, they are able to borrow more.

Second, profitability generally displays an inverse relationship with leverage as documented in appendix 2. This is consistent with the pecking order theory. Although Panno (2003) produced a conflicting result using a different model, the same study found that firms with higher past profits borrow less. The most

common proxies for profitability are EBITDA divided by total assets and operating profit divided by sales.

Third, tangibility of assets is consistently and positively correlated with long-term debt as documented in appendix 3. This variable is frequently measured as the ratio of fixed assets to total assets. In terms of the static trade-off theory, fixed assets provide better collateral and reduced risk so firms with higher tangibility ratios can borrow more. The results for total debt are somewhat mixed. Two studies in developing countries produced an inverse relationship between tangibility and leverage (Booth et al. 2001; Manos and Ah-Hen 2003). This could be related to the fact that fixed assets generate fixed costs, which increase firms' operating leverage. Firms may offset this by reducing financial leverage. A second explanation is that fixed assets are easier to monitor so firms with a higher proportion of fixed assets have less propensity to assume debt for monitoring purposes. This latter argument is consistent with the agency theory framework, where debt is used for control purposes.

Fourth, the findings in relation to growth prospects are also mixed and appear to vary depending on the proxy used. Studies that have analysed the growth in assets and sales generally report a positive relationship between growth and leverage. This is consistent with the pecking order theory in the sense that firms will acquire debt once they have exhausted their retained earnings. Other studies have used the market to book value of assets as a proxy for firm growth. These studies report an inverse relationship between growth and leverage, consistent with the static trade-off theory. This is explained by the fact that firms with higher growth prospects have more intangible assets and therefore carry greater risk which constrains them to borrow less.

Fifth, the evidence regarding taxation is inconclusive as documented in appendix 4. Many of the studies reviewed in this chapter have avoided the issue for one reason or another. It has been observed that the more complex the tax rules in a particular country, the more difficult it is to correctly measure this variable. If firms are exempt from tax, the issue becomes irrelevant (Al-Sakran 2001). The more extensive studies report a negative relationship between leverage and tax rates. This appears to contradict the static trade-off theory which implies that firms facing higher tax rates would have a greater incentive to

maximise interest tax shields through borrowing. The positive relationship has been rationalized as suggesting that tax rates may actually perform better as a proxy for profitability than for tax (Booth et al. 2001; Panno 2003).

Sixth, the conflicting results reported by previous studies indicate the need to re-examine the relationship between state-ownership and leverage. The few previous studies have generally been restricted to companies listed on stock exchanges. The present research extends knowledge about capital structure by also considering non-listed companies which are still fully owned by the state.

Finally, it must be noted that most previous studies have been conducted in large, industrialised countries, where large data sets are readily available. However, there is a need to investigate the determinants of capital structure in emerging economies and small island states, such as Fiji. This is particularly relevant given that previous studies in developing countries have yielded some results that are contrary to findings in more developed economies.

## **CHAPTER THREE**

# **FINANCING OPTIONS IN FIJI CAPITAL MARKETS**

### **3.1 Introduction**

The discussion in chapter two focused on determinants of capital structure which have been documented in previous studies. The individual impact of each variable on capital structure was explained using the static trade-off theory, pecking order theory and agency theory framework. Chapter two also identified the need to re-examine state-ownership as a determinant of capital structure.

The first part of this chapter disaggregates capital structure into its various components. In chapter one it was established that an organisation can finance its assets through debt, equity or some combination of the two. Within these broad categories there are numerous financing methods, which represent options from which firms can choose. In chapter four, these components will be used to analyse the composition of capital structure for selected firms in Fiji.

The second part of this chapter outlines the historical development and existing structure of Fiji's capital markets while the third part summarises the issue of securities in Fiji's capital markets between 1997 and 2007. In reviewing the issue of securities, the discussion will identify organisations associated with specific financing options.

The chapter concludes with some important observations regarding the behaviour of publicly listed companies and state-owned entities.

### **3.2 Financing Options**

Table 3.1 lists various financing options that a firm may select. The table classifies each method as debt or equity and also shows its source(s).

In developing their capital structure, firms may obtain finance from financial institutions or directly from the public. State-owned entities may also obtain finance from government, which can be provided in the form of equity investment as well as loans and grants. In some cases, grants are provided by foreign governments or multi-national agencies. This generally represents aid which has been negotiated and provided through government although it may be channeled directly to the firm.

**Table 3.1** Methods of Debt and Equity Financing

Method	Classification	Source		
		General Public	Financial Institutions	Government
Shares	Equity	✓	✓	✓
Retained Earnings	Equity	✓	✓	✓
Bonds	Debt	✓	✓	
Debentures	Debt	✓	✓	
Borrowings	Debt		✓	✓
Finance Leases	Debt		✓	
Grants	Debt			✓
Hybrid Securities	Debt to Equity	✓	✓	✓

In Fiji, an organisation wishing to raise finance from the public must satisfy either of two provisions. The Companies Act enables public companies to issue their shares to the public. However, they must first issue a prospectus which has been approved by the Capital Markets Development Authority (CMDA). As such, all public issues by companies listed on the South Pacific Stock Exchange (SPSE) are regulated by CMDA.

On the other hand, statutory authorities are able to acquire funds from the public through the provisions of the respective acts of parliament under which they were established. This legislation specifically enables them to issue bonds.

The selection of financing options is extremely important to both the firm and the financier, since each method confers different benefits and carries differing levels of risk. The advantages and disadvantages of each method are discussed next.

### **3.2.1 Shares**

One advantage of establishing a public company is the associated ability to raise large amounts of capital from the general public. Individuals and other

organisations are invited to contribute capital in exchange for ownership in the company, with the extent of ownership depending on the number and proportion of shares held. As illustrated in table 3.1, financial institutions and government can also own shares in companies.

When a company is first registered, it is required to indicate the number of shares it intends to issue to the public. The company may decide to issue all shares immediately or to issue them at various intervals as its financial requirements dictate. In either case, the company will invite the public to subscribe for shares by issuing a prospectus. This document contains information that potential investors are likely to require in order to make an informed decision on whether to invest in the firm.

Shareholders expect a return on their investment, although the company cannot guarantee that any such return will eventuate. As discussed in section 1.2.3.2, it is the uncertainty or risk associated with shares that causes shareholders to demand a higher return for their investment. Hence, the cost of equity capital tends to be higher than the cost of debt finance.

Shareholders may receive returns in two forms. When a company makes after-tax profits, the directors may decide to pay a portion of that profit to shareholders in the form of a dividend. Shareholders also benefit when the price of shares appreciates in the market. Increases in share price represent a capital gain, which shareholders can realise if they choose to sell their shares. Should they elect to retain the shares, the capital gain remains unrealised but still benefits shareholders, particularly institutional investors. If they record investments at fair value, capital gains will positively impact their balance sheet through an increase in financial assets. In addition, they may be able to use the investments as collateral for debt financing.

Shares can be issued in various ways including initial public offerings, rights issues, share options and private placements. These will be discussed in section 3.4.

### **3.2.2 Retained Earnings**

Retained earnings represent the portion of after-tax profits that has not been distributed to shareholders in the form of dividends. They are retained within the business to finance future growth and development. In addition, they represent a buffer to cover contingencies, as illustrated in figure 1.1.

The benefits of retained earnings are related to their accessibility and cost effectiveness. As these funds are already held within the entity, the firm is able to avoid delays related to sourcing funds externally. Retained earnings represent a cheaper source of finance, compared to share capital, since they avoid floatation costs associated with issuing a prospectus, underwriting share issues and processing applications. These benefits underpin the pecking order theory.

### **3.2.3 Bonds**

As with shares, a bond issue enables an organisation to raise a large amount of finance from the general public and financial institutions. Unlike loans and mortgages, bonds are issued after prospective lenders respond to an invitation by the borrower. Bonds offer several advantages over other forms of borrowing.

First, the firm is able to tailor the bonds to its own needs, particularly in relation to interest rates, thereby controlling its cost of capital. The term of the bonds can also be set to match the firm's liquidity requirements.

Second, bonds generally entitle the holder to a fixed rate of interest, which is paid periodically. Since bond interest rates do not vary, a firm that has issued bonds may be able to forecast future cash flows more easily than an organisation which uses loan financing, particularly if the latter is obtained under variable interest rates.

Third, re-payment of the principal is deferred until maturity so bonds extend the period during which the borrower has access to the funds. At the same time, lenders have the option of selling their bonds in the secondary market if they wish to recover their funds before maturity.

### **3.2.4 Debentures**

While debentures are issued in a similar manner to shares, they are classified as debt, since they do not convey rights associated with ownership. Debenture holders are not entitled to vote, appoint company directors or share in the firm's profits.

Debentures are generally secured by a floating charge over the assets of the borrower. They are similar to bonds in the sense that they carry a fixed rate of interest. However, unlike bonds, they do not have a fixed term so the principal is not repaid until the debentures are redeemed by the issuer. This conveys flexibility to the firm that issues them, allowing it to hold or redeem the debentures depending on its liquidity position and movements in market interest rates.

### **3.2.5 Borrowings**

An organisation may borrow funds from banks or non-bank financial institutions. Such funds are generally issued in the form of loans, based on an application by the borrowing firm and subsequent approval by the lender. Government may extend loans to particular companies based on state policy objectives and the national interest.

Borrowings require periodic repayments of principal and interest over an agreed term. The interest rate may be fixed, variable or semi-fixed. In the market, this allows the borrower to obtain finance at an affordable cost of capital, based on a suitable repayment schedule. Simultaneously, the lender receives a satisfactory return relative to the level of risk.

Borrowings are generally secured or mortgaged over assets of the borrower, known as collateral. The security may relate to specific assets or a general category of assets. If the borrowing firm defaults on its repayments, the lender can re-possess the collateral and sell it to recover monies owed. This represents a significant risk to the borrower.

### **3.2.6 Financing Leases**

In a lease agreement, the owner of an asset (the lessor) allows another party (the lessee) to use it for a specific period of time, in return for regular rental payments by the lessee. Rental payments include a component of interest, together with principal.

With a financing lease, the risks and rewards are substantially transferred to the lessee. This may happen when the lease period covers the majority of the assets useful life. In such cases, it is common for the lessee to be given an option to purchase the asset at a bargain price upon expiry of the lease (IASB 2007).

One advantage of leasing an asset is that cash flows are spread over the entire lease period, rather than being paid in a lump sum, as in the case of an outright purchase.

A financing lease arrangement is quite different from an operating lease, where the risks and rewards remain with the lessor, who is often responsible for insurance, repairs and maintenance. The lessee does not classify an operating lease as an asset; instead each re-payment is expensed immediately. Operating leases are not reported in the balance sheet and therefore do not affect financial leverage (IASB 2007).

### **3.2.7 Government Grants**

A state-owned entity may receive government grants to subsidise otherwise unprofitable operations. Such grants benefit the firm by off-setting losses and improving overall profitability. They also enable government to meet its policy objectives such as rural development and poverty alleviation.

When it relates to more than one accounting period, a grant may be recorded as deferred income and a portion is transferred to revenue in each period until the grant has been fully utilised (IASB 2007).

There are two further advantages of deferred income. First, it does not require repayment and second, it does not attract interest charges. However, the recipient is generally required to comply with terms and conditions imposed by

the donor. This may include periodic submission of financial reports together with restrictions over the usage of funds.

### **3.2.8 Hybrid Securities**

Apart from the financing methods identified above, firms may also issue hybrid securities, which have characteristics of both debt and equity. One example is a convertible note that is initially classified as debt, but may be converted to shares at the option of the holder. This can be distinguished from a converting note, which will automatically change to equity at a pre-determined future date (IASB 2007).

## **3.3 Capital Markets**

In any capital market, stock exchanges play a fundamental role by enabling the trade of publicly listed securities in both primary and secondary markets. In respect of the former, they provide a facility for companies to issue shares directly to the public. As a secondary market, they offer shareholders a convenient medium for disposing of their shares while potential investors can readily acquire investments in the same manner. This contributes to efficient capital flows in the economy, allowing investors to manage their investment portfolios to achieve desired liquidity, risk and returns (SPSE 2007).

The timely dissemination of reliable information enhances the efficiency of capital flows. Listing requirements ensure that the public is promptly informed of any significant developments concerning the firm, which may affect their investment decisions. The stock exchange further enhances transparency by publishing information on the price and volume of trading.

### **3.3.1 Historical Background**

The South Pacific Stock Exchange is the only licensed securities exchange in Fiji. It was originally established in 1979 as the Suva Stock Exchange (SSE), a wholly owned subsidiary of the Fiji Development Bank (FDB). Initially, trading was limited to a few orders, which were generally received by telephone. FDB handled all transactions and a trade was made upon receipt of a matching opposite order (SPSE 2007).

Active trading on SSE commenced with the introduction of a call market on 1 July 1996. At that point, the exchange featured four listed companies, namely Fiji Sugar Corporation, Flour Mills of Fiji Limited, South Pacific Distilleries Limited (which has since merged with Carlton Brewery Fiji Limited to form the Fosters Group) and BPT (South Sea) Company Limited (which now trades as Toyota Tsusho (South Seas) Limited). Initial market capitalisation was \$114 million. Trading occurred three times each week, through a centralised call system under which a market official verbally asks for orders on each particular security and brokers respond by calling out their orders. These are then matched on the basis of price and time.

SSE officially changed its name to SPSE on 30 November 2000. In 2003, the number of weekly call markets was increased to five, to enable daily trading of securities.

### **3.3.2 Existing Structure**

16 companies are currently listed on SPSE and a detailed listing of these firms is provided in appendix 6. Market capitalisation at the end of 2007 stood at slightly less than \$880 million (CMDA 2008). Yaqara Growth Fund (YGF) has since indicated its intention to delist, subject to approval of all shareholders.

Ownership of SPSE has also broadened to encompass eight financial institutions. They are Fiji Development Bank, Fiji National Provident Fund, Colonial Fiji Life Limited, Credit Corporation Limited, Kontiki Stockbroking Limited, National MBf Finance Company Limited, FHL Securities Limited and Fiji Stock Brokers Limited (SPSE 2007).

## **3.4 Financing through Capital Markets**

Since 1996, companies listed on SPSE have raised slightly less than \$100 million in the primary market. These details are summarised in table 3.2.

Table 3.2 shows that 87.2 percent of the amount raised in the primary market has come from initial public offerings. This includes shares issued to the public as well as private placements with institutional investors. Smaller portions were collected through rights issues and the exercise of options, by directors and

employees. Of the total amount raised, only \$5 million was generated through the issue of corporate bonds. Stock market compliance listings include estate cases, restructures and transfers under exceptional circumstances.

**Table 3.2** Issues in the Primary Market

<b>Method</b>	<b>Amount Raised (\$)</b>	<b>%</b>
Initial Public Offering	84,904,644	87.2
Stock Market Compliance Listing	3,966,060	4.1
Rights Issue	2,026,374	2.1
Exercise of Options	1,514,600	1.5
<b>Total Equity Issues</b>		<b>94.9</b>
Bond Issue	5,000,000	5.1
<b>Total</b>	<b>97,411,678</b>	<b>100.0</b>

**Source** Adapted from The Fiji Accountant, April 2005

### **3.4.1 Initial Public Offerings**

An initial public offering represents the first sale of shares by a company and details of the offering are contained in the prospectus. The company may specify a minimum amount of capital, which must be received before any shares are issued. This is known as the minimum subscription level. To ensure that the minimum level is obtained, firms commonly engage the services of an underwriter, who is generally a broker or an investment banker. In return for a commission, the underwriter guarantees to buy any shares not purchased by prospective applicants (Leo et al. 2005).

Table 3.3 shows that seven companies have made their initial public offering on SPSE. Three offerings were made in 1997, one year after the exchange was established. Atlantic and Pacific Packaging Company Limited (APP) followed in 1998, while Communications Fiji Limited (CFM) made its initial public offering in 2001.

The largest initial public offering was made by Amalgamated Telecom Holdings Limited (ATH), which raised \$64 million through its share issue in 2002. This represented a partial divestment of government shares in the company. 15 million shares were offered to the public, at an application price of \$1.06. Government also reserved the right to sell close to 20 million additional shares in the event of oversubscription (ATH 2002). Appendix 7 shows that ATH is the largest company listed on SPSE, with a market capitalisation of \$333.5 million at the end of 2007 (CMDA 2008).

**Table 3.3** Initial Public Offerings on the South Pacific Stock Exchange

<b>Company</b>	<b>Date Listed</b>	<b>Amount Raised (\$)</b>
Rice Company of Fiji Limited	20 January 1997	1,500,000
Fijian Holdings Limited	20 January 1997	10,464,650
Fiji Television Limited	24 April 1997	3,089,994
Atlantic and Pacific Packaging Limited	17 August 1998	1,600,000
Communications Fiji Limited	20 December 2001	750,000
Amalgamated Telecom Holdings Limited	18 April 2002	64,000,000
Kontiki Growth Fund Limited	16 December 2004	3,500,000
<b>Total</b>		<b>84,904,644</b>

**Source** The Fiji Accountant, April 2005

Since the ATH issue, the only other initial public offering was made by Kontiki Growth Fund (KGF), in December 2004. Managed by Kontiki Stockbroking, the offer aimed to raise \$3 million, based on an issue price of \$1.00. However, the offer actually raised a total of \$3.5 million and the directors then exercised the provision to accept over-subscriptions for the extra \$0.5 million. Appendix 7 shows that KGF is the smallest company listed on SPSE with a market capitalisation of \$3.2 million at the end of 2007 (CMDA 2008).

### 3.4.2 Rights Issues

In a rights issue, existing shareholders are offered shares in proportion to the number of shares they already hold (CMDA 2008). If all the existing shareholders exercise their rights and take up the new shares, there is no change to the percentage of shares they own in the company. This is beneficial to the shareholders, since they effectively maintain their control and influence in the firm.

It is common for the company to offer shares to existing shareholders at a price somewhat lower than the prevailing market price. This discount is an incentive for shareholders to exercise their rights since it enables them to buy shares more cheaply than other investors. After the rights issue, shareholders who do not wish to hold the shares may divest them through the stock exchange, realising a capital gain in the process. Any rights not exercised by shareholders can subsequently be sold on the open market (CMDA 2008).

As illustrated in table 3.4, two listed companies conducted rights issues during the review period. They are Fiji Care Insurance Limited (FIL) and VB Holdings Limited (VBL). In terms of market capitalisation at the end of 2007, they were the second and third smallest firms listed on SPSE (see appendix 7 for ranking).

**Table 3.4** Rights Issues on South Pacific Stock Exchange

Company	Year	Terms	Offered (\$)	Exercised (\$)
VB Holdings (VBL)	2003	2 for 3	500,000	500,000
	2005	1 for 2	994,500	994,500
Total VBL			1,494,500	1,494,500
Fiji Care Insurance (FIL)	2003	1 for 5	531,874	43,000
<b>Total</b>			<b>2,026,374</b>	<b>1,537,500</b>

**Source** Annual Reports of FIL, SPSE and VBL

#### 3.4.2.1 VB Holdings Limited

VBL is a family-owned company. Three of the five directors, including the chairman and the chief executive, belong to the Niranjan family. Collectively, these three directors owned 65 percent of the issued capital at the end of 2007 (VBL 2008).

VBL has used equity capital generated from rights issues for two specific purposes. First, the funds have enabled the company to finance investment in non-current assets. Second, the funds have been used to reduce leverage by repaying debt.

In February 2003, VBL announced the listing of 400,000 additional shares, issued at \$1.25 each. Existing shareholders were offered and subsequently allotted two new shares for every three shares held. The amount raised was used to construct a new office showroom complex (VBL 2003).

In December 2005, the company announced another rights issue of one new share for every two shares held. The offer was fully subscribed and led to the issue of 510,000 shares, at a discount of \$0.16. The issue price was \$1.95 compared to the last traded price of \$2.11. The rights issue was underwritten by the chief executive officer and enabled the company to raise \$994,500.

In announcing the success of the rights issue, the company stated that:

“The monies raised will be used by the Company to reduce its debt and strengthen its Balance Sheet. This will help the company to reduce its financial risk and place it in a stronger position to pursue future expansion opportunities.” (VBL 2005: 1)

#### 3.4.2.2 Fiji Care Insurance Limited

FCI has four directors, of whom two are non-executives. At the end of 2007 three of the directors, including the managing director, collectively owned close to 64 percent of the issued capital, either directly or indirectly (FIL 2008).

FCI made a rights issue during 2003, whereby existing shareholders were offered one share for every five held in the company. The offer was made at a

reduced rate of \$0.60 per share. However only eight percent of the rights were exercised and the company then sold the remaining shares in the open market through private investors, both locally and abroad (FIL 2004).

No specific disclosure was made concerning the application of these funds, but a review of the company's financial statements suggests that they were placed on short term deposit with commercial banks.

### 3.4.3 Share Options

A share option is an instrument that gives the holder the right to buy or sell a certain number of shares in the company at a stipulated price by a specified date (Beal et al. 2005).

Options can be used to reward employees for good performance and/or encourage them to become shareholders, thereby aligning employees' interests with those of the company. In this regard, a firm can issue options to its employees as part of an employee bonus scheme or ownership-based remuneration scheme (Leo et al. 2005). Funds generated from share options may be of secondary importance to the non-financial benefits which they deliver. For example, share ownership may reduce managers' incentives for opportunistic wealth expropriation.

Share options can be issued for valuable consideration or at no cost to the recipient. In the former case, they are likely to be offered at a preferential price, for otherwise the recipients would be better off acquiring the shares directly through the stock market.

**Table 3.5** Share Options issued on the South Pacific Stock Exchange

Company	Year	Shares	Amount (\$)
Pacific Green Industries Limited (PGI)	2002	642,857	900,000
Fiji Care Insurance Limited (FIL)	2003	400,000	220,000
VB Holdings Limited (VBL)	2004	20,000	25,600
Communications Fiji Limited (CFM)	2005	307,500	369,000
<b>Total</b>		<b>1,370,357</b>	<b>1,514,600</b>

Source Annual Reports of SPSE

Four publicly listed companies issued share options during the review period, as summarised in table 3.5. They include FIL and VBL, which also conducted rights issues. As documented in appendix 7, Communications Fiji Limited is the fourth smallest firm on SPSE in terms of market capitalisation. Options granted by Pacific Green Industries Limited will be discussed in chapter four.

#### 3.4.3.1 Fiji Care Insurance Limited

In 2003, a total of 400,000 share options in Fiji Care were exercised by the Kontiki Growth Fund and Stronghold Investments. The latter is a company owned by the managing director of Fiji Care, Mr. Peter McPherson (FIL 2004).

The options had been issued in December 2000, at a price of \$0.55. They were exercisable on or before June 1, 2003 by written notice to the directors of the company, together with payment of the exercise price. However the options could not be exercised before September 1, 2001.

The proceeds appear to have been placed on short-term deposit. This suggests that the non-financial benefit of the share options was an important reason behind their issue, particularly for those issued to the managing director. The share options increased his stake in the company and further consolidated shareholding among him and the two non-executive directors.

#### 3.4.3.2 VB Holdings Limited

In 2004, VBL issued two parcels of 10,000 shares; one to Kontiki Capital Limited and the other to the chief executive, Mr. Nitish Niranjana, who is also a director. These represented the exercise of share options, which had originally been issued in 2001 on the condition that they should be exercised within a period of three years.

The options were exercised on 15 November 2004, at the strike price of \$1.28 per share (VBL 2005). As the company's shares were trading in excess of \$2.00 at the time, it is clear that the holders realised a significant capital gain when exercising their options.

The share options issued to the chief executive would appear to constitute performance-based remuneration.

### 3.4.3.3 Communications Fiji Limited

In 2005, the company issued 307,500 shares for \$1.20. Of this amount, 75,000 shares were issued to the chairman, Mr. Hari Punja. Another 75,000 were issued to the managing director, Mr. William Parkinson (CFM 2006). The other recipients were not disclosed. Indirectly, Messrs Punja and Parkinson had a 53 percent interest in the issued capital of the company at the end of 2007 (CFM 2008).

### 3.4.4 Private Placements

In a private placement, securities are issued on the basis of direct negotiations with the purchaser (Beal et al. 2005). This normally involves the issue of shares to institutional investors such as life insurance companies and superannuation funds, which have large amounts of cash to invest.

One of the main advantages of a private placement is speed, since a placement can be effected within a few days. Private placements are likely to be pegged closer to the market price because the offer is not being made to existing shareholders. Another advantage is that shares can be placed with friendly institutions, or those that the company has already established strategic business relationships with (Leo et al. 2005).

On the other hand, private placements may adversely affect existing shareholders by diluting their ownership interests.

#### 3.4.4.1 Amalgamated Telecom Holdings Limited

In 2002, ATH issued shares through private placements with six local institutions. This was part of the initial public offering shown in table 3.3. Government had earlier invited tenders from several eligible institutional investors, with a view to privately placing some of its shares in the company. Following a formal tender process, close to 41 million shares were issued to the institutional investors listed in table 3.6, at a price of \$1.06 (ATH 2002).

As a result of the private placement, FNPF's shareholding in ATH increased from 51.0 percent to 58.2 percent. FNPF is the largest financial institution in Fiji, owning 36.9 percent of the assets in the national financial system (RBF 2008).

Hence it is one of the few institutions with sufficient financial resources to purchase such a large volume of shares. Among the other organisations listed in table 3.6, Fijian Holdings Limited (FHL) is a listed company while Yasana Holdings Limited is the parent of another listed company, Fiji Television Limited (FTV). As shown in appendix 7, FTV and FHL are the fifth and sixth largest companies on SPSE in terms of market capitalisation.

**Table 3.6** Private Placements by Amalgamated Telecom Holdings Limited

<b>Entity</b>	<b>Shares Allocated</b>
Fiji National Provident Fund (FNPF)	30,391,550
Unit Trust of Fiji (Trustee Company) Limited	7,516,982
Yasana Holdings Limited	1,886,793
Fijian Holdings Limited	1,000,000
Yatulau Company Limited	100,000
Lomaiviti Provincial Council	94,340
<b>Total</b>	<b>40,989,665</b>

Source ATH Prospectus

### 3.4.5 Corporate Bond Issues

The first and only issue of corporate bonds in Fiji occurred in 2002, when Fijian Holdings Limited (FHL) raised \$5 million. The float was so well received that it was over-subscribed by 174 percent. Funds raised were subsequently lent to a subsidiary of FHL, Hinterland Fiji Limited (HFL), which used them to finance the construction of an 8-storey office complex.

FHL documented various benefits of the bond issue in its annual report.

“Through the ... issue, FHL was able to enhance shareholder value by creating a more flexible finance instrument that is suitable to the financing requirements for the new building. In particular, FHL was able to fix the interest costs over the term of the bond and defer the principal repayments of the loan until maturity. These advantages were passed onto Hinterland without any additional premium.

FHL has also established the benchmark for Fiji's capital markets both in terms of new financing options and pricing, and has created an opportunity where companies can access funds directly from investors without relying entirely on bank borrowings." (FHL 2002: 13)

The term of the bonds ranged from five to seven years. They were redeemable on maturity, with half-yearly interest payments in April and November. The bonds were purchased by five institutional investors, which negotiated varying interest rates. Security for the bonds consisted of a first registered mortgage over the same property that they financed.

The FHL bonds were subsequently redeemed in February 2006, in order to discharge the mortgage and allow the property to be transferred to a newly created investment vehicle (FHL Property Trust), which would later be offered to the public for investment.

#### **3.4.6 Bonds Guaranteed by Government**

The Reserve Bank of Fiji acts as a registry for most transactions involving bonds and promissory notes. A bond is normally issued for a period greater than one year, while a promissory note has a duration of less than twelve months. Bonds are popular among institutional investors, such as the FNPF, commercial banks, insurance companies and unit trusts, which jointly constitute the main bond investors (RBF 2008).

All bonds issued by statutory bodies are guaranteed by government and consequently carry negligible default risk. This is likely to explain their appeal to financial institutions. The value of bonds issued and redeemed by statutory bodies during 2007 is documented in table 3.7.

The largest issuer of bonds is the Fiji Development Bank (FDB). It issued bonds in every year from 1980 to 2007 except for 1987, due to the political events of that year. During the same period, FEA issued bonds in 15 of the 28 years, most recently in 2005 and 2007.

The Housing Authority (HA) first issued bonds in 1992. It has issued bonds in every subsequent year, with the exception of 1996, 1997 and 2007.

Fiji Pine Limited (FPL) first entered the bonds market in 1996, with an issue of \$1.6 million. This was followed by further issues in every year from 1997 to 2001.

**Table 3.7** Bond issues by Statutory Bodies (Guaranteed by Government)

<b>Organisation</b>	<b>Opening Balance</b>	<b>Issued</b>	<b>Redeemed</b>	<b>Closing Balance</b>
	<b>\$M</b>	<b>\$M</b>	<b>\$M</b>	<b>\$M</b>
Fiji Development Bank (FDB)	253.4	110.0	24.5	338.9
Fiji Electricity Authority (FEA)	64.4	58.8	10.0	113.2
Housing Authority	108.6	-----	9.7	98.9
Fiji Pine Limited (FPL)	5.6	-----	3.0	2.6
<b>Total</b>	<b>432.0</b>	<b>168.8</b>	<b>47.2</b>	<b>553.6</b>

Source Reserve Bank of Fiji Annual Report 2007

Other statutory bodies that have issued bonds include the Fiji Broadcasting Corporation Limited (FBCL), Ports Authority of Fiji (PAF), Rewa Rice Limited (RRL) and the Civil Aviation Authority of the Fiji Islands (CAAFI).

### **3.4.7 Debentures and Hybrid Securities**

To date, debentures have not been issued by any publicly listed or state-owned organisation in Fiji.

The only documented case of hybrid securities relates to the Yaqara Group Limited (YGL), which issued a convertible note in February 2005. The note was denominated in Australian currency, valued at \$500,000. It was subsequently increased in February 2006 by an issue denominated in Fiji dollars, valued at \$61,561. The note had a term of twelve months, with a base interest rate of 8.5 percent and a default interest rate of 10.5 percent. The note holder also holds a mortgage over a property leased by YGL. This mortgage will be discharged when the note is converted to equity (YGL 2008).

The 2007 annual report provided the following disclosure:

“On 30<sup>th</sup> March 2006, the company entered formal negotiations with Pooled Investments Pty Limited, for an extension to the term of the convertible note ... Such negotiations are in continuous progress.” (YGL 2007: 35)

Although no further details were provided, YGL reported huge losses from 2005 to 2007. As such, the holder would reasonably prefer not to convert the note to equity, since debt guarantees a fixed return with recourse to tangible assets. On the other hand, equity promises neither dividends nor capital gains in light of the huge losses.

### **3.5 Summary**

Several conclusions can be drawn from the discussion in this chapter.

First, the review of Fiji’s capital markets indicates the existence of provisions for firms to raise capital in various ways, including initial public offerings, rights issues, share options, private placements and the issue of bonds and convertible notes. Capital markets are supported by a regulatory framework which is controlled by CMDA. At an operational level, SPSE provides a platform for trading in both primary and secondary markets while RBF performs a similar role in relation to bonds.

Second, the frequency and volume of trading in primary markets over the past ten years has been low. This is despite the establishment of regulatory frameworks and supporting structures. Appendix 7 shows that only four of the 16 listed companies raised additional equity during the review period. It may be inferred that the other 12 listed firms employed retained earnings and/or debt for their financing needs. This conclusion is consistent with the pecking order theory, which states that firms prefer to use retained earnings in the first instance, debt in the second instance and additional equity only as a final resort.

Third, publicly listed companies have displayed a tendency to employ only the most basic methods of equity financing, principally the initial public offering. This has contributed to the limited level of trading. In addition, only one hybrid security was issued during the review period, namely a convertible note issued

by Yaqara Group Limited in 2005. This re-enforces the popularity of traditional financing methods in Fiji's capital markets.

Fourth, there is a difference in the behaviour of small and large publicly listed companies. During the review period, four of the smaller ones (FIL, VBL, CFM and PGI) obtained additional equity capital from existing shareholders. This maintained relative stability in shareholding. On the other hand, the largest company (ATH) employed private placements with six institutional investors. Similarly, the issue of corporate bonds by FHL was restricted to five institutions. In summary, small firms appear to seek additional equity from existing shareholders whereas larger firms seem to target institutional investors. This tendency can be explained in terms of critical mass and the amount of capital required. Relative to private investors, institutional investors are more likely to be able to contribute large amounts of finance, simply because they control larger investment portfolios. Fiji National Provident Fund (FNPF) is a classic example.

Fifth, the smaller companies appear to have utilised rights issues and share options to reward executive directors. This suggests that shares are issued to motivate executive management whilst simultaneously aligning their interests with those of other shareholders. As such it may be concluded that smaller firms listed on SPSE issue equity for both financing and non-financing reasons.

Finally, the issue of bonds has largely been limited to state-owned entities, with the exception of corporate bonds issued by Fijian Holdings Limited in 2002. This suggests that bonds are relatively unpopular among publicly listed companies and may imply that listed companies can obtain debt finance more cheaply from financial institutions. On the other hand, state-owned entities issue bonds which carry government guarantees and attract very low interest rates given their zero default risk. Consequently bond financing is an optimal choice for state-owned entities because the interest rate on bonds is less than that charged by commercial banks. As such it is unsurprising that several state-owned entities issue bonds frequently.

In summary, these observations reflect the smallness of capital markets in Fiji as well as their relative immaturity. They also indicate that the size and type

(publicly listed or state-owned) of an enterprise may impact decisions about capital structure. Interactions among firm size, firm type and capital structure will be analysed further in chapter four.

## **CHAPTER FOUR**

# **CAPITAL STRUCTURE OF SELECTED FIRMS IN FIJI**

## **4.1 Introduction**

Chapter three described the financing options currently available in Fiji's capital markets and discussed examples of firms which had employed each of the various options. In this chapter, selected organisations will be examined in detail, in order to identify the financing options which they have employed and establish the contribution of each option to their overall capital structure. The review covers the decade from 1997 to 2007, which is consistent with the period studied in chapter three.

The analysis in chapter three identified that firm size and type impact decisions about capital structure. In this chapter, two publicly listed companies and three state-owned entities have been selected for detailed analysis. This will provide further insight into the capital structure of different types of organisations. To reflect the impact of firm size, one large and one small enterprise have been chosen from each type of firm.

### **4.1.1 Definitions**

In this chapter, equity includes share capital, retained earnings and most reserves. Share capital and retained earnings reflect conscious choices by shareholders to invest or re-invest in the company. The same is true of reserves established from retained profits. On the contrary, asset revaluation reserves have been excluded because they do not represent a financing decision. However, the appendices provide comparative figures to show the effect of including or excluding asset revaluation reserves.

Debt consists of all liabilities on the balance sheet. Long-term debt includes bonds, loans, financing leases and government grants. Bank overdrafts are excluded since they generally represent short-term financing arrangements. The percentage of long-term debt is calculated from long-term debt divided by total liabilities.

Leverage is measured using the gearing ratio. This is calculated from long-term debt divided by the sum of long-term debt and equity (Booth et al. 2001; Rajan and Zingales 1995). Equity is measured using book value. Market values have

not been used since they are only available for publicly listed companies but not for state-owned entities.

#### **4.1.2 Selected Firms**

The two publicly listed companies selected for analysis are Pacific Green Industries (Fiji) Limited and the Fiji Sugar Corporation Limited (FSC). FSC was chosen because, in terms of total assets, it is the largest of the original four firms listed on SPSE. Of the original four firms, two others remain in operation. They are Flour Mills of Fiji Limited and Toyota Tsusho Limited. South Pacific Distilleries Limited was the fourth company listed in 1979 but it subsequently merged with Carlton Brewery Fiji Limited to form the Fosters Group. Pacific Green is one of the four companies identified in chapter three as having issued additional equity since listing. Of those four companies it is the only manufacturing firm, thereby providing a useful comparison with FSC.

Among state-owned entities, FEA is the largest in terms of total assets. It is one of the four entities classified as commercial statutory authorities. By comparison, all government commercial companies are much smaller. Post Fiji Limited was selected because it was one of the first government commercial companies to be established and like FEA operates as a monopoly, in regard to its core business. In addition, Post Fiji had produced comprehensive annual reports since it was established in 1996, thus facilitating a detailed analysis of the factors and events affecting its capital structure.

The other company selected for detailed analysis is Air Pacific Limited, which is majority owned by the Fiji government. Unlike Post Fiji, government has divested a large portion of its shares in Air Pacific, although it retains a controlling interest. Unlike FEA, Air Pacific is registered as a company and faces competition from several other airlines. Unlike FSC, Air Pacific is an unlisted company. As such, Air Pacific provides a useful comparison to the other entities selected for analysis in this chapter.

## **4.2 Capital Structure of Publicly Listed Companies**

This section analyses the capital structure of two companies listed on SPSE; one is small while the other is large. The former is Pacific Green, which in 2007

reported: total assets of \$7.6 million and total revenue of \$7.4 million. For the same period, FSC recorded total assets of \$250.2 million and revenue of \$274.3 million.

#### **4.2.1 Pacific Green Industries (Fiji) Limited**

Pacific Green Industries (Fiji) Limited was incorporated in 1996. One year later, it acquired the property of Pacific Green Furniture Limited, which had been in operation since 1991 (PGI 2001).

The main activity of the company is the manufacture and sale of furniture and architectural products made from coconut palmwood. It operates a factory located at Sigatoka, and exports furniture to Australia and the United States as well as countries in Asia and the Pacific (PGI 2008). During 2004, the company established a subsidiary under the name of Dongguan Golden Palmwood Furniture Proprietary Limited. Pacific Green owns a 70 percent interest in the subsidiary which is incorporated and domiciled in the Republic of China (PGI 2005).

Profits of the holding company are exempt from income tax until December 2009, on the condition that 70 percent of total production is exported. The subsidiary is exempt from income tax until December 2007. After that date, its profits will be subject to tax of 25 percent in China (PGI 2008).

On 5<sup>th</sup> June 2001, Pacific Green listed its entire share capital of 6,976,377 ordinary shares on the South Pacific Stock Exchange. The listing was managed by Kontiki Capital Limited and facilitated through an information memorandum dated 21 May 2001 (PGI 2001).

##### **4.2.1.1 Pacific Green Capital Structure**

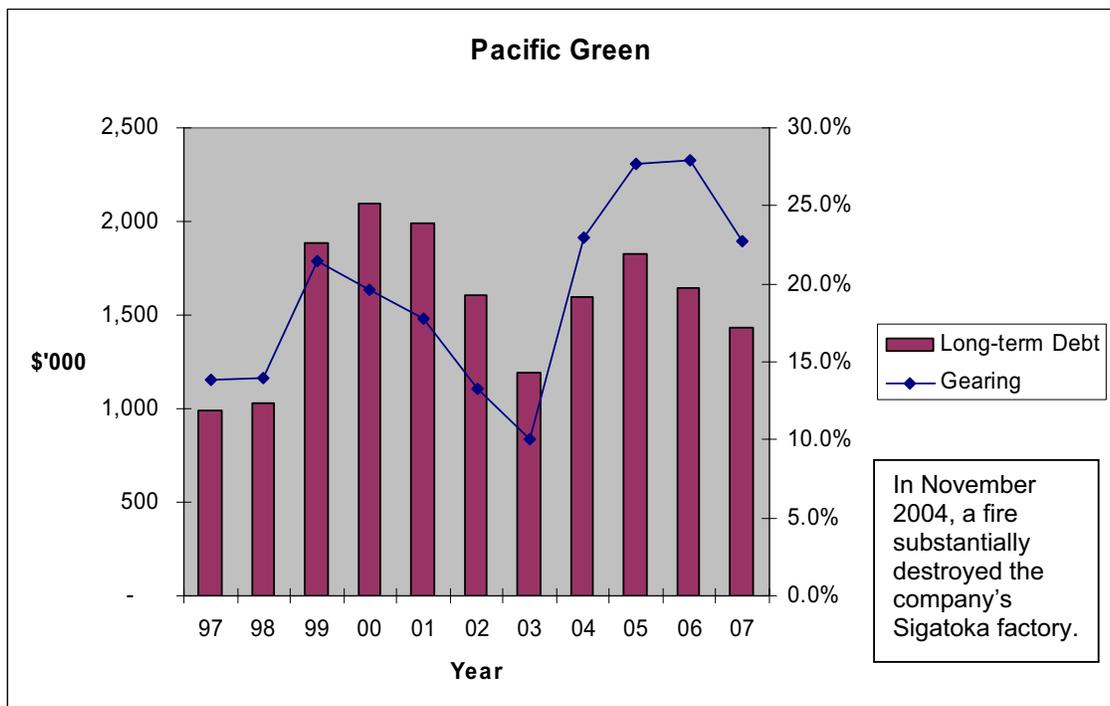
Graph 4.1 shows long-term debt and gearing for the company between 1997 and 2007. Gearing remained below 30 percent throughout the period, which indicates that Pacific Green has utilised a greater proportion of equity in its capital structure. After increasing substantially in 1999, gearing declined consistently, reaching a minimum of 10.0 percent in 2003. This was followed by

another series of increases until 2006, when it peaked at 27.9 percent. The upward trend was finally reversed in 2007.

Graph 4.1 indicates a substantial change in leverage during 2004. This is related to a fire in November of that year, which is discussed in section 4.2.1.2 below. Although gearing averaged 17.3 percent during the review period, it exceeded 20 percent from 2004 onwards, as documented in appendix 8.

Long-term financing accounted for 40 to 70 percent of the company's debt during the review period, with an average of 52.6 percent and a maximum of 70 percent in 2002 (see appendix 8 for details). The unusually low proportion of long-term debt in 2006 can be explained by the bank overdraft, which reached an all-time high of \$930,385 (equal to 23.5 percent of total liabilities) at the end of that year.

**Graph 4.1** PGI Long-term Debt and Gearing



Source Appendix 8

#### 4.2.1.2 Pacific Green Components of Debt and Equity

In table 4.1, equity and long-term debt are disaggregated into their various components. Equity is separated into capital, reserves and retained profits, with

reserves relating principally to share premiums. Long-term debt is broken-down into loans and financing leases, which were the two forms of long-term debt used by the company. The leases were used to finance motor vehicles.

**Table 4.1** Pacific Green Components of Equity and Long-term Debt

Year	Capital	Reserves	Ret. Profits	Loans	Leases
	\$	\$	\$	\$	\$
1997	6,033,520	-----	136,704	-----	-----
1998	6,033,520	-----	317,164	916,399	108,906
1999	6,033,520	-----	879,132	1,793,444	92,788
2000	6,676,377	257,143	1,658,489	2,024,223	74,897
2001	6,976,377	254,721	1,975,838	1,919,794	69,791
2002	7,619,234	504,210	2,379,713	1,494,044	115,517
2003	7,619,234	504,210	2,559,822	1,091,859	95,948
2004	7,619,234	504,210	(2,783,384)	1,518,917	74,452
2005	7,619,234	504,210	(3,364,812)	1,772,421	51,975
2006	7,619,234	433,364	(4,258,097)	1,606,088	33,733
2007	7,619,234	371,951	(3,844,697)	1,430,825	4,881

**Source** Annual Reports of Pacific Green Industries (Fiji) Limited

Several significant observations can be made from table 4.1. First, share capital was issued in three consecutive years, from 2000 to 2002. This contributed to an eight percent reduction in gearing over the three years.

Second, the company has been selective in issuing shares, clearly refraining from public share offerings. Consistent with the behaviour of the small firms analysed in chapter three, Pacific Green has issued shares to its directors, employees and existing shareholders.

In 2000, 642,857 shares were issued to the Kula Fund, an institutional investor. This provided the company with further expansion capital. The issue price of \$1.40 included a share premium of \$0.40, which is reflected in the creation of reserves during 2000. The Kula Fund already owned shares valued at \$2.16

million prior to this private placement. Through this transaction, its shareholding increased from 35.8 percent to 42 percent (PGI 2001).

Additional shares were issued in 2001:

“During the year 180,000 Ordinary Shares of \$1.00 each were issued to employees at par value and 120,000 Ordinary shares of \$1.00 each were issued to investors pursuant to a private placement at \$1.50 per share.” (PGI 2002: 19)

The private investors included Colonial First State Income and Growth Fund, Dominion Insurance Limited, Hari Punja and Sons Limited, Kontiki Growth Fund, Unit Trust of Fiji Limited and Yasana Holdings Limited. Each of these entities acquired 20,000 shares in Pacific Green (PGI 2001). A brief review of the participants in this private placement identifies that the Unit Trust of Fiji and Yasana Holdings Limited both participated in the private placement of government shares in ATH during 2002. Hari Punja and Sons Limited and Dominion Insurance Limited are both related parties of Flour Mills of Fiji Limited while the Kontiki Growth Fund had also invested in Fiji Care Insurance Limited, through a rights issue. This suggests that transactions in Fiji capital markets are dominated by a relatively small number of players.

Share capital increased by \$300,000 as a result of these transactions. While \$60,000 was collected in share premiums, \$62,422 was used to cover expenses relating to the share issue. Consequently, there was a slight decrease in the share premium reserve.

In 2002, Pacific Green raised a further \$900,000 following the exercise of share options by its joint managing directors.

“In September 2000, the company granted options to Mr. Peter Ryan and Mr. Bruce Dowse to purchase 642,857 ordinary shares in the company at \$1.40 per share. The above options were exercised in May 2002.” (PGI 2003: 21)

\$257,143 was collected in share premiums while \$7,654 was used to meet share expenses, resulting in a net increase of \$249,489 in reserves during 2002.

The third significant observation is that retained profits were wiped out in 2004, following a fire in November of that year, which destroyed most of the company's plant, equipment and inventory (PGI 2005). Following the fire, gearing increased by 13.0 percent, more than off-setting the reductions in leverage achieved through issue of share capital between 2000 and 2002. While the increase in share capital was planned, the effects of the fire on the firm's capital structure were not.

Additional losses were incurred in 2005 through production down-time as well as writing off further inventory. Another loss was recorded in 2006; this was largely the result of restructuring, including the closure of an Australian warehouse and writing off production development costs in the United States.

In 2007, the company recorded its first after-tax profit in four years and this was attributed to its Chinese subsidiary. The Fiji operations recorded another loss, although it was less than the successive losses recorded since 2004 (PGI 2008).

The fourth observation is that bank loans constituted the principal form of debt financing during the review period. Third-party debt was first introduced into the capital structure in 1998, when the company obtained a loan from the Australia and New Zealand Banking Group (ANZ). The loan carried an annual interest rate of 7.5 percent and a repayment period of seven years. It was used to repay a loan from a related party. Additional draw-downs in 1999 and 2000 saw the loan balance increase to slightly over \$2 million. These funds were used to finance capital investment in plant, property and equipment.

Historically Pacific Green generated positive cash flows from operations, which enabled a consistent reduction in its loan balance from 2000 to 2003. The downward trend ended in 2004, when the firm acquired additional loan funding to finance expenditure necessitated by relocation and reconstruction following the fire.

The term loan is repayable over ten years at an annual interest rate of 5.25 percent. These represent more favourable terms than those of the previous loan, where the company was subject to a higher interest rate and a shorter

repayment period. The reduction in interest rate reflects the lower lending rates offered by commercial banks at the time of issue (RBF 2008).

Pacific Green also has an overdraft facility with ANZ. The loan and overdraft are secured by a mortgage debenture over all the assets and undertakings of the company, as well as additional mortgages over three parcels of land and a cross-guarantee between Pacific Green and Waroona Limited (PGI 2008).

#### 4.2.1.3 Pacific Green Summary

With reference to graph 4.1, the capital structure of Pacific Green can be divided into three separate periods; 1997 to 1999; 2000 to 2003; and 2004 to 2007.

Between 1997 and 1999, the company increased leverage through loan financing. When Pacific Green was formed in 1997, it had taken an interest-free loan from an undisclosed related party. In 1998, it repaid the related party loan by acquiring a loan from ANZ. Further draw-downs occurred in 1999 and 2000.

From 2000, Pacific Green began to reduce leverage by issuing shares to directors, employees and institutional investors. By the end of 2003, leverage had reached a minimum of 10 percent.

The 2004 fire eliminated retained earnings which had been re-invested in the company, while simultaneously forcing the firm to assume higher leverage by increasing its existing bank loan. By December 2007, almost four years later, Pacific Green was still unable to reduce debt and leverage to their levels before the fire.

#### 4.2.2 Fiji Sugar Corporation Limited

The Fiji Sugar Corporation Limited (FSC) was incorporated by an act of parliament in 1972. One year later, it took over the operations of South Pacific Sugar Mills Limited (SPSM), a subsidiary of the Australian Colonial Sugar Refining Company Limited (CSR). Following the repeal of the FSC Act in 2006, the company is governed solely under the Companies Act (FSC 2007).

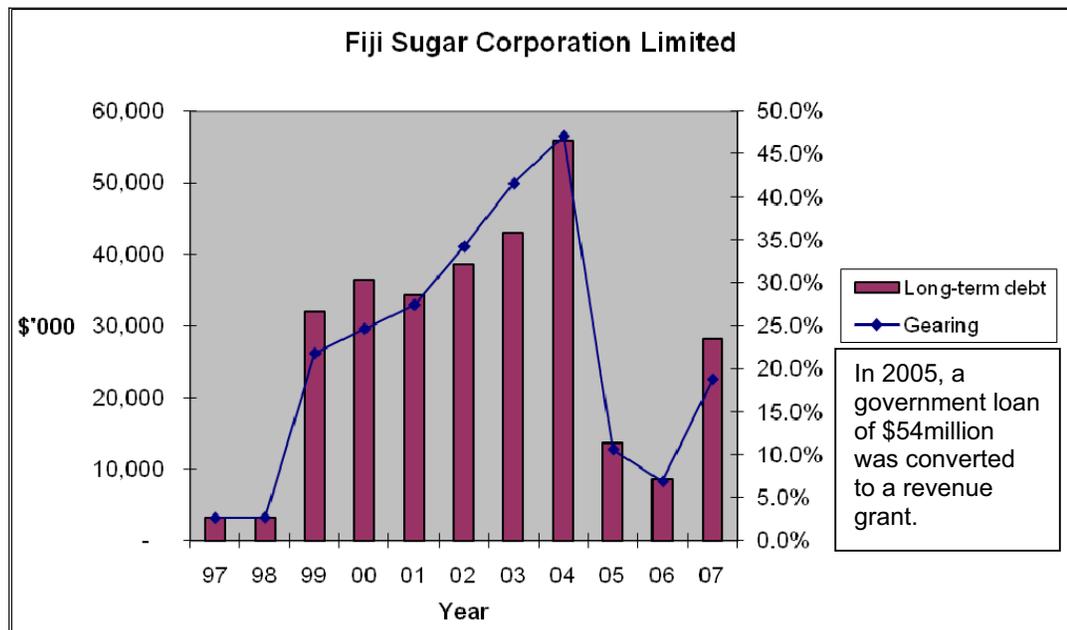
FSC manufactures, stores, markets and delivers raw sugar to customers in Fiji, as well as global markets. The company owns and manages four sugar mills around the country, which manufacture sugar from cane grown on privately owned farms. It also owns and manages the railway network that is used to transport cane from farms to the mills.

FSC has been listed on the South Pacific Stock Exchange since 1979. However, the Fiji government remains the main shareholder and owned 68 percent of the shares in the company at the end of the 2007 financial year (FSC 2007).

#### 4.2.2.1 FSC Capital Structure

FSC exhibits a preference for equity financing. During the review period, gearing averaged 21.2 percent and exceeded 20 percent in six years. Gearing has been calculated using adjusted equity, as shown in appendix 9. Adjusted equity excludes the asset revaluation reserve of \$63.6 million established in 2000, following an independent valuation of freehold land and buildings (FSC 2000). The revaluation reduced gearing by 7.4 percent and occurred against a backdrop of declining profitability and increasing leverage. As such, this may suggest earnings management on the part of FSC.

**Graph 4.2** FSC Long-term Debt and Gearing



Source Appendix 9

Graph 4.2 illustrates that FSC employed extremely low levels of gearing prior to 1999, when debt levels increased significantly. Debt increased further until 2004, when gearing reached a peak of 47.1 percent, before declining significantly in 2005, for reasons that will be discussed in section 4.2.2.3 below. After the very low levels achieved in 2006, gearing rose again in 2007.

Long-term debt has represented between 20 and 40 percent of total liabilities since 1999, except in 2004 when it peaked at 52.9 percent. While long-term debt has generally increased during the period, adjusted equity displays an opposite trend, up to 2005 (see appendix 9 for details). A massive reduction in long-term debt during 2005 was accompanied by an unprecedented increase in equity. This is related to the record profit of \$52 million, which is discussed in section 4.2.2.3 below.

#### 4.2.2.2 FSC Components of Debt and Equity

**Table 4.2** FSC Components of Equity and Long-term Debt

<b>Year</b>	<b>Capital</b>	<b>Ret. Profits</b>	<b>Reserves</b>	<b>Loans</b>	<b>Grants</b>
	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>
1997	22,200	21,928	75,620	-----	3,248
1998	22,200	21,100	70,459	-----	3,128
1999	22,200	20,537	71,893	28,900	3,014
2000	22,200	17,262	71,893	33,841	2,540
2001	22,200	(3,485)	71,893	31,871	2,365
2002	22,200	(19,820)	71,893	36,391	2,191
2003	22,200	(33,776)	71,893	40,885	2,017
2004	22,200	(31,275)	71,893	54,000	1,842
2005	22,200	20,864	71,893	12,000	1,639
2006	22,200	21,257	71,893	7,044	1,465
2007	22,200	27,659	71,893	26,813	1,290

**Source** Annual Reports of Fiji Sugar Corporation Limited

Table 4.2 disaggregates debt and equity into their various components. The reserves are for capital, asset replacement, and uninsured risk, which were all created out of retained profits.

The first important observation from table 4.2 is that no capital was contributed during the review period. Nevertheless the majority shareholder has contributed debt finance in the form of loans and grants.

Second, a general decline is evident in the level of retained profits. This is due to deteriorating profitability for most of the period, including successive losses from 2000 to 2003. The substantial turn-around in 2005 resulted from the conversion of government loans valued at \$54 million to a revenue grant. Another loss was recorded in 2006, while 2007 saw a return to profitability.

Third, reserves declined slightly between 1997 and 1999 due to transfer of the catastrophe reserve to retained profits. This reserve had been established in 1994 for losses relating to commercial and industrial buildings. In 1998, the directors approved the transfer of \$4.8 million to retained profits on the basis of:

“the Corporation’s poor liquidity position, the low returns on long-term deposits, and the ready availability of insurance cover.” (FSC 1998: 8)

A further \$2.6 million was transferred to retained profits in 1999. In the same year, \$4 million was transferred from retained profits to the asset replacement reserve to provide for the replacement of fixed assets (FSC 1999).

Fourth, the government grants reflect government majority ownership in the company as well as the national significance of the sugar industry. The grants were received in the early 1990s and represent contributions towards the cost of bulk sugar storage and rail transportation systems. They are amortised over periods of 50 and 20 years respectively (FSC 2007).

Fifth, there was a sustained increase in the value of loans, which reached a peak in 2004. The next section discusses loan financing in detail.

#### 4.2.2.3 FSC Loans

FSC continues to utilise loan financing although the source of its loans has varied considerably. This is summarised in table 4.3.

In 1997, FSC reported a negative cash position, for the first time in 10 years. This forced the company to increase its bank overdraft by \$2 million (FSC 1997). Negative operating cash flows in 1998 were attributed to: crop damage by Cyclone Gavin; and an extended crushing season, resulting from a three-week strike by members of the Fiji Sugar and General Workers Union. This contributed to a further deterioration in the cash balance, with the bank overdraft rising to \$11.2 million at the end of 1988. As a short-term measure, the company obtained \$29.9 million through an issue of promissory notes (FSC 1998).

**Table 4.3 FSC Loans**

Source	Year	Value	Interest	Term	Role of government
		\$M	%		
Westpac (Fiji)	1999	20.4	5.99 to 9.52	5 years Repaid in 2004	Guarantor
Government (Fiji)	1999	8.5	8.0	15 years Initial 5 year holiday Converted to grant in 2004	Lender
	2000	8.5			
	2002	8.5			
	2003	8.5			
	2004	20.0			
Sugar Cane Growers' Fund (Fiji)	2005	12.0	2.0	6 months Repaid in 2006	Guarantor
EXIM Bank (India)	2006	7.0	Variable	10 years Initial 2 year holiday	Guarantor
	2007	19.6	LIBOR+0.5		

**Source** Annual Reports of Fiji Sugar Corporation Limited

**Note** LIBOR is the London Inter-bank offered rate

Following redemption of the promissory notes in 1999, FSC obtained two loans. To strengthen its cash position, it negotiated a loan of \$20.4 million from Westpac Banking Corporation. The loan was to be repaid over five years at varying rates of interest: 5.99 percent for the first year; 6.18 percent for the second year; and thereafter at 0.27 percent above the bank's prime lending rate, which averaged 9.25 percent during the last three years of the loan. The loan was guaranteed by the government, and fully repaid in 2004.

Also in 1999, government extended FSC an unsecured loan of \$8.5 million. The loan was used to finance capital expenditure. In particular, it funded the:

“purchase of plant and equipment that will improve the milling efficiency. In addition, the loan will also be used to upgrade sections of the tramline network, and to generally improve infrastructure relating to the transportation of rail cane.” (FSC 1999: 43)

The loan was to be repaid over 15 years at a fixed interest rate of 8 percent, with repayments of principal and interest to commence after five years.

Additional amounts of \$8.5 million were received from government in 2000, 2002 and 2003. In 2004, the balance of the loan was increased by a further \$20.0 million. All these funds were received under the same terms and for the same purposes as the initial amount received in 1999. At the end of the 2004 financial period, the loan balance stood at \$54 million, representing 51.1 percent of total liabilities.

FSC was unable to repay the loan, so parliament approved the conversion of the loan into a grant in September 2004. The re-classification generated revenue of \$54 million and contributed to an unprecedented profit in the 2005 financial period. The forgiveness of the loan had been anticipated since 2003, when government first announced its intention to write-off loans to FSC as part of the restructure of the sugar industry. The conversion:

“strengthened our balance sheets, essentially eliminated all previous losses and significantly improved the Corporation's shareholders funds.”(FSC 2005: 8)

In 2005, FSC borrowed \$12.0 million from the Sugar Cane Growers Fund at an interest rate of 2 percent. The loan was for a period of six months and guaranteed by government. The main purpose of the loan was to finance payments to cane growers. It was fully repaid in 2006.

Also in 2005, government and FSC adopted a plan to re-structure the sugar industry. Under the plan, the four sugar mills were to be upgraded over a three year period, commencing in 2006. The estimated cost of the upgrade is \$86 million (US \$54 million), which will be obtained through a soft loan from the EXIM Bank of India.

“The loan is secured by a Government guarantee and is repayable in successive half yearly equal installments over a ten year period with an initial moratorium of two years. Interest is payable at the rate of LIBOR plus 0.5%.” (FSC 2007: 48)

Of the \$86 million, \$7.0 million was received in 2006 and a further \$19.6 million in 2007. This constituted the total loan balance at the end of 2007, as shown in table 4.2.

#### 4.2.2.4 FSC Summary

In summarizing the capital structure of FSC, two years stand-out. The first is 1999, when gearing escalated from less than five percent to over 20 percent, through the acquisition of loan finance. However, this is a symptom of the declining profitability which first arose in 1997 and had been treated unsuccessfully with short-term debt; first with bank overdrafts and then with promissory notes. Interestingly, FSC continued to declare and pay dividends from 1997 to 1999, rather than retaining funds within the business. It also attempted to mask the full extent of the problem through an asset revaluation in 2000. Nevertheless, since 2002 the audit report has contained an emphasis of matter which highlights the company's dependence on continued government support.

The second significant year is 2005. Retained earnings had been eroded through successive losses in most years up to 2003. The company responded by relying increasingly on government loans, causing gearing to rise to 47.1 percent in 2004. This culminated in the conversion of all outstanding loans to a

government grant in 2005. The restructure from debt to equity pushed leverage back below its level in 1999.

FSC has been forced to rely on loans from related parties such as government and cane-growers. These stakeholders have provided loans at preferential interest rates because of their vested interest in the industry. It is questionable whether FSC would have been able to obtain finance of that amount and under those terms from a third party. Indeed, without such support, FSC would no longer be a going concern (FSC 2007).

“... the continued financial and other support from the Government and funding for the sugar industry at large are critical for long term sustainability and survival of the sugar industry and the Corporation... .” (FSC 2007: 50)

This underscores the national significance of the Fiji sugar industry as an important source of foreign reserves and a major employer. As such, any instability or down-sizing in the industry has both economic and political implications, given that both cane farmers and mill workers are heavily unionised.

### **4.3 Capital Structure of State-Owned Entities**

This section analyses the capital structure of three entities owned by government. They have been chosen to represent the various stages of public enterprise reform. In chapter one, these stages were identified as reorganisation, corporatisation and privatisation.

FEA may be regarded as a re-organised entity in the sense that it has implemented business-oriented managerial practice and is classified as a commercial statutory authority, indicating that it still has social obligations in addition to its commercial objectives. FEA is a very large organisation. In 2007 it recorded total assets of \$669.1 million and total revenue of \$147.8 million.

As a corporatised entity, Post Fiji Limited has advanced further along the path of public enterprise reform. In general, it operates with purely commercial objectives. However, it is still fully owned by government. In comparison to FEA

and Air Pacific, Post Fiji Limited is a small company with total assets of \$30.3 million and total revenue of \$18.2 million in 2007.

Air Pacific Limited represents an organisation that has reached the final stage of public enterprise reform. It operates as a company and government has divested a large part of its shareholding to private investors, although it maintains a controlling interest. The company is also extremely large; in 2007 it reported total assets of \$468.3 million and total revenue of \$469.4 million.

#### **4.3.1 Air Pacific Limited**

Although the airline has been known as Air Pacific since 1971, it was first established as Katafaga Estates Limited in 1951 and later changed its name to Fiji Airways in 1958. Air Pacific became a public company in May 1998 (APC 2001). Based in Nadi, the airline currently operates a fleet of six aircraft and provides international air services to 18 cities in 12 countries in and around the Pacific Basin (APC 2001).

In April 2006, Air Pacific announced that its newly formed subsidiary, Fiji Airlines Limited, had acquired the aircraft, operations, routes and staff of Sun Air Limited, a domestic airline. This facilitated Air Pacific's re-entry to the domestic market. The airline also owns 38.8 percent of Richmond Limited, which developed and constructed the four-star Sofitel Resort at Denarau Island in Nadi. The hotel opened in 2005 (APC 2007). The acquisition of Sun Air and investment in the Sofitel will enable Air Pacific to utilise spare capacity on its international routes, by creating access to existing and additional accommodation. Investment in the Sofitel represents diversification from the core airline operations into the related hotel business.

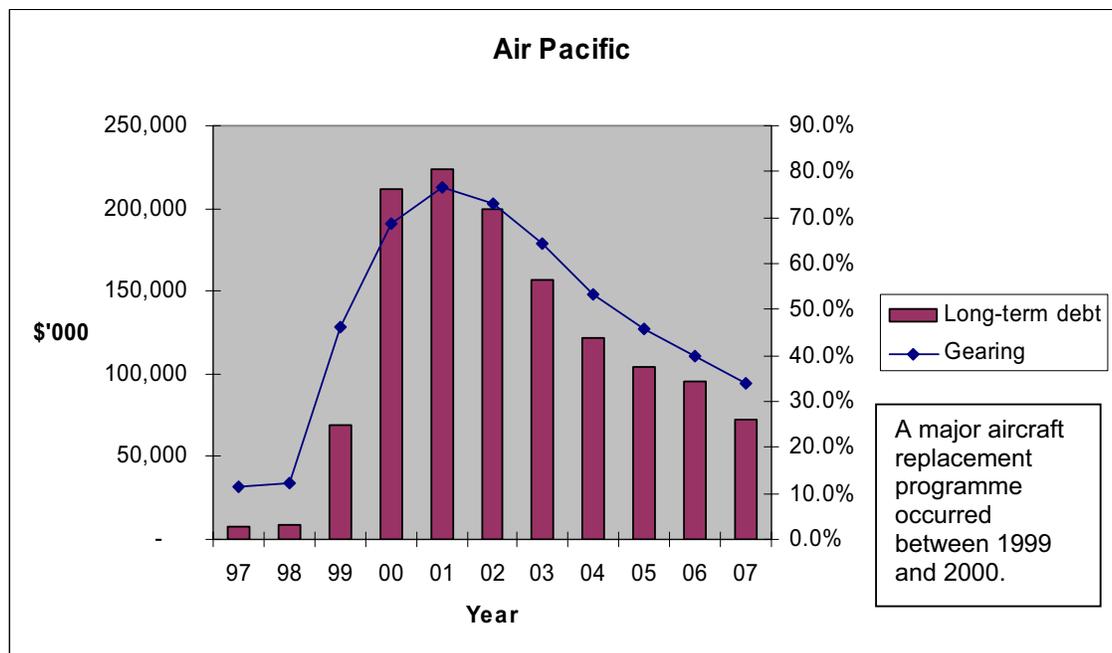
The Fiji government has a controlling interest in Air Pacific Limited, by virtue of its 51 percent shareholding in the airline. Qantas Airways Limited owns 46.32 percent of the shares, while the remaining 2.68 percent is owned by Air New Zealand Limited and the governments of Kiribati, Nauru, Samoa and Tonga (APC 2007).

#### 4.3.1.1 Air Pacific Capital Structure

On average, Air Pacific has relied more on debt financing. The airline displayed very high levels of leverage between 1997 and 2007, with an average gearing ratio of 55.0 percent. Gearing exceeded 40 percent in eight years during the period. Following the peak of 76.6 percent in 2001, it fell steadily to reach 34.1 percent at the end of 2007.

Graph 4.3 illustrates how Air Pacific's capital structure is affected by fleet replacement. Long term debt first increased and then decreased from 2002 onwards. The step increase between 1999 and 2000 relates to acquisition of new aircraft. Leverage increased sharply at the time of replacement before being managed down over the life-cycle of the aircraft.

**Graph 4.3** Air Pacific Long-term Debt and Gearing



Source Appendix 10

Appendix 10 shows that equity increased in every year except 2001 and 2007. These years correspond with major external events that significantly reduced revenue and profits.

#### 4.3.1.2 Air Pacific Components of Debt and Equity

Table 4.4 provides a more detailed analysis of Air Pacific's capital structure.

**Table 4.4** Air Pacific Components of Equity and Long-term Debt

Year	Capital	Ret. Profits	Reserves	Leases	Loans
	\$'000	\$'000	\$'000	\$'000	\$'000
1997	19,480	20,130	17,243	-----	7,398
1998	19,480	21,231	22,458	-----	8,725
1999	26,093	26,770	27,513	61,136	7,830
2000	26,093	37,348	32,513	204,640	6,818
2001	26,093	35,050	7,513	218,537	5,613
2002	26,093	40,385	7,513	196,246	3,609
2003	26,093	53,639	7,513	156,803	-----
2004	26,093	73,217	7,513	121,612	-----
2005	26,093	97,951	-----	104,106	-----
2006	26,093	117,799	-----	95,891	-----
2007	26,093	113,902	-----	72,537	-----

**Source** Annual Reports of Air Pacific Limited

The first observation that can be made from table 4.4 is that capital was only injected once during the period. This occurred during 1999, when a call was made on partly paid shares owned by the Fiji government. Close to 6.7 million shares, with a par value of \$1, had only been paid up to one cent. Government settled a call on the remaining 99 cents per share and concurrently sold 35.9 percent of its shares to Qantas. This reduced government ownership to 51 percent and increased Qantas' shareholding to 46.05 percent (APC 1999). The sale represented partial divestment of a profitable state-owned entity.

Second, the substantial growth in retained profits reflects profitable operations, combined with conservative dividend payout ratios. In 2001, the airline reported its first loss in 15 years, following a political coup in 2000 which adversely affected visitor arrivals. Between 2002 and 2006, the company made dividend

payouts of 20 to 30 percent of profit. Performance was again impaired in 2007, following the political coup in December 2006 and the events surrounding it.

Third, the company has reduced its reserves twice. In 2001, it transferred the aircraft replacement reserve of \$25.0 million back to retained profits. This occurred in the same year that the company recorded a loss of \$27.3 million. In 2005, the capital reserve of \$7.5 million was also transferred back to retained profits.

The fourth issue relates to debt financing. During the review period, the airline chose to completely eliminate loans from its capital structure, opting instead for lease financing. Prior to 1999, the principal form of financing utilised by the airline was loans. The last loan obtained by Air Pacific was from the European Investment Bank. Secured by a government guarantee, the loan proceeds were received in 1992 and 1993 at an interest rate of 3 percent. Repayments commenced in 1995 and the final repayment was made in 2003.

#### 4.3.1.3 Air Pacific Financing Leases

Air Pacific leases three of its six aircraft under finance leases from the Boeing Corporation. The remaining three are leased from Qantas, under operating leases. Finance leases first appeared on the balance sheet in 1999. Prior to that time, the airline classified all leases as operating leases, since the lessor effectively retained most of the risks and benefits relating to ownership of the leased aircraft.

The value of finance leases reached a peak in 2000 and 2001, following the delivery of two 737-800 aircraft during the 2000 financial period. This saw the value of financing leases increase to \$218.5 million at the end of 2001, representing 65.8 percent of total liabilities.

At the end of the 2007 financial period, the airline's lease liability amounted to \$72.5 million. Financing leases will be fully repaid by 2011 and Air Pacific has entered a purchase agreement with the Boeing Corporation for the acquisition of five 787-9X2 aircraft. The first delivery is scheduled for August 2011 (APC 2007). With reference to graph 4.3, this would represent the beginning of a new cycle.

Commitments in respect of operating leases amounted to \$102.7 million at the end of 2007. Of this amount, \$36.8 million was payable within one year.

#### 4.3.1.4 Air Pacific Summary

In the case of Air Pacific, capital structure has been affected by fleet replacement as well as political turbulence. The former represents a proactive, strategic initiative on the part of the company, while the latter illustrates its reaction to externally imposed events. The airline has been able to insulate itself against external shocks by maintaining sufficient cash and reserves.

In 2000 and 2001, the airline acquired three new aircraft under financing leases, resulting in a planned increase in leverage. This fleet replacement happened to coincide with the political coup of 2000 and the subsequent reduction in profitability. While leverage would inevitably have increased through the leases, it is questionable whether gearing would have reached the same heights without the added pressure resulting from the coup.

Profits were again impacted by the political coup of 2006. However, Air Pacific was successful in meeting its lease commitments and reducing leverage through its substantial cash balance. Eight months before the coup, Air Pacific reported a cash balance of \$202 million, including \$184 million invested in term deposits. The next cycle of fleet replacement is scheduled for 2011, when leverage may be expected to peak once more.

#### **4.3.2 Fiji Electricity Authority**

Established under the Electricity Act of 1966, the Fiji Electricity Authority (FEA) commenced operations in August of the same year (FEA 2008). FEA is classified as a commercial statutory authority and is not incorporated as a company.

FEA is the sole commercial provider of electrical power throughout Fiji. Since 1982, this has been generated principally through hydro-electricity from the Monasavu Dam. However, part of the national grid is still reliant on generators powered by diesel fuel. FEA also purchases electricity from FSC, Emperor

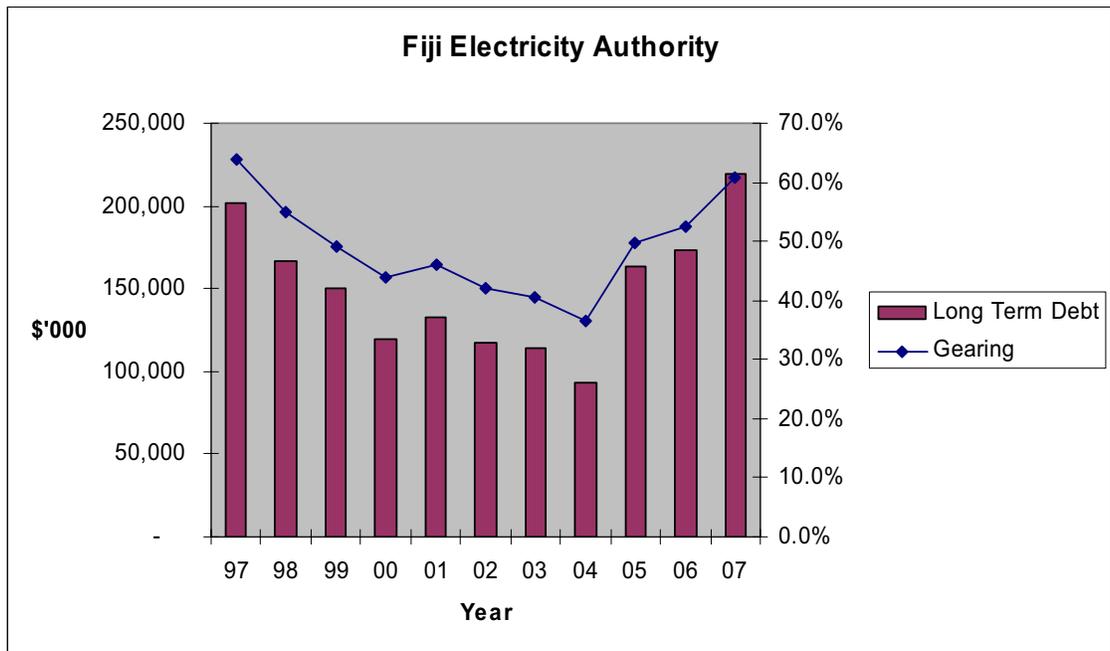
Goldmine and Tropik Wood, which produce electricity in excess of their requirements (FEA 2006).

Since 2004, electricity tariffs have been regulated by the Commerce Commission. In 2006, the Commission permitted FEA to introduce a fuel surcharge which enables it to recover the increasing cost of diesel fuel (FEA 2007).

Graph 4.4 shows that FEA’s financing preference has gravitated from debt to equity and back to debt. FEA’s leverage declined steadily from 1997, reaching a minimum of 36.5 percent in 2004. This was the result of consistent reductions in debt, accompanied by sustained increases in equity. However, a substantial increase in debt caused leverage to increase successively from 2005 to 2007.

#### 4.3.2.1 FEA Capital Structure

**Graph 4.4** FEA Long-term Debt and Gearing



Source Appendix 11

Gearing averaged 49.7 percent during the review period and exceeded 50 percent in four years during that time. It exceeded 40 percent in every year except 2004 (see appendix 11 for details).

Appendix 11 shows that FEA employs a very high percentage of long-term debt. This has remained at levels in excess of 70 percent throughout the period and exceeded 80 percent during most of that time.

#### 4.3.2.2 FEA Components of Debt and Equity

FEA conducted asset revaluations in 1992 (\$163.1 million) and 2005 (\$74.2 million). The relating reserves have been subtracted to determine 'adjusted equity' in appendix 11. The reserves shown in table 4.5 include non-refundable customer deposits and the asset replacement reserve of \$10 million, which was established out of retained profits in 1999.

**Table 4.5** FEA Components of Equity and Long-term Debt

<b>Year</b>	<b>Ret'd Profits</b>	<b>Reserves</b>	<b>Bonds</b>	<b>Loans</b>	<b>Grants</b>	<b>Customer Deposits</b>
	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>
1997	97,584	16,792	118,090	51,234	22,041	10,209
1998	118,898	17,703	84,100	49,846	21,673	10,850
1999	126,967	28,021	69,400	46,887	21,315	12,778
2000	122,055	30,383	102,911	-----	20,967	
2001	124,945	31,336	96,100	5,661	20,618	10,777
2002	128,732	33,188	80,400	5,632	20,269	11,125
2003	131,341	35,810	75,900	5,600	19,921	12,620
2004	124,738	37,647	54,800	5,568	19,199	13,738
2005	123,187	42,331	80,800	51,263	15,845	15,945
2006	110,825	46,079	64,400	76,914	14,988	16,944
2007	90,984	49,492	113,150	72,888	14,132	18,784

**Source** Annual Reports of FEA

Since FEA is not incorporated as a company, it has no capital. Government does contribute finance, but this takes the form of capital and revenue grants, which are generally ear-marked for specific purposes. For example FEA received a government loan in 1990, which was subsequently converted to a government grant in February 1996. The purpose of the grant was to finance

rural electrification in line with government policy objectives. Together with interest, the total value of the grant was \$9.6 million.

FEA's capital structure over the period demonstrates a consistent increase in the level of retained profits. This can be attributed to a couple of factors.

First, FEA's operations have been very profitable and it has recorded a profit in every year from 1990 to 2003, with the exception of 2000 when it reported a small loss. This was attributed to the seizure by landowners of the Monasavu dam and the Wailoa hydro-electric power station, at the height of political unrest. As a result of the six-week seizure, electricity sales decreased, expenditure on diesel fuel increased and FEA incurred additional security costs (FEA 2001). FEA also recorded three consecutive losses from 2004 to 2006 before returning to profitability in 2007. The losses were caused by the increasing cost of diesel fuel and compounded by low water levels in the Monasavu Dam, which forced FEA to utilise more diesel power. The Commerce Commission did not allow FEA to pass these costs to consumers until 2006.

Second, FEA has never paid a dividend, although it continues to subsidise power to rural areas in Viti Levu as well as the entire islands of Vanua Levu and Ovalau. The annual cost of this subsidy has ranged from \$15 million to \$30 million. In 2002, government acknowledged that the cost of meeting this social obligation could be implicitly regarded as a dividend to the shareholder (FEA 2005).

In addition, a sustained reduction in the value of outstanding bonds and loans is evident up to 2004. FEA had virtually eliminated loans by the end of 2004, but in 2005 cabinet agreed to guarantee FEA loans. This opened the way for FEA to negotiate commercial loans at lower interest rates and led to an increase in the loan portfolio (FEA 2006). Since bonds represented the major form of debt financing during the review period, they will be analysed in greater detail below.

#### 4.3.2.3 FEA Bonds

FEA first issued bonds in 1979 when it commenced construction of the Monasavu Hydro-electric Scheme. The value of bonds was quite low at that time, with FEA opting for loan financing from various local and overseas

financiers, including Fiji National Provident Fund (FNPF), Suva City Council, Asian Development Bank, Commonwealth Development Corporation, European Investment Bank and World Bank.

During 1993, FEA commenced a programme of financial restructuring, which involved redeeming overseas debts ahead of schedule. Local loans from FNPF were consolidated into one loan, which was simultaneously re-negotiated on terms and conditions that were more favourable to FEA. The value of outstanding bonds reached a peak of \$154.0 million at the end of 1994, exceeding the value of loans for the first time. FEA subsequently issued bonds in 2001, 2003, 2005 and 2007.

In 2001, the Authority issued bonds valued at \$44 million. This included \$29 million to finance the purchase of new diesel generator sets as part of its contingency plans. Other bonds were issued to facilitate refinancing of older bonds and loans, which had higher interest rates (FEA 2002).

In 2003, the Authority raised \$15.6 million through an issue of bonds. These funds were used to meet additional expenditure incurred as a result of the water crisis that year. Low water levels at the Monasavu Dam necessitated reliance on diesel-powered generators. Compounded by the extremely high price of oil, this placed substantial, unplanned pressure on FEA's finances (FEA 2004).

In 2005, bonds were issued to finance new diesel generators for the Kinoya power station. These engines are certified to run on refined vegetable oils (FEA 2006) and represent diversification towards renewable energy.

In 2007, FEA took advantage of low interest rates in the domestic debt market to raise \$58.75 million through a bond issue. These funds:

“... will be fully utilised in 2008 when a contract is awarded to construct a \$160 million hydro power project at Nadarivatu in Viti Levu.” (FEA 2007: 9)

#### 4.3.2.4 FEA Summary

FEAs capital structure illustrates the impact of several factors: its social obligations; the mounting cost of diesel fuel; price regulation; and political instability.

With regard to its social obligations, FEA is committed to rural electrification. The cost of providing electricity to rural areas amounted to \$30 million in 2005, over \$20 million in 2006 and \$15 million in 2007.

In relation to fuel costs, FEA continues to implement aggressive capital expenditure programmes, including renewable energy projects designed to reduce reliance on diesel fuel.

While attempting to meet its social obligations and reduce its reliance on diesel fuel, FEA has had to cope with considerable pressure from nature, price control and the effects of political upheaval, most recently in 2000. On the one hand, reduced water levels resulting from low rainfall have increased reliance on expensive diesel fuel. On the other hand, price controls have impaired or at least delayed FEA's ability to recover costs from consumers.

These issues appear to have come to a head in 2004. The aggressive investment programme forced FEA to borrow more against a backdrop of declining profits. As a result, leverage rose rapidly, almost completely off-setting the reductions since 1998. FEA contends that electricity tariffs must be increased, so that future capital expenditure can be financed through operating cash flows while the level of new borrowings is limited to an acceptable level (FEA 2007).

#### **4.3.3 Post Fiji Limited**

Post Fiji Limited commenced operations on 1 July 1996. It is a private company, incorporated under the Companies Act. Until 1989 Fiji's postal services were administered by a government department, which was corporatised in 1990. It was then restructured three times until 1996 when it was separated into two entities; Post Fiji Limited and Telecom Fiji Limited. The latter is now a fully-

owned subsidiary of Amalgamated Telecom Holdings Limited (ATH) while all shares in Post Fiji Limited are owned by the Fiji government (PFL 2006).

The core activities of Post Fiji are:

“message communication in letters, and in the distribution of courier and parcel items. It also provides stamps, financial transactions ... data processing and mail production services.”  
(PFL 2007: 2)

These services are provided through a network of 59 post offices and 97 postal agencies, over half of which are located in rural and island communities (PFL 2007). Post Fiji Limited also operates close to 30 stationery outlets, known as Post Shops.

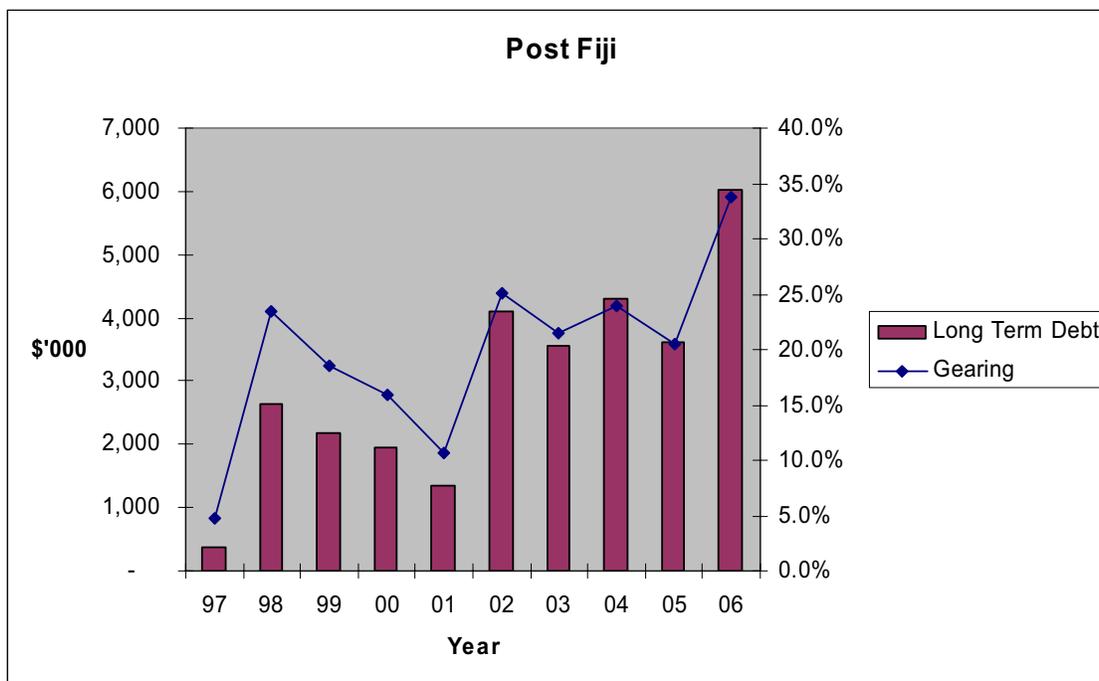
Approximately half of the company’s revenue is subject to price regulation by the Commerce Commission. This includes domestic mail tariffs and rental charges for postal boxes. As part of its social obligations, government requires the company to provide mail services between any locations in Fiji at a uniform price, even when the cost of delivery exceeds the price charged. Government reimburses the company for losses incurred through operating post offices in certain rural locations (PFL 2007). This revenue grant acknowledges that such operations are not commercially viable and the company only maintains them because government requires it to do so.

#### 4.3.2.2 Post Fiji Capital Structure

Graph 4.5 shows that Post Fiji has recorded comparatively low levels of leverage. It has utilised relatively little long-term debt and relied more on equity financing. During the review period, gearing remained below 35.0 percent, with an average of 21.2 percent.

Historically, long-term debt has represented a relatively small proportion of total liabilities. Appendix 12 shows that this has generally been less than 30 percent. Following several successive decreases between 1998 and 2001, Post Fiji assumed much higher levels of debt from 2002 onwards. In 2006, retained profits fell while long-term debt increased substantially. As a result, gearing reached a maximum level of 33.8 percent.

**Graph 4.5** Post Fiji Long-term Debt and Gearing



Source Appendix 12

#### 4.3.2.2 Post Fiji Components of Debt and Equity

Table 4.6 disaggregates equity and long-term debt.

In 1997 issued capital increased by \$5.6 million, through the issue of ordinary shares to the Fiji government (PFL 1998). No further capital was contributed during the following decade.

Retained profits have increased steadily due to consistent profitability in every year of operation, except 2006 when the company recorded its first loss. This was largely attributed to the payment of redundancy packages, amounting to a little over \$3 million (PFL 2007).

The main component of long-term debt was loans from ANZ. Post Fiji has also employed financing leases and received government grants. The leases relate to motor vehicles, which are financed through ANZ. The grants represent amounts received from government for construction of rural post offices. For instance, the 2005 annual report disclosed that:

“As part of our social obligations to the rural communities’ two new Post Offices together (with) ... staff quarters were completed during the year – Nasau Post Office in Koro at a total cost of \$210,651 and Keiyasi Post Office in Navosa at a total cost of \$181,750.” (PFL 2006: 15)

**Table 4.6** Post Fiji Components of Equity and Long-term Debt

<b>Year</b>	<b>Capital</b>	<b>Ret. Profits</b>	<b>Loans</b>	<b>Leases</b>	<b>Grants</b>
	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>
1997	5,600	1,810	-----	368	-----
1998	5,600	2,996	2,393	242	-----
1999	5,600	4,021	1,949	234	-----
2000	5,600	4,770	1,482	103	259
2001	5,600	5,602	991	103	246
2002	5,600	6,631	3,515	67	514
2003	5,600	7,376	3,035	72	454
2004	5,600	8,119	3,442	39	829
2005	5,600	8,399	2,776	23	810
2006	5,600	6,192	5,243	-----	790

**Source** Annual Reports of Post Fiji Limited (2007 Annual Report had not been released)

#### 4.3.2.3 Post Fiji Loans

Graph 4.5 shows three spikes, which represent the periods in which new or additional loan finance was acquired.

In September 1998, Post Fiji obtained a loan of \$2.4 million to finance hardware and software for its point of sale system. The loan was secured by a mortgage debenture over the assets of the company (PFL 1999).

During 2002, the company rolled-over the first loan and borrowed another \$3.0 million, at an interest rate of 6 percent. This loan was secured by a mortgage debenture over the company’s assets, liabilities, uncalled and unpaid capital. The additional funds were used to finance construction of the new mail centre at Laucala Beach Estate and renovations to the General Post Office in Suva (PFL

2003). In 2004, the loan terms were re-negotiated and the interest rate reduced to 5.25 percent. This reflected a general decrease in lending rates by commercial banks (RBF 2008).

In 2006, the loan was rolled-over again with another \$3.5 million received from ANZ. The interest rate was simultaneously increased to 7.25 percent. The main purpose of the loan was to finance the redundancy payout mentioned above (PFL 2007).

#### 4.3.2.4 Post Fiji Summary

Post Fiji's gearing demonstrates an upward spiral centred on events in 1998, 2002 and 2006. These years represent step-changes in leverage which appear to have become institutionalised through inadequate financial planning. For instance, the company implemented major capital expenditure in 2002, before it had fully repaid the loan taken in 1998. In the meantime, it had increased its dividend payout ratio to 30 percent in 2000.

While repaying the second loan, it increased its dividend payout ratio to 50 percent in 2003:

“Post Fiji is endeavouring to increase the dividend rate to 50 percent as required by the Ministry of Public Enterprise.” (PFL 2003: 18)

Before repaying the second loan in full, the company committed itself to a \$3 million redundancy payout in 2006.

While leverage may not be considered high, the company is clearly taking on additional debt in order to maintain the dividend demanded by its shareholder. This suggests that Post Fiji may need to re-negotiate the dividend payout ratio with government.

## 4.4 Summary

Several conclusions can be drawn from the analysis of selected firms in this chapter.

First, larger firms tend to employ higher leverage than smaller ones. This is consistent with expectations from previous studies in other countries which are summarised in appendix 1. During the review period, FEA and Air Pacific recorded average gearing ratios of 49.7 percent and 55.0 percent respectively. In comparison, Pacific Green and Post Fiji reported 17.3 percent and 21.2 percent respectively. In addition, the larger firms recorded maximum gearing levels in excess of 60 and 70 percent, while those of smaller firms remained below 35 percent. Although average gearing for FSC was comparable to that of the smaller firms, it reached a maximum of 47.1 percent, which is similar to the other large entities.

Second, financing preferences differ across industries. For instance, Air Pacific now leases all of its aircraft: either directly from the manufacturer, under financing leases; or from other airlines, under operating leases. This may be explained by the fact that leasing is widely accepted and practiced within the airline industry. An additional explanation is the strategic business decisions by Air Pacific to align itself with the Boeing Corporation and Qantas, from which it leases aircraft. FSC and Pacific Green, which are both manufacturing companies, have favoured loan financing. Bonds are the predominant source of finance employed by the power utility (FEA) and loan financing is preferred by the postal monopoly.

Third, a firm's financing preferences can change over time. This is most evident in the case of FEA, which was once strongly reliant on offshore loans. During the mid-1990's it restructured its finance, converting most of its debt to domestic bonds. One of the main objectives of restructuring was to minimise the cost of capital. In this regard, FEA successfully reduced the weighted average cost of capital below the commercial bank lending rate. From 2005, loans have returned to a significant level within FEAs debt portfolio since loan interest rates are now comparable to bond interest rates. Another example of changing preferences is Air Pacific, which switched from loan financing to lease financing during the review period.

Fourth, there are several examples where reduced profitability is accompanied by additional borrowing and increased leverage, in line with the predictions of the pecking order theory and the findings of several previous studies

summarised in appendix 2. Notable examples include FSC and Pacific Green. These observations present potential for further investigation of the relationship between firm profitability and leverage.

Fifth, profitability is also affected by price regulation. Although FEA and Post Fiji both enjoy monopolies, they also operate under price-regulation which restricts their ability to pass increased costs to consumers. Air Pacific, on the other hand, faces no such difficulty in increasing the level of fuel surcharges. As such, the cost of fuel imports has had less impact on the profitability of Air Pacific, compared to FEA.

Sixth, the effect of state-ownership seems to differ across firms. FEA is a commercial statutory authority and has recorded average gearing of 49.7 percent, largely on the back of government guarantees. These lower the risk associated with its borrowings, enabling it to obtain finance at reduced interest rates. On the other hand, Post Fiji is a government commercial company and must negotiate borrowing arrangements on normal commercial terms. It has recorded average gearing of 21.2 percent. This suggests that state-owned entities may borrow less when government guarantees are withdrawn. In fact, leverage for Post Fiji is comparable to that of Pacific Green, which is a publicly listed company and recorded average gearing of 17.3 percent.

Seventh, capital structure of publicly listed firms can also be affected by government assistance. For example, FSC has been able to approach levels of 50 percent, largely through government guarantees. Between 1999 and 2004, it accumulated loans of \$54 million from the Fiji government. Following the forgiveness of this debt, FSC obtained soft loans, firstly from a strategic stakeholder and more recently from a commercial bank in India. The latter deal was negotiated and guaranteed by the Fiji government. These soft loans have meant that FSC is able to obtain finance at interest rates which are significantly below those available domestically. In summary, government guarantees have enabled FSC to continue operating against a backdrop of unprofitable operations and negative cash flows.

Eighth, the wide variation observed in debt levels within each organisation does not appear to support the existence of a well-defined target debt ratio. Such

variations are contrary to the predictions of the static trade off theory. In fairness, it must be acknowledged that several factors have reduced the ability of each firm to plan and manage its capital structure. In the case of Pacific Green, it was the fire in 2004. For FSC, it included cyclones and strikes. Air Pacific was affected by the political coups of 2000 and 2006, while reduced water levels and increasing fuel prices have placed pressure on FEA. Most organisations reviewed in this chapter have increased leverage in response to these external shocks. Air Pacific is the only organisation that appears to have successfully mitigated such pressure through substantial reserves and cash balances.

Finally, the existence of private shareholders may ensure that dividend levels are maintained at sustainable levels, leaving sufficient retained profits for re-investment. In this context a comparison can be made between Air Pacific and Post Fiji. The former has maintained a dividend payout ratio of 30 percent while the latter pays up to 50 percent. The relatively conservative payouts by Air Pacific may reflect the significant influence of minority shareholders who own 49 percent of the shares. Qantas alone owns 46.32 percent and appoints four of the nine directors. On the other hand, government owns 100 percent of the shares in Post Fiji so there are no minority shareholders to challenge its decisions or propose alternative courses of action.

These conclusions merit further investigation among a larger sample of firms. Towards this end, chapter five will extend the analysis to other publicly listed companies and state-owned entities.

# **CHAPTER FIVE**

## **REGRESSION ANALYSIS**

## **5.1 Introduction**

This chapter compares the capital structure of publicly listed companies and state-owned entities in Fiji using ordinary least squares regression of pooled data. Chapter four analysed individual firms in detail but the analysis was restricted to five selected entities over a ten year period. This chapter will employ statistical analysis of a larger sample of firms.

Leverage is the dependent variable in the regression model and is measured in two ways; firstly using total liabilities and secondly using long-term debt only. Analysis of selected entities in chapters three and four suggests that firm size and profitability both impact capital structure. The regression model used in this chapter will test whether these variables significantly affect leverage among firms in Fiji.

The analysis in this chapter extends knowledge in the discipline by re-examining firm type as an independent variable. Few previous studies have considered how state ownership impacts leverage and such studies have generally been restricted to listed companies. The present study provides new insight by examining unlisted companies which are still fully owned by the state.

The discussion in chapters three and four indicates an association between firm type and leverage. In this chapter, the regression model will test the nature and extent of the correlation between these variables. This is important given that previous studies have produced conflicting results regarding the relationship between state-ownership and leverage (Chen and Strange 2005; Al-Sakran 2001). The regression model also includes several control variables which were identified from previous studies in chapter two, namely tangibility, tax and growth.

### **5.1.1 State-owned Entities**

State-owned entities include government commercial companies (GCCs), commercial statutory authorities (CSAs) and statutory authorities (SAs). 12 state-owned entities are classified as GCCs, four are classified as CSAs and a further ten are classified as SAs.

A government company is one in which 100 percent of the shares are:

“owned by the State, whether such shares are held in the name of the Minister, a public officer, a nominee of the State or otherwise.” (Public Enterprise Act 1996: 1051)

Under the provisions of the Public Enterprise Act, a government company may be declared as a GCC. In such cases, oversight of the company and appointment of its directors is transferred from the relevant line ministry to the Ministry of Public Enterprise. For example, Airports Fiji Limited operates in the civil aviation sector, which generally falls within the jurisdiction of the Ministry of Transport. However, the company is classified as a GCC, so its oversight rests with the Ministry of Public Enterprise. State-owned entities classified as GCCs are listed in appendix 13.

GCCs operate purely on commercial objectives meaning that their primary concern is to make a profit. Nevertheless, it is recognised that:

“for the benefit of Fiji, there will be occasions when it is beneficial for Government Commercial Companies to undertake non-commercial activities.” (Public Enterprise Act 1996: 1078)

A statutory authority is defined as

“a body corporate incorporated by or under any Act (excluding ... the Companies Act).” (Public Enterprise Act 1996: 1053)

Some of these organisations are classified as CSAs. They differ from other statutory authorities in the sense that they have commercial functions in addition to their social obligations. The four CSAs are Fiji Electricity Authority, Fiji Meats and Industry Board, Housing Authority and Public Rental Board. They are listed in appendix 15. CSA boards are appointed by the relevant line ministry, which is also responsible for ensuring that they fulfill their social responsibilities. However, the commercial activities of these organisations are monitored by the Ministry of Public Enterprise.

Ten entities are classified as statutory authorities. They are listed in appendix 14.

## **5.2 Data**

Data have been extracted from audited financial statements available in the public domain. The statements have been prepared in accordance with Fiji Accounting Standards, which are derived from, and broadly consistent with, International Accounting Standards (IAS) and more recently International Financial Reporting Standards (IFRS).

### **Publicly Listed Companies**

Of the 16 companies listed on SPSE, 12 have been included in the study, yielding a total of 130 firm years. As illustrated in table 5.1, the firms represent a cross-section of industries; six of them operate in the manufacturing sector, three in communication, two in the automotive sector and one in retailing.

Four listed firms were excluded from the study. They include three finance and insurance companies, which are generally excluded from studies on capital structure (see for example Rajan and Zingales 1995), namely Fijian Holdings Limited (FHL), Fiji Care Insurance Limited (FIL) and the Kontiki Growth Fund Limited (KGF). Such entities are characterised by significantly lower levels of tangible assets because their investments are highly liquid. In addition, insurance firms may be subject to regulations such as minimum capital requirements, which restrict the levels of leverage within which they can operate. Yaqara Group Limited (YGL) has also been excluded because it was established in 2005 and data are only available for three years. In addition, the company has expressed its intention to de-list from SPSE.

The most recent data available for all firms relate to the 2007 financial period. For individual companies, the data generally commence from the year of listing on SPSE. Three of the existing companies were listed in 1979. These are Fiji Sugar Corporation Limited (FSC), Flour Mills of Fiji Limited (FMF) and Toyota Tsusho (South Seas) Limited (TTS). For the first two companies, the data sets commence from 1988. This is because the Fiji dollar was devalued twice in 1987. The devaluation of 33 percent significantly affected the financial performance and position of companies that trade globally. FSC and FMF are both reliant on imported raw materials and the export of finished goods.

Consequently, data prior to 1988 would not be comparable. The data for TTS commence from 1993 since the company experienced a major re-organisation in 1992, in which the non-automotive business was divested. Therefore prior data are expected to lack comparability.

**Table 5.1** Data for Publicly Listed Companies

<b>Code</b>	<b>Industry</b>	<b>Years Included</b>	<b>Number of Years</b>
TTS	Automotive	1993-2007	15
VBL	Automotive (Fleet Management) & Property Management	2001-2007	7
ATH	Communication	2002-2007	6
CFM	Communication	2001-2007	7
FTV	Communication	1997-2007	11
APP	Manufacturing	1999-2007	9
FGP	Manufacturing	1997-2007 <sup>1</sup>	11
FMF	Manufacturing	1988-2007	20
FSC	Manufacturing	1988-2007	20
PGI	Manufacturing	2001-2007	7
RCF	Manufacturing	1998-2007	10
RBG	Retailing	2001-2007	7
			<b>130</b>

### 5.2.2 State-owned Entities

Of the 26 state-owned entities, 11 have been included in the study, yielding a total of 110 firm years. Table 5.2 shows that the selected organisations are

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<sup>1</sup> Carlton Brewery Fiji Limited until 2004. Fosters Group Pacific from 2005.

involved in communication, manufacturing, power generation, property development and transport.

**Table 5.2** Data for State-owned Entities

<b>Code</b>	<b>Status</b>	<b>Industry</b>	<b>Years Included</b>	<b>Number of Years</b>
FBCL	GCC	Communication	1999-2006	8
PFL	GCC	Communication	1997-2006	10
FMIB	CSA	Manufacturing	2000-2006	7
FPL	GCC	Manufacturing	1998-2006	9
FEA	CSA	Power Generation	1988-2007	20
HA	CSA	Property Development	1988-2006	19
AFL	GCC	Transport	2000-2006	7
FPCL	GCC	Transport	1999-2006	8
FPTL	GCC	Transport	2000-2006	7
CAAFI	SA	Transport	2000-2006	7
LTA	SA	Transport	2000-2007	8
				<b>110</b>

**Source** Fiji Ministry of Public Enterprises

All state-owned entities involved primarily in finance have been excluded for reasons outlined above under publicly listed companies. These organisations include Fiji Investment Corporation (FIC), Fiji Islands Revenue and Customs Authority (FIRCA), Fiji National Provident Fund (FNPF) Fiji Public Trustee Corporation Limited (FPTCL) and Unit Trust of Fiji (Management) (UTOFM).

In addition, all state-owned entities involved in agriculture, education and sports have been excluded since none of the publicly listed companies are involved in these industries. Organisations excluded on this basis are Agromarketing Authority of Fiji (AMA), Coconut Industry Development Authority of Fiji (CIDA),

Viti Corp Company Limited (VCL), Yaqara Pastoral Company Limited (YPCL), Fiji Institute of Technology (FIT) and Fiji Sports Council (FSC2). In Fiji, sporting facilities are generally operated by government and non-profit organisations. The same is true of education services, although some private tertiary institutions exist particularly in the information and computing sector. Agriculture is dominated by individual farmers.

Two other state-owned entities were excluded due to insufficient data. Fiji Shipping Limited (FSIL) was established in 2004 and only three years of data are available. Similarly, only four years of data are available for Fiji Ships and Heavy Industries Limited (FSHL).

#### Preliminary Tests of the Regression Model

Although data were available for Public Rental Board (PRB) and Rewa Rice Limited (RRL), they were excluded from the regression model because they have negative equity. Consequently, their leverage rates fall outside three standard deviations of the mean. Their inclusion in the sample would significantly distort results.

### **5.3 Correlation Matrix**

The discussion in chapter two identified multiple proxies for several determinants of capital structure. They are listed in table 5.3.

Two correlation matrices were extracted to determine which proxies to use in the regression model. Appendix 16 displays the results for total leverage while those for long-term leverage appear in appendix 17. The findings are highly consistent with each other.

Past profitability, tangibility and firm type all demonstrate a significant correlation with both measures of leverage, at the 1 percent level. In addition, the signs associated with these variables are consistent between the two matrices; tangibility and past profitability are inversely related to leverage while firm type displays a positive relationship.

In relation to firm size, total assets demonstrate a significant correlation with both measures of leverage while revenue does not. Total assets are positively

related to both total and long-term leverage while the results for revenue are conflicting. Revenue is positively related to total leverage, but negatively related to long-term leverage. The value of the coefficients also indicates that revenue is a weaker predictor than total assets. Therefore total assets will be used as a proxy for firm size in the regression model.

**Table 5.3** Determinants of Capital Structure and Alternative Proxies

Determinant	Proxy 1	Proxy 2
Firm Size	Total Assets*	Total Sales Revenue
Current Profitability	Return on Assets*	Operating Margin
Past Profitability	Retained Earnings*	
Tangibility	PP&E/Total Assets*	
Growth	Growth in Assets*	Growth in Sales*
Tax	Effective Tax Rate	Depreciation Tax Shield*

Source Chapter 2

\* indicates proxy to be used in the regression model

To explain the inverse relationship between revenue and long-term leverage, it is important to understand that the behaviour of each variable differs fundamentally in the short-term. For instance, firm revenue may fall rapidly in response to external shocks generated by reduced consumer income and higher commodity prices. On the contrary, it is relatively difficult for firms to reduce long-term debt in the short-term, particularly if revenue is a proxy for cash inflows. This is relevant in the context of Fiji where political turbulence over the past two decades has contributed to several economic recessions. Lower economic growth and more expensive imports contribute to reduced firm revenue and cash flows from operations. As a result, firms are likely to find difficulty in servicing long-term debt. Firms are better positioned to reduce their long-term leverage when revenue increases through improved economic conditions.

For current profitability, return on assets is a stronger predictor of leverage than the operating margin. The latter is not significantly correlated with either

measure of firm leverage. Based on these results, return on assets will be used to measure profitability in the regression model. Appendices 16 and 17 show that the two proxies yield conflicting signs. Of the two, return on assets is more significant and carries a negative coefficient. This provides greater support for the pecking order theory because it indicates that more profitable firms borrow less.

Since the depreciation shield is a significant predictor of leverage, while the effective tax rate is not, the former will be used to represent the effect of tax in the regression model. The absence of any significant relationship between tax rates and leverage may appear surprising. However, it could be attributable to distortions generated by tax exemptions. More specifically, firms in the sample operate under various tax incentives. Among the publicly listed companies, Fiji Television Limited (FTV) and Pacific Green (PGI) have benefited from temporary tax holidays while all the other firms are subject to income tax. Among the state-owned entities, Housing Authority is permanently exempt from income tax and FEA was exempt until 1999.

The coefficient of the effective tax rate carries the same sign as the coefficient for profitability. This is consistent with observations by Booth et al (2001) that tax rates may serve as a proxy for profitability.

Neither asset growth nor sales growth demonstrates a significant correlation with leverage. In addition, asset growth is positively correlated with leverage while sales growth demonstrates an inverse relationship. Since the results are inconclusive, both proxies will be used in the regression model.

The sign on sales growth suggests that growth firms borrow less, while the sign on asset growth implies they borrow more. While these findings appear contradictory, there are logical explanations for the paradox. Assuming that asset growth implies capital expenditure, the positive relationship can be explained using the pecking order theory, since firms will require more debt financing once they have exhausted their retained earnings. Assuming that sales growth is a proxy for cash inflows, it can also be argued that growing firms will be able to reduce debt faster. This provides logical support for an inverse relationship between sales growth and leverage.

## 5.4 Descriptive Statistics

This section summarises and analyses descriptive statistics for sample data. A comprehensive set of descriptive statistics is tabulated in appendix 18.

### 5.4.1 Mean

Table 5.4 summarises means for the variables that will be used in the regression model.

**Table 5.4** Mean of Dependent and Independent Variables

Type	TL	LTL	TA	ROA	Ret. Earn	Tang	Dep'n Shield
	%	%	\$000	%	\$000	%	%
PLC	38.83	14.14	75,641	15.32	8,974	50.06	5.44
SOE	48.23	36.51	135,895	10.52	7,987	58.02	4.20
Total	43.16	24.45	103,393	13.10	8,519	53.73	4.86

PLC=Publicly Listed Companies, SOE=State-owned Entities

TL=Total Leverage, LTL=Long-term Leverage, TA=Total Assets, ROA=Return on Assets, Ret.Earn=Retained Earnings, Tang=Tangibility, Dep'n Shield=Depreciation Tax Shield

In general, firms in the sample rely more on equity financing, since average rates for total and long-term leverage are less than 50 percent. Table 5.4 shows that this reliance is more pronounced for publicly listed companies. State-owned entities are more highly levered than listed companies in terms of total and long-term debt.

Leverage rates for publicly listed companies are comparable to those in other developing countries. An international study found that total leverage ranged from 30.3 percent in Brazil to 73.4 percent in South Korea (Booth et al. 2001). At 38.8 percent, the average for Fiji companies is closest to Mexico (34.7 percent), Zimbabwe (41.5 percent) and Malaysia (41.8 percent). It also compares favourably with leverage of 36.2 percent reported among firms in Mauritius (Manos and Ah-Hen 2003). Booth et al. (2001) reported long term leverage ranging from 9.7 percent in Brazil to 49.4 percent in South Korea.

Again the average for Fiji companies (14.1 percent) is closest to Mexico (13.8 percent), Malaysia (13.1 percent) and Zimbabwe (13.0 percent). Based on the classification used by Booth et al. (2001), Fiji would be classified as a low-debt country.

Publicly listed companies are more profitable than state-owned entities and consequently carry greater balances of retained earnings. However state-owned entities are larger, in terms of their total asset base, and carry a higher proportion of plant, property and equipment. Greater investment in tangible assets combined with lower levels of retained profits could partly explain why state-owned entities are forced to borrow more.

Despite having a greater proportion of tangible assets, state-owned entities report marginally lower depreciation shields. This could be explained in several ways. Some state-owned entities like FEA own infrastructure assets with long useful lives and low annual depreciation. It is also possible that state-owned entities replace assets later and adopt less aggressive depreciation policies than publicly listed companies.

#### 5.4.2 Range

Table 5.5 summarises ranges for variables included in the regression model. In total, most variables demonstrate a considerable range except depreciation tax shields which display little variation.

**Table 5.5** Range for Dependent and Independent Variables

Type	TL	LTL	TA	ROA	Ret. Earn	Tang	Dep'n Shield
	%	%	\$000	%	\$000	%	%
PLC	66	64	422,089	77	137,938	96	14
SOE	99	105	668,170	85	216,467	94	13
Total	99	105	668,170	99	216,467	96	14

PLC=Publicly Listed Companies, SOE=State-owned Entities

TL=Total Leverage, LTL=Long-term Leverage, TA=Total Assets, ROA=Return on Assets, Ret.Earn=Retained Earnings, Tang=Tangibility, Dep'n Shield=Depreciation Tax Shield

State-owned entities display greater variation across all variables except tangibility and depreciation shields, where publicly listed companies report marginally higher ranges. The maximum and minimum values reported by state-owned entities for each variable in table 5.5 are discussed next.

The maximum value for both total and long-term leverage was 105 percent recorded by FEA in 1988. FEA employed high levels of leverage throughout the 1980s, reflecting heavy borrowings to finance the Monasavu Hydro-electric Scheme. The lowest value for total leverage was 6 percent reported by Fiji Ports Corporation Limited (FPCL) in 2002. However FPCL subsequently increased leverage to 46 percent by 2006. In relation to long term leverage, the minimum values were recorded by the Civil Aviation Authority of the Fiji Islands (CAAFI) which reported zero long-term debt from 2002 to 2006.

FEA also recorded the maximum value for total assets. In 2007 FEA reported total assets of \$668 million. This reflects the capital-intensive nature of FEA's operations and its recent capital expenditure programmes described in chapter four. Consistent with its investment in infrastructural assets, FEA reported the highest value for tangibility at 96 percent. The lowest level of total assets is attributed to Food Processors Limited (FPL) in 1998, when it had an asset base of \$923,000. FPL has remained the smallest of all the firms in the sample.

The maximum return on assets of 62 percent was recorded by the Land Transport Authority (LTA) in 2002 while the minimum value was reported by CAAFI. LTA is the most profitable state-owned entity with consistent returns in excess of 41 percent. This is not surprising since it has a monopoly over road registration and licensing. CAAFI recorded a loss of 23 percent in 2000 following a re-organisation exercise. Returns have since stabilised around 8 percent.

FEA reported both the highest and lowest value for retained earnings. Retained profits peaked at \$131.3 million in 2003 before three successive losses from 2004 to 2006. As discussed in chapter four, FEA has never paid a dividend. Consequently its balance of retained profits rises in every year of profitable operations, barring transfers to reserves. FEA recorded the minimum value for retained profits in 1988, following the reduced profitability caused by political

unrest and related currency devaluations in 1987. In 1988 FEA reported accumulated losses of \$85.1 million.

With regard to tangibility, publicly listed companies display a higher variation than state-owned entities. This can be attributed to Rice Company of Fiji Limited (RCF) and VB Holdings Limited (VBL). RCF reported tangibility of zero percent from 2000 to 2007 since it has no plant, property and equipment. The company acquires all facilities under operating leases. At the other extreme, VBL reported tangibility of 96 percent reflecting its involvement in property development.

### 5.4.3 Standard Deviation

Table 5.6 presents the standard deviation for variables used in the regression model. At 14.1 percent, total leverage among listed companies displays slightly less variation than a study in Mauritius which reported 19.0 percent (Manos and Ah-Hen 2003). All variables demonstrate considerable variation except for depreciation shields where little variation is evident. This is consistent with listed companies in Mauritius which recorded a standard deviation of 2.6 percent (Manos and Ah-Hen 2003).

**Table 5.6** Standard Deviation for Dependent and Independent Variables

Type	TL	LTL	TA	ROA	Ret. Earn	Tang	Dep'n Shield
	%	%	\$000	%	\$000	%	%
PLC	14.11	15.83	104,662	9.88	19,072	20.22	3.09
SOE	27.49	33.08	175,952	13.43	42,641	29.94	2.87
Total	21.81	27.59	144,856	11.88	32,080	25.43	3.05

PLC=Publicly Listed Companies, SOE=State-owned Entities

TL=Total Leverage, LTL=Long-term Leverage, TA=Total Assets, ROA=Return on Assets, Ret.Earn=Retained Earnings, Tang=Tangibility, Dep'n Shield=Depreciation Tax Shield

Consistent with statistics for the range, state-owned entities display greater variation across most variables. The only exception is the depreciation shield, for which the difference between state-owned entities and publicly listed

companies appears negligible. This is consistent with the marginal difference in range between the two groups.

Publicly listed companies report a lower standard deviation for tangibility. This indicates that the higher range for tangibility reported by publicly listed companies is caused by specific firms but is not generally representative of listed firms in the sample.

## 5.5 Model Specification

The following model is employed to investigate the various practices and impact of leverage management.

$$L = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \beta_5x_5 + \beta_6x_6 + \beta_7x_7 + \varepsilon_t$$

where

$L$  represents leverage

$x_1$  represents size of the organisation

$x_2$  represents current profitability

$x_3$  represents past profitability

$x_4$  represents tangibility of assets

$x_5$  represents tax shields

$x_6$  represents growth

$x_7$  is a dummy variable that represents the type of organisation

$\varepsilon_t$  is the regression error term

## 5.6 Regression Model 1

In the first instance, the model was run with total leverage as the dependent variable. Total leverage is calculated from total liabilities divided by the sum of total liabilities and total equity. Hypothesized signs are based on previous studies documented in chapter two and the correlation matrix in appendix 16.

### 5.6.1 Collinearity

Several procedures were conducted to test for collinearity. Variance Inflation Factors (VIF) range from 1.123 to 2.136. The highest condition index is 6.834, which is well within acceptable levels. The lowest eigen value is 0.080.

### 5.6.2 Regression Statistics

Output from the regression model is summarised in table 5.7

**Table 5.7** OLS Regression Results (Leverage is the dependent variable)

Predictor	Hypothesised Sign	Coefficient	t-statistic	Significance	
Constant		0.545	17.704	0.000	
TA	+	0.674	9.125	0.000	
ROA	-	(0.111)	(2.016)	0.045	
RE	-	(0.531)	(7.563)	0.000	
Tang	-	(0.392)	(7.057)	0.000	
Tax Shield	+	0.100	1.489	0.138	
Growth	+ or -	0.082	(1.624)	0.106	
Type	+	0.109	2.035	0.043	
Model R <sup>2</sup> = 46.4 percent, Adjusted R <sup>2</sup> = 45.2 percent					
<b>Analysis of Variance</b>					
Source	DF	SS	MS	F	p-value
Regression	5	4.635	0.927	36.414	0.000
Residual Value	210	5.346	0.025		
Total	215	9.981			

where

TA	Is the value of Total Assets
ROA	is the ratio of EBITDA to Total Assets
RE	Is the value of Retained Earnings
Tang	Is the ratio of Plant, Property & Equipment to Total Assets
Tax Shield	Is the ratio of Depreciation to Total Assets
Growth	is the annual Growth Rate in Total Sales
Type	Indicates whether the Organisation is Publicly Listed (0) or State-Owned (1)

The regression model has an R<sup>2</sup> of 0.464, indicating that the independent variables are able to explain 46.4 percent of the variation in total leverage.

Firm type, size, past and present profitability and tangibility are all significant predictors of total leverage at the 5 percent level. However growth and depreciation tax shields are not significant predictors of total leverage.

### **5.6.3 Size**

Total assets is positively correlated with leverage, indicating that larger organisations borrow relatively more than smaller ones. This is consistent with expectations based on previous studies by Homaifar et al. (1994), Rajan and Zingales (1995), Krishnan and Moyer (1996), Al-Sakran (2001), Booth et al. (2001), Manos and Ah-Hen (2003), Panno (2003), Voulgaris et al. (2004) and Gaud et al. (2005). The results can be explained by the static trade-off theory in the sense that large firms are generally able to reduce their risk through diversification. Consequently, lenders are more willing to finance larger firms. The results are also consistent with the political cost hypothesis; larger firms are able to borrow more since they are more visible and subject to greater monitoring than smaller firms.

### **5.6.4 Profitability**

Return on assets displays an inverse correlation with leverage. The sign is consistent with the pecking order theory whereby more profitable firms borrow less. This is consistent with previous studies by Rajan and Zingales (1995), Krishnan and Moyer (1996), Graham (2000), Al-Sakran (2001), Booth et al. (2001), Dessi and Robertson (2003), Manos and Ah-Hen (2003), Voulgaris et al. (2004) and Gaud et al. (2005).

As expected, organisations which have accumulated higher levels of retained profits display a lower propensity to borrow. This is also consistent with the pecking order theory, which asserts that an organisation prefers to use internal funds rather than external finance. In this respect, the results are consistent with the findings of Panno (2003), who used available reserves as a proxy for past profitability. Retained earnings is a stronger predictor than return on assets, indicating that past profitability is a stronger predictor of leverage than current profitability among the firms in the sample.

The results do not support the static trade-off theory, which predicts a positive relationship between profitability and leverage.

### **5.6.5 Tangible Assets**

Leverage decreases significantly with higher values of tangible assets. This is consistent with findings in other developing countries (Booth et al. 2001; Manos and Ah-Hen 2003) but inconsistent with the static trade-off theory. Under the static trade-off theory, firms with relatively more tangible assets have greater collateral which implies lower risk and greater capacity to borrow.

In explaining the inverse relationship between tangible assets and leverage, Manos and Ah-hen (2003) suggest that firms with more tangible assets have less need to seek debt for its control function.

In the Fiji context, there is another possible explanation. Several of the larger firms in the sample undertook asset revaluations during the review period. These include listed companies such as ATH and FSC as well as state-owned entities like FEA. Revaluations substantially increase the value of tangible assets without requiring additional finance. As such, the asset base increases while leverage decreases through debt repayments.

### **5.6.6 Tax**

The model shows a small and insignificant positive relationship between non-debt shields and leverage. The sign is consistent with the findings of Manos and Ah-Hen (2003) in Mauritius. Since depreciation tax shields increase with leverage, depreciation shields do not appear to be a substitute for interest tax shields.

### **5.6.7 Growth Rate**

Leverage displays a small and insignificant relationship with sales growth. The sign on sales growth indicates that growth firms borrow less. This is consistent with studies by Rajan and Zingales (1995), Graham (2000), Al-Sakran (2001) and Gaud et al. (2005).

A possible explanation is that growth in sales revenue generates additional cash inflows which enable the entity to repay existing debt and decrease its need for new debt.

#### **5.6.8 Type of Organisation**

The type of organisation is found to have a positive impact on leverage, such that state-owned entities generally carry higher levels of debt. This is consistent with expectations, since state-owned entities are able to borrow on the basis of government guarantees, which increases their capacity to borrow and enables them to secure more attractive interest rates due to zero risk of default. Several state-owned entities also receive capital grants from government.

These results are consistent with the static trade-off theory insofar as firms with less risk are expected to borrow more.

### **5.7 Regression Model 2 (Long-Term Leverage)**

The model was also run using long-term leverage as the dependent variable. Long-term leverage is calculated from total long-term debt divided by the sum of total long-term debt and total equity.

#### **5.7.1 Regression Statistics**

This model has an  $R^2$  of 0.517, indicating that the independent variables are able to explain 51.7 percent of the variation in long-term leverage.

The improved fit of this model can be attributed to the stricter definition of debt employed. Long-term debt is restricted to bonds, financing leases, government grants and loans. In contrast, the first model used a broader definition of debt where total liabilities also included accruals, provisions and trade credit which do not strictly represent financing decisions. The more restrictive definition used in the second model may be expected to more accurately capture the impact of each variable on leverage.

All coefficients retain the same signs as in the first model. In addition the same variables which were significant in the first model are also significant in the second model.

**Table 5.8** OLS Regression Results (Long-term Leverage is the dependent variable)

Predictor	Hypothesised Sign	Coefficient	t-statistic	Significance	
Constant		0.319	8.554	0.000	
TA	+	0.618	8.817	0.000	
ROA	-	(0.157)	(2.994)	0.003	
RE	-	(0.446)	(6.693)	0.000	
Tang	-	(0.326)	(6.165)	0.000	
Tax Shield	-	0.098	1.538	0.125	
Growth	+ or -	0.079	1.640	0.103	
Type	+	0.295	5.795	0.000	
Model R <sup>2</sup> = 51.7 percent, Adjusted R <sup>2</sup> = 50.5 percent					
<b>Analysis of Variance</b>					
Source	DF	SS	MS	F	p-value
Regression	5	8.396	1.679	44.946	0.000
Residual Value	210	7.846	0.037		
Total	215	16.242			

where

<b>TA</b>	Is the value of Total Assets
<b>ROA</b>	is the ratio of EBITDA to Total Assets
<b>RE</b>	Is the value of Retained Earnings
<b>Tang</b>	Is the ratio of Property, Plant & Equipment to Total Assets
<b>Tax Shield</b>	Is the ratio of Depreciation to Total Assets
<b>Growth</b>	is the annual Growth Rate in Total Assets
<b>Type</b>	Indicates whether the Organisation is Publicly Listed (0) or State-Owned (1)

### 5.7.2 Size

In comparison to the regression model for total leverage, the size variable retains its significance while its strength is marginally lower. As expected, total assets is positively correlated with long-term leverage, confirming that larger organisations are able to acquire more debt financing. This can be attributed to greater risk diversification through their broader customer bases, multiple suppliers and wider range of investments. The risk associated with larger firms is further reduced by their visibility and the greater availability of information about them through corporate websites and press releases.

### **5.7.3 Profitability**

Current profitability has a greater impact on long-term leverage than on total leverage. The inverse relationship is consistent with the pecking order theory since more profitable firms have less need to acquire new debt. Higher cash flows from operations provide a greater buffer to finance capital expenditure.

The findings are also consistent with previous studies by Rajan and Zingales (1995), Krishnan and Moyer (1996), Graham (2000), Al-Sakran (2001), Booth et al. (2001), Dessi and Robertson (2003), Manos and Ah-Hen (2003), Voulgaris et al. (2004) and Gaud et al. (2005).

Consistent with the pecking order theory, a significant inverse relationship is also evident between retained profits and long-term leverage. Firms prefer to use internally generated funds since they can be accessed quickly and without the costs associated with raising new capital. The strength of past profitability as a predictor of leverage is marginally lower for long-term leverage.

### **5.7.4 Tangible Assets**

Organisations with a relatively higher proportion of non-current assets report lower levels of long-term leverage. This is consistent with the findings for total leverage. The strength of tangible assets as a predictor of leverage is marginally lower for long-term leverage. The findings may indicate that tangible assets are easier to monitor and consequently reduce the motivation to acquire debt for its control purposes.

### **5.7.5 Tax**

The relationship between long-term leverage and non-debt shields is positive but insignificant. The sign indicates that non-debt shields are not a substitute for interest tax shields.

### **5.7.6 Growth**

When growth is measured through the annual increase in total assets, it demonstrates a positive relationship with long-term leverage. However the correlation falls just outside the 10 percent level of significance. The sign is

consistent with previous studies by Krishnan and Moyer (1996), Dessi and Robertson (2003), Manos and Ah-Hen (2003) and Voulgaris et al. (2004).

The sign on asset growth indicates that growth firms borrow more. This can be explained using the pecking order theory. Asset growth implies capital expenditure, for which firms will employ debt financing once they have exhausted their retained earnings. Since capital expenditure is financed through long-term debt, the relationship between asset growth and leverage may be more evident in the long-term model where short-term financing is excluded

#### **5.7.7 Type of Organisation**

Consistent with the first model, the type of organisation displays a significant positive relationship with long-term leverage. State-owned entities generally borrow more than publicly listed companies. In particular, firm type is able to explain 17.2 percent of the total variation in long-term leverage. In addition, the type variable displays a larger coefficient in the long-term model. This indicates that firm type is a stronger predictor of long-term leverage although it is also a predictor of total leverage.

#### **5.7.8 Tests of Robustness**

Two additional regressions were conducted to test the robustness of the model.

First the model was tested for the effect of FEA. The analysis of descriptive statistics identified that several of the maximum and minimum values for state-owned entities were attributable to FEA, which is also the largest firm in that group. When FEA is excluded from the model, all explanatory variables retain their signs and significance.  $R^2$  reduces to 46.4 percent for long-term leverage. Firm type explains 9.0 percent of the overall variation in long-term leverage.

Second the model was tested for the effect of uneven observations from each firm in the sample. In this regression, seven years of data were used for each firm, except for ATH where data were only available for six years. For listed companies data covered the period from 2001 to 2007. For state-owned entities, data generally covered the period from 2000 to 2006. Again, all explanatory variables retain their signs and significance. This regression has an

$R^2$  of 29.4 percent for long-term leverage. Firm type explains 3.6 percent of the overall variation in long-term leverage.

## **5.8 Summary**

The main findings from this chapter are now summarised.

First, five variables are significant predictors of both total and long-term leverage. They include firm type, size, past and present profitability and tangibility. Together these variables were able to explain 51.7 percent of the variation in long-term leverage and 46.4 percent of the variation in total leverage.

Second, four of the significant variables were identified from the literature review. This indicates that the same variables which determine capital structure in developed countries and other developing nations are also useful in explaining the capital structure of firms in Fiji.

Third, total assets are a stronger predictor of leverage compared to revenue. In addition, total assets are a more reliable proxy for firm size. This may be related to the fact that total assets are relatively stable and difficult to change in the short-term while revenue is more likely to fluctuate in response to economic conditions. In addition, all assets require finance especially non-current assets. Therefore assets are more likely to impact capital structure.

Fourth, both current and past profitability are inversely related to leverage. This demonstrates support for the pecking order theory. On the contrary, the static trade-off theory is not supported. In summary, more profitable firms borrow less.

Fifth, the evidence in relation to tangibility of assets is counter to that of many previous studies. Firms with a higher proportion of tangible assets demonstrate a lower propensity to borrow. This is consistent with the view that firms with relatively more plant, property and equipment are less inclined to seek debt for control purposes. These findings are also consistent with studies in other developing countries and imply that tangibility may affect leverage differently in developing countries.

Sixth, leverage is positively related to depreciation tax shields. As such, depreciation tax shields do not appear to be a substitute for interest tax shields since firms with more depreciation display a tendency to borrow more. Preliminary observations are consistent with the view that the effective tax rate may be used as a proxy for profitability.

Finally, the type of organisation is observed to be a strong predictor of firm leverage with state-owned entities recording significantly higher rates than listed companies. In summary, the leverage of state-owned entities is significantly different from that of listed companies. These findings contradict an earlier study in China (Chen and Strange 2005) which found that state-owned entities borrow less due to supposed risk aversion on the part of government shareholders. The contradictory findings may reflect institutional differences. In Fiji, risk is reduced by government guarantees particularly in the context of commercial statutory authorities. Furthermore government commercial companies generally have a majority of independent board members who may be more disposed to taking informed risks than government officials.

The findings are consistent with results from a Vietnamese study of small and medium enterprises (Nguyen and Ramachandran 2006). However the present study is more reliable in the sense that data have been extracted from audited financials statements prepared in accordance with international accounting standards. In addition, the present study demonstrates that state-owned entities are still inclined to employ higher leverage even when they must borrow from commercial trading banks rather than state-owned banks.

## **CHAPTER SIX**

## **CONCLUSION**

Based on the analysis and discussion in previous chapters, this chapter will consolidate findings, outline recommendations, discuss limitations and highlight the broader implications of the study.

## **6.1 Findings**

### **6.1.1 General Objective**

The general objective of the study was to determine and compare the factors which impact upon the capital structure of large organisations throughout Fiji, including publicly listed companies and state-owned entities.

In this respect, the regression analysis confirms that many of the factors which determine capital structure in other countries also apply to firms in Fiji. Consistent with previous studies firm size, past and present profitability and asset tangibility were all found to be significant predictors of total and long term leverage. Leverage is positively correlated with firm size and inversely correlated with tangibility and past and present profitability.

In addition, the results show that state-ownership is a significant and positive predictor of leverage with firm type explaining 17.2 percent of the variation in long-term leverage among firms in the sample.

Contrary to studies in other jurisdictions, tax is not a significant predictor of leverage among firms in Fiji. This finding may be related to how the tax variable was measured in the present study. Depreciation shields have been based on accounting depreciation because tax depreciation is not disclosed in financial statements. In Fiji, depreciation rates for tax purposes are generally higher than those used for accounting reports so it is possible that accounting depreciation fails to capture the true relationship with leverage. The relationship between tax and leverage may also be distorted by the tax exemptions and holidays enjoyed by certain firms in the sample such as FEA, Fiji Television Limited, Housing Authority and Pacific Green.

### **6.1.2 Specific Objectives**

The present study addressed several specific objectives.

#### 6.1.2.1 Levels of Leverage Among Selected Entities in Fiji

In general, firms in Fiji prefer equity to debt. Average long-term leverage is 24.5 percent and average total leverage is 43.2 percent, indicating that firms employ more equity in their capital structure. Applying the categories used by Booth et al. (2001), Fiji is classified as a country with low levels of debt.

Larger firms employ higher leverage than smaller ones. This is evident from the regression analysis in chapter five as well as detailed analysis of selected entities in chapter four. These findings are consistent with the view that large organisations can diversify their risk more successfully than small ones. Therefore, lenders are more willing to lend to large firms. The results are also in accordance with the political cost hypothesis that larger firms are better able to attract finance since they are more visible and subject to greater monitoring.

In addition, the debt levels for each organisation demonstrate wide variations over time. This finding does not support the existence of a well-defined target debt ratio as predicted by the static trade-off theory. In explaining the wide variations, the detailed analysis of selected firms in chapter four highlighted the impact of uncontrollable external shocks such as natural disasters, increasing input prices and political turbulence.

#### 6.1.2.2 Composition of Capital Structure

Equity financing is generally represented by retained profits rather than the issue of new shares. The analysis in chapters three and four shows that firms rarely issue additional equity. These findings are consistent with the pecking order theory which asserts that firms prefer internal funding to external funding.

Only the smallest firms on the South Pacific Stock Exchange (SPSE) have issued additional equity since they were listed. However such issues have been restricted to directors, employees and existing shareholders.

The most prevalent form of debt financing among firms in Fiji is bank loans. The only organisations that issue bonds are statutory bodies, with the exception of Fijian Holdings Limited which issued corporate bonds once in 2002. Other

common types of debt financing include financing leases and government grants.

A firm's financing options can change over time as indicated by the analysis of selected firms in chapter four. The main considerations behind these changes appear to be the cost of capital and strategic business alliances. In relation to the former, FEA virtually eliminated loans and used bond financing to reduce its weighted average cost of capital below the commercial bank lending rate. In relation to the latter, Air Pacific now leases all its aircraft from Qantas and the Boeing Corporation. The strategic importance of these two stakeholders is underscored by the fact that Qantas is the second-largest shareholder while Boeing is the sole supplier of aircraft to Air Pacific.

#### 6.1.2.3 Relationship Between Leverage and Profitability

The regression model shows that leverage is significantly and negatively related to both current and past profitability. This indicates that firms which generate and accumulate profits are less inclined to borrow. These results provide comprehensive support for the pecking order theory.

However the results are contrary to expectations based on the static trade-off theory, which implies a positive relationship between profitability and leverage. Static trade-off theory predicts that more profitable firms will assume greater debt in order to off-set profits through interest tax shields.

#### 6.1.2.4 Capital Structure of State-Owned Entities and Publicly Listed Companies

The study concludes that state-owned entities borrow significantly more than publicly listed companies. The higher propensity to borrow can be explained by several differences between state-owned entities and publicly listed companies. First state-owned entities carry higher levels of non-current assets which must be financed through debt or equity. Second state-owned entities are demonstrably less profitable and carry lower levels of retained profits. This conundrum leads them to acquire debt, in line with the pecking order theory which asserts that firms only issue additional equity as a last resort. Third, some state-owned entities such as FEA and Housing Authority are able to issue

bonds under government guarantee. This discounts the cost of debt finance and makes their debt instruments more attractive to prospective lenders.

In explaining why state-owned entities are less profitable, it is pertinent to consider that some of them are required to fulfill social obligations as well as commercial ones. Examples were discussed in chapter four; FEA provides subsidised electricity to rural areas while Post Fiji Limited provides similar subsidies for postal services. The cost of fulfilling social objectives negatively impacts their profit margins.

## **6.2 Recommendations**

The findings of this study will be useful for various individuals and organisations in Fiji.

### **6.2.1 Government-Supported Borrowing**

The analysis in chapter four illustrated how government supports several entities through guarantees and soft loans. This support enables the entities concerned to acquire more debt at considerably lower interest rates than they could negotiate themselves. It may be prudent for government to withdraw such privileges in order to reduce its budget deficit and instill greater financial discipline among the entities concerned. Facing more competitive interest rates may force such entities to reduce capital expenditure by prioritising projects with higher expected returns.

Government continues to provide and facilitate loans for unprofitable businesses such as FSC. This may encourage a dependency mentality if entities assume that government will always rescue them when they are in financial distress. From a commercial perspective, government may need to withhold such support so that entities are forced to make strategic and operating decisions based on efficiency and commercial viability.

On the other hand, government has social obligations and is subject to political pressure from various quarters and lobby groups such as trade unions. As such, it must demonstrate strong political will if it is serious about public sector reforms.

## **6.2.2 Asset Bases of State-Owned Entities**

The regression analysis in chapter five confirms that an entity can reduce leverage by decreasing its asset base and becoming more profitable. State-owned entities generally carry much higher levels of assets than publicly listed companies. In some cases, this reflects the capital-intensive nature of their businesses. Nevertheless, higher asset bases contribute to lower returns on assets if asset usage is not optimised.

In addition to making commercial decisions about financing, state-owned entities must also be encouraged to utilise their assets more efficiently and divest those which are not productive. To improve efficiency, state-owned entities can consider adopting more aggressive marketing techniques to improve asset turnover ratios. Public private partnerships may be particularly helpful in this context since private sector input may contribute to effective marketing and improved service delivery.

These recommendations are particularly relevant for state-owned entities earmarked for corporatisation, including the departments of: Government Supplies; and Water and Sewerage.

## **6.2.3 Capital Markets and Financial Institutions**

The lack of trading on the South Pacific Stock Exchange (SPSE) reflects the under-development of capital markets in Fiji. In particular, no new listings have occurred since the Yaqara Growth Fund listed in 2005. In the primary market, issues of equity tend to be restricted to existing shareholders. In the secondary market, the frequency and volume of trading is low.

Loans remain the most popular form of debt financing. This may reflect the lower costs, faster turn-around time and relative ease of negotiating loans when compared to bonds and debentures. It also indicates that capital markets in Fiji are relatively unsophisticated and traditional financing instruments are preferred.

In light of these findings, it is essential for the Capital Markets Development Authority (CMDA) and SPSE to review the viability of the stock exchange and

consider innovative ways to encourage the issue and trading of shares. This may prove difficult with the smaller listed firms since their reasons for listing appear unrelated to raising equity from the general public. Another issue worthy of consideration is the listing of state-owned entities. In this regard, CMDA and SPSE may encourage government to divest some of its shares in the more profitable state-owned entities such as Post Fiji Limited (PFL). This can be facilitated through initial public offerings as in the case of Amalgamated Telecommunications Holding Limited.

### **6.3 Limitations of the Study**

#### **6.3.1 Small Number of Firms**

Only 16 companies are listed on SPSE and many of them have been in operation for less than ten years. This places considerable restrictions on the data set, particularly when compared to studies in larger countries. Appendices 1 to 5 show that previous studies on capital structure have generally used upwards of 100 firms. However, the present study compares more favourably with published studies in Saudi Arabia (Al-Sakran 2001) and Mauritius (Manos and Ah-Hen 2003) which are characterized by a smaller number of firms.

Given the small number of listed companies in Fiji, it has been possible to use virtually the entire population of companies, although finance companies were excluded due to the peculiarly high leverage and relatively low tangibility associated with that industry.

Among state-owned entities, there are similar limitations. Many of them have been in operation for less than 10 years although the larger ones have been established for considerably longer. Due to delays in finalizing their financial statements, data for 2007 were not available for several state-owned entities. Unfortunately, Public Rental Board had to be excluded due to its abnormally high levels of gearing, caused by negative equity. This eliminated 17 data years.

Since each financial year yields around 25 new sets of data, future studies in three or four years time will benefit from considerably richer data sets.

Nevertheless, the present study provides a useful baseline for future studies in the area.

### **6.3.2 Under-Developed Capital Markets**

Many studies on capital structure have utilised market values for equity, which are generally based on market capitalisation. This has not been possible in the present study, for two reasons. First, state-owned entities are not listed and therefore do not have quoted share prices. Second, trading on SPSE is relatively infrequent and share prices may not accurately reflect the value of shares. For example, a single transaction can drive the share price up or down substantially. As such, market values may be less reliable than book values.

### **6.3.3 Omitted Variables**

While the regression model is able to explain more than half of the variation in leverage, it also indicates that there are other determinants of capital structure, which have not been identified in the current study. This represents an interesting opportunity for further research. Future studies may consider how leverage is affected by other variables such as firm age, governance structures and shareholder diversification.

## **6.4 Conclusions**

In contributing to the body of knowledge on financial leverage, the present study provides empirical evidence to demonstrate that financial concepts are generally applicable, relevant and transferable to small island states.

It also highlights some of the differences between state-owned entities and publicly listed companies which have motivated public enterprise reforms.

### **6.4.1 State of Public Enterprise Reform in Fiji**

Compared to state-owned entities, the study finds that publicly listed companies are more profitable, less leveraged and carry a lower proportion of non-current assets. These represent some of the benefits which can be realised through privatisation.

Despite these benefits, there has been limited progress towards divestment during the review period. For example, PFL was established as a company in 1996 following corporatisation of postal and telecommunication services in 1990. Despite nine years of profitable operations, government still retains full ownership and has not divested any of its shares. Other profitable government commercial companies include Airports Fiji Limited (AFL) and Food Processors Limited (FPL), which have each recorded over seven successive years of profitable operations.

Three reasons may explain government's reluctance to divest ownership. The first relates to social obligations, as in the case of PFL. Government may fear that a private company would be less willing to provide postal services to rural areas. However, this issue can be overcome by retaining majority shareholding or preferably through explicit contracts and continued price regulation, given that postal services represent a natural monopoly.

The second reason may relate to national importance and security, as in the case of AFL which operates both international airports. However, safety standards are already monitored by an independent regulator (Civil Aviation Authority of Fiji Islands) and many airport services are provided by private operators. These include catering, cleaning and air traffic control. Hence there appears to be a precedent for divestment of the airport assets.

The third reason could be that profitable state-owned entities generate dividend streams which contribute towards government revenue. For example PFL has consistently recorded profits and remits 50 percent annually as a dividend to government. Given that government continues to operate on budget deficits, this may be the most practical reason for delaying divestment. However this may perpetuate a situation where the more profitable state-owned entities subsidise the less profitable ones. While this practice may help balance the books for government, it continues to hide the losses and low profits generated by some state-owned entities. Furthermore, government could still retain a dividend stream even if it divested part of its shares in profitable companies as it did with Air Pacific.

Notwithstanding the above, the former government announced its intention to divest AFL and nine other government commercial companies by 2011. However it is difficult to assess this objective against outcomes given the military coup of December 2006. Interestingly, PFL was not one of the firms earmarked for divestment.

#### **6.4.2 Broader Relevance of the Study**

The results conflict with a previous study in China which reported an inverse correlation between state-ownership and leverage. This contradiction may be explained by different political systems and governance structures.

For example, it has been suggested that state-owned entities in China may be restrained from borrowing because the state effectively controls their boards and actively intervenes in their business operations. In line with the prevailing system of government in China, the state may fear that higher leverage will reduce its control of state-owned entities.

In contrast, most board members of state-owned entities in Fiji were independent appointees at the time of the present study. Board independence reduces the scope for government interference and enables firms to make business decisions based on commercial objectives.

A previous study in Vietnam attributed higher leverage among state-owned entities to the preferential treatment which they received from state-owned banks. The present study clarifies that state-owned entities have a higher propensity to borrow even when they have to obtain loans from commercial banks. In particular, the present study shows that the higher leverage employed by state-owned entities can be attributed to their lower profitability and privileged ability to issue low risk debt.

# APPENDICES

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## Appendix 1 Relationship between Firm Size and Leverage

Author(s)	Data Years	Country or Countries	Sample Size (Number of Firms)	Proxy for Firm Size	Sign
Homaifar et al.	1979-1988	US	370	Total Assets	+
Rajan & Zingales	1987-1991	G-7 <sup>2</sup>	4,554	Net Sales	+
Krishnan & Moyer	1998-1992	17 industrialised countries <sup>3</sup>	283	Total Assets	+
Al-Sakran	1993-1997	Saudi Arabia	35	Total Assets	+
Booth et al	1980-1990	10 developing countries <sup>4</sup>	727	Sales	+
Dessi & Robertson	1967-1989	United Kingdom	557	Real Sales (1985 prices)	+
Manos & Ah-Hen	1992-2000	Mauritius	24	Total Sales	+
Panno	1992-1996	United Kingdom & Italy	150	Total Assets	+
Voulgaris et al.	1989-1996	Greece	218	Total Assets	+
Gaud et al.	1991-2000	Switzerland	104	Sales	+

<sup>2</sup> US, United Kingdom, Canada, France, Germany, Italy and Japan

<sup>3</sup> G-7 plus Austria, Belgium, Netherlands, Norway, Spain, Sweden, Switzerland, Australia, New Zealand and South Africa

<sup>4</sup> Brazil, Mexico, India, Malaysia, Pakistan, South Korea, Thailand, Jordan, Turkey and Zimbabwe

## Appendix 2 Relationship between Profitability and Leverage

Author(s)	Data Years	Country or Countries	Sample Size (Number of Firms)	Measure of Profitability	Sign
Rajan & Zingales	1987-1991	G-7	4,554	<u>EBITDA</u> Total Assets	-
Krishnan & Moyer	1998-1992	17 industrialised countries	283	<u>Operating Profit</u> Sales	-
Graham	1980-1994	US	N.A.	<u>Operating Cash flows</u> Total Assets	-
Al-Sakran	1993-1997	Saudi Arabia	35	<u>Earnings before tax</u> Sales	-
Booth et al.	1980-1990	10 developing countries	727	<u>Earnings before tax</u> Total Assets	-
Dessi & Robertson	1967-1989	United Kingdom	557	<u>EBITDA</u> Total Net Assets	-
Manos & Ah-Hen	1992-2000	Mauritius	24	<u>Profit before interest &amp; exceptional items</u> Total Assets	-
Panno	1992-1996	United Kingdom & Italy	150	<u>Pre-tax Profit</u> Total Sales	+
Voulgaris et al.	1989-1996	Greece	218	<u>Net Profit</u> Total Assets	-
Gaud et al.	1991-2000	Switzerland	104	<u>EBITDA</u> Total Assets	-

### Appendix 3 Relationship between Tangibility and Leverage

Author(s)	Data Years	Country or Countries	Sample Size (Number of Firms)	Measure of Tangibility	Sign	
					Total	L/T <sup>5</sup>
Chung	1980-1984	US	1,449	$\frac{\text{Fixed Assets}}{\text{Total Assets}}$		+
Rajan & Zingales	1987-1991	G-7	4,554	$\frac{\text{Fixed Assets}}{\text{Total Assets}}$	+	
Krishnan & Moyer	1998-1992	17 industrialised countries	283	$\frac{\text{Sales}}{\text{Fixed Assets}}$		+
Graham	1980-1994	US	N.A.	$\frac{\text{Property, Plant \& Equipment}}{\text{Total Assets}}$	+	
Booth et al.	1980-1990	10 developing countries	727	$\frac{\text{Total Assets} - \text{Current Assets}}{\text{Total Assets}}$	-	+
Dessi & Robertson	1967-1989	United Kingdom	557	$\frac{\text{Tangible Fixed Assets} + \text{Stock} + \text{WIP}}{\text{Total Net Assets}}$	+	
Manos & Ah-Hen	1992-2000	Mauritius	24	$\frac{\text{Fixed Assets}}{\text{Total Assets}}$	-	
Voulgaris et al.	1989-1996	Greece	218	$\frac{\text{Net Fixed Assets}}{\text{Total Assets}}$		+
Gaud et al.	1991-2000	Switzerland	104	$\frac{\text{Tangible Assets} + \text{Inventory}}{\text{Total Assets}}$	+	

<sup>5</sup> Long-term

#### Appendix 4 Relationship between Tax and Leverage

Author(s)	Data Years	Country or Countries	Sample Size (Number of Firms)	Measure of Tax	Sign
Homaifar et al.	1979-1988	US	370	effective tax rate	+ L/T <sup>6</sup>
Krishnan & Moyer	1998-1992	17 industrialised countries	283	effective tax rate	-
Booth et al.	1980-1990	10 developing countries	727	average tax rate	-
Manos & Ah-Hen	1992-2000	Mauritius	24	$\frac{\text{Depreciation}}{\text{Total Assets}}$	+

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<sup>6</sup> Long-term

## Appendix 5 Relationship between Growth and Leverage

Author(s)	Data Years	Country or Countries	Sample Size (Number of firms)	Proxy for Growth	Sign
Rajan & Zingales	1987-1991	G-7	4,554	Market to book value of assets <sup>7</sup>	-
Krishnan & Moyer	1998-1992	17 industrialised countries	283	5 year rate of growth in sales	+
Graham	1980-1984	US	N.A.	<u>Research and Development</u> Sales	-
Al-Sakran	1993-1997	Saudi Arabia	35	% change in Assets	-
Booth et al	1980-1990	10 developing countries	N.A.	<u>Market value of equity</u> Book value of equity	-/+
Dessi & Robertson	1967-1989	United Kingdom	557	3 year average sales growth	+
Manos & Ah-Hen	1992-2000	Mauritius	24	3 year average growth rate in Total Assets	+
Voulgaris et al	1989-1996	Greece	218	% change in Total Assets	+
Gaud et al	1991-2000	Switzerland	104	Market to book value of Assets	-

<sup>7</sup> (Book value of assets less book value of equity plus market value of equity) divided by book value of assets

**Appendix 6** Companies listed on the South Pacific Stock Exchange at 30 June 2008

	<b>Name</b>	<b>Code</b>	<b>Activity</b>	<b>Year Listed</b>
1.	Toyota Tsusho (South Seas) Limited	TTS	Automotive	1979
2.	VB Holdings Limited	VBL	Automotive and Property Management	2001
3.	Fijian Holdings Limited	FHL	Finance	1997
4.	Fiji Care Insurance Limited	FIL	Finance	2000
5.	Kontiki Growth Fund Limited	KGF	Finance	2004
6.	Fiji Sugar Corporation Limited	FSC	Manufacturing	1979
7.	Flour Mills of Fiji Limited	FMF	Manufacturing	1979
8.	The Rice Company of Fiji Limited	RCF	Manufacturing	1997
9.	Atlantic & Pacific Packaging Limited	APP	Manufacturing	1998
10.	Pacific Green Industries (Fiji) Limited	PGL	Manufacturing	2001
11.	Foster's Group Pacific Limited	FGP	Manufacturing	2005 <sup>8</sup>
12.	Yaqara Group Limited	YGL	Property Development	2005
13.	R B Patel Group Limited	RBG	Retailing	2001
14.	Fiji Television Limited	FTV	Communication	1997
15.	Communications Fiji Limited	CFM	Communication	2001
16.	Amalgamated Telecom Holding Limited	ATH	Communication	2002

**Source** SPSE Annual Report, 2007

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<sup>8</sup> Carlton Brewery Fiji Limited (CBF) listed in 1997 and South Pacific Distilleries Limited (SPD) in 1981. CBF changed its name to FGP in 2005 and acquired SPD.

Appendix 7 Market Capitalisation at 31 December 2007

	Code	Issued Shares (millions)	Share Price (31.12.07)	Market Capitalisation	IPO	Rights Issue	Share Options	Private Placement	Bond Issue
1.	KGF	3.5	0.90	3.2	✓				
2.	FIL	5.8	0.60	3.5		✓	✓		
3.	VBL	1.5	2.90	4.4		✓	✓		
4.	CFM	3.6	1.75	6.3	✓		✓		
5.	APP	8.0	0.80	6.4	✓				
6.	FSC	44.4	0.33	14.7					
7.	RCF	6.0	2.50	15.0	✓				
8.	PGI	7.6	2.15	16.3			✓		
9.	YGL	15.2	1.18	17.9					
10.	TTS	14.0	1.96	27.4					
11.	FHL	10.5	3.15	33.1	✓				✓
12.	FTV	10.3	3.35	34.5	✓				
13.	RBG	30.0	1.63	48.9					
14.	FMF	150.0	0.80	120.0					
15.	FGP	10.4	12.00	124.8					
16.	ATH	422.1	0.79	333.5	✓			✓	
		<b>742.9</b>		<b>809.8</b>					

Source SPSE website ([http://www.spse.com.fj/uploads/yearly\\_trading\\_report\\_2007.pdf](http://www.spse.com.fj/uploads/yearly_trading_report_2007.pdf))

## Appendix 8 Pacific Green Capital Structure

Year	Liabilities		Long Term Debt		Equity		Gearing	
	\$		\$	%	\$	%		%
1997	1,465,724		-----	0.0	6,170,224			0.0
1998	2,137,498		1,025,845	48.0	6,350,684			13.9
1999	2,999,504		1,886,232	62.9	6,912,652			21.4
2000	3,279,410		2,099,120	64.0	8,592,009			19.6
2001	3,340,164		1,989,585	59.6	9,206,936			17.8
2002	2,300,958		1,609,561	70.0	10,503,157			13.3
2003	2,182,202		1,187,807	54.4	10,683,266			10.0
2004	3,155,712		1,593,369	50.5	5,340,060			23.0
2005	3,509,213		1,824,396	52.0	4,758,632			27.7
2006	3,966,698		1,639,821	41.3	4,244,740			27.9
2007	2,626,275		1,435,706	54.7	4,880,507			22.7
<b>Average</b>	<b>2,814,851</b>		<b>1,481,040</b>	<b>52.6</b>	<b>7,076,907</b>			<b>17.3</b>

Source Annual Reports of Pacific Green (Fiji) Limited

## Appendix 9 FSC Capital Structure

Year	Liabilities		Long Term Debt		Equity		Gearing	
	\$M	%	\$M	%	Reported	Adjusted	Reported	Adjusted
					\$M	%	%	%
1997	119,315	2.7	3,248	2.7	120,880	120,880	2.6	2.6
1998	116,555	2.7	3,128	2.7	113,759	113,759	2.7	2.7
1999	123,178	25.9	31,914	25.9	114,630	114,630	21.8	21.8
2000	129,409	28.1	36,381	28.1	174,906	111,355	17.2	24.6
2001	121,960	28.1	34,236	28.1	154,102	90,608	18.2	27.4
2002	123,443	31.3	38,582	31.3	130,604	74,273	22.8	34.2
2003	139,351	30.8	42,902	30.8	114,948	60,317	27.2	41.6
2004	105,584	52.9	55,842	52.9	117,414	62,818	32.2	47.1
2005	54,672	24.9	13,639	24.9	169,516	114,957	7.4	10.6
2006	43,065	19.8	8,509	19.8	169,882	115,350	4.8	6.9
2007	74,032	38.0	28,103	38.0	176,128	115,350	13.8	18.8
<b>Average</b>	<b>104,597</b>	<b>25.8</b>	<b>26,953</b>	<b>25.8</b>	<b>141,524</b>	<b>100,064</b>	<b>16.0</b>	<b>21.2</b>

Source Annual Reports of Fiji Sugar Corporation Limited

FSC conducted an asset revaluation in 2000. The relating reserve has been subtracted to determine “adjusted equity.”

## Appendix 10 Air Pacific Capital Structure

Year	Liabilities	Long Term Debt		Equity		Gearing
		\$M	%	Reported	Adjusted	
1997	79,728	7,398	9.3	56,853	56,853	11.5
1998	100,482	8,725	8.7	63,169	63,169	12.1
1999	183,828	68,966	37.5	80,376	80,376	46.2
2000	337,238	211,458	62.7	95,954	95,954	68.8
2001	332,330	224,150	67.4	68,656	68,656	76.6
2002	340,433	199,855	58.7	73,991	73,991	73.0
2003	356,812	156,803	43.9	90,507	87,245	64.3
2004	346,344	121,612	35.1	111,781	106,823	53.2
2005	370,153	104,106	28.1	124,044	124,044	45.6
2006	342,792	95,891	28.0	143,892	143,892	40.0
2007	328,261	72,537	22.1	139,995	139,995	34.1
<b>Average</b>	<b>283,491</b>	<b>115,591</b>	<b>40.8</b>	<b>95,383</b>	<b>94,636</b>	<b>55.0</b>

Source Annual Reports of Air Pacific

Equity balances in 2003 and 2004 have been adjusted, by adding back proposed dividends.

## Appendix 11 FEA Capital Structure

Year	Liabilities		Long-term Debt		Equity		Gearing	
	\$M	%	\$M	%	Reported	Adjusted	Reported	Adjusted
1997	222,853	90.5	201,574	90.5	277,612	114,561	42.1	63.8
1998	197,834	84.1	166,469	84.1	299,779	136,786	35.7	54.9
1999	163,914	91.7	150,380	91.7	318,166	155,173	32.1	49.2
2000	157,374	76.3	120,050	76.3	315,905	152,912	27.5	44.0
2001	150,799	88.3	133,156	88.3	319,274	156,281	29.4	46.0
2002	131,785	89.1	117,426	89.1	324,913	161,920	26.5	42.0
2003	129,778	87.9	114,041	87.9	330,144	167,151	25.7	40.6
2004	126,737	73.6	93,305	73.6	325,378	162,385	22.3	36.5
2005	203,302	80.6	163,853	80.6	402,711	165,518	28.9	49.7
2006	202,911	85.4	173,246	85.4	394,097	156,904	30.5	52.5
2007	291,424	75.1	218,954	75.1	377,669	140,476	36.7	60.9
<b>Average</b>	<b>179,883</b>	<b>83.5</b>	<b>150,223</b>	<b>83.5</b>	<b>335,059</b>	<b>151,824</b>	<b>31.0</b>	<b>49.7</b>

Source Annual Reports of FEA

FEA conducted asset revaluations in 1992 and 2005. The relating reserves have been subtracted to determine “adjusted equity.”

## Appendix 12 Post Fiji Capital Structure

Year	Liabilities	Long-term Debt		Equity	Gearing
	\$M	\$M	%	\$M	%
1997	13,757	368	2.7	7,410	4.7
1998	10,649	2,635	24.7	8,596	23.5
1999	9,758	2,183	22.4	9,621	18.5
2000	11,283	1,959	17.4	10,370	15.9
2001	10,716	1,340	12.5	11,202	10.7
2002	13,332	4,096	30.7	12,231	25.1
2003	13,553	3,560	26.3	12,976	21.5
2004	16,977	4,311	25.4	13,719	23.9
2005	16,770	3,608	21.5	13,999	20.5
2006	18,521	6,032	32.6	11,792	33.8
<b>Average</b>	<b>13,532</b>	<b>3,009</b>	<b>22.2</b>	<b>11,192</b>	<b>21.2</b>

Source Annual Reports of Post Fiji Limited (2007 Annual Report had not been released)

### Appendix 13 Government Commercial Companies

Name	Code
Airports Fiji Limited	AFL
Fiji Broadcasting Corporation Limited	FBCL
Fiji Ports Corporation Limited	FPCL
Fiji Public Trustee Corporation Limited	FPTCL
Fiji Ships & Heavy Industries Limited	FSHL
Food Processors Limited	FPL
Post Fiji Limited	PFL
Rewa Rice Limited	RRL
Unit Trust of Fiji (Management)	UTOFM
Viti Corp Company Limited	VCL
Yaqara Pastoral Company Limited	YPCL

**Source** Ministry of Public Enterprise and Public Sector Reform

## Appendix 14 Statutory Authorities

Name	Code
Agromarketing Authority of Fiji	AMA
Civil Aviation Authority of Fiji Islands	CAAFI
Coconut Industry Development Authority	CIDA
Fiji Institute of Technology	FIT
Fiji Investment Corporation	FIC
Fiji Islands Revenue and Customs Authority	FIRCA
Fiji National Provident Fund	FNPF
Fiji Shipping Limited	FSIL
Fiji Sports Council	FSC2
Land Transport Authority of Fiji	LTA

**Source** Ministry of Public Enterprise and Public Sector Reform

## Appendix 15 Commercial Statutory Authorities

Name	Code
Fiji Electricity Authority	FEA
Fiji Meats and Industry Board	FMIB
Housing Authority	HA
Public Rental Board	PRB

**Source** Ministry of Public Enterprise and Public Sector Reform

### Appendix 16 Correlation Matrix for Total Leverage

	Leverage	Type	TA	Sales	RE	Profit Ratio	ROA	Tang	Tax Rate	Dep'n Shield	Sales Growth	Asset Growth
Leverage	1											
Type	0.215**	1										
TA	0.251**	0.208**	1									
Sales	0.088	(0.337)**	0.610**	1								
RE	(0.253)**	(0.015)	0.610**	0.405**	1							
Profit Ratio	0.022	0.039	0.208**	0.017	0.184**	1						
ROA	(0.284)**	(0.202)**	(0.183)**	(0.055)	0.097	0.432**	1					
Tang	(0.280)**	0.156**	0.367**	0.222**	0.306**	0.253**	0.005	1				
Tax Rate	(0.050)	(0.028)	(0.017)	(0.020)	0.019	0.017	0.014	0.076	1			
Dep'n Shield	(0.348)**	(0.203)**	(0.084)	0.068	0.229**	0.173**	0.390**	0.397**	0.026	1		
Sales Growth	(0.069)	0.042	(0.052)	(0.061)	(0.077)	0.073	0.017	(0.007)	(0.034)	(0.053)	1	
Asset Growth	0.000	(0.001)	(0.043)	(0.074)	(0.018)	0.200**	0.162*	0.017	0.040	(0.043)	0.308**	1

\*\* Correlation is significant at the 0.01 level (1-tailed)

\* Correlation is significant at the 0.05 level (1-tailed)

**Appendix 17** Correlation Matrix for Long-term Leverage

	LT Leverage	Type	TA	Sales	RE	Profit Ratio	ROA	Tang	Tax Rate	Dep'n	Sales Growth	Asset Growth
LT Leverage	1											
Type	0.405**	1										
TA	0.311**	0.208**	1									
Sales	(0.111)	(0.337)**	0.610**	1								
RE	(0.196)**	(0.015)	0.610**	0.405**	1							
Profit Ratio	0.084	0.039	0.208**	0.017	0.184**	1						
ROA	(0.353)**	(0.202)**	(0.183)**	(0.055)	0.097	0.432**	1					
Tang	(0.180)**	0.156**	0.367**	0.222**	0.306**	0.253**	0.005	1				
Tax Rate	(0.052)	(0.028)	(0.017)	(0.020)	0.019	0.017	0.014	0.076	1			
Dep'n Shield	(0.350)**	(0.203)**	(0.084)	0.068	0.229**	0.173**	0.390**	0.397**	0.026	1		
Sales Growth	(0.039)	0.042	(0.052)	(0.061)	(0.077)	0.073	0.017	(0.007)	(0.034)	(0.053)	1	
Asset Growth	0.027	(0.001)	(0.043)	(0.074)	(0.018)	0.200**	0.162**	0.017	0.040	(0.043)	0.308**	1

\*\* Correlation is significant at the 0.01 level (1-tailed)

\* Correlation is significant at the 0.05 level (1-tailed)

**Appendix 18** Descriptive Statistics for Variables in the Regression Model

<b>Variable</b>	<b>Scale</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Range</b>
Leverage	%	43.16	21.81	6.00	105	99
Long-term Leverage	%	24.45	27.59	0.00	105	105
Total Assets	\$000	103,393	144,856	923	669,093	668,170
Return on Assets	%	13.10	11.88	(37.00)	62	99
Retained Profits	\$000	8,519	32,080	(85,126)	131,341	216,467
Tangibility	%	53.73	25.43	0.00	96	96
Non-debt Shield	%	4.86	3.05	0.00	14	14
Asset Growth						
Sales Growth						

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