The Effect of Corporate Finance on Profitability

The Case of Listed Companies in Fiji

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Abstract

This paper empirically examines the effect of corporate finance on the profitability of firms that are listed on the South Pacific Stock Exchange in Fiji. The study finds that over the years 2000-2007, the 16 companies that are listed on the stock exchange relied largely on equity finance. Using panel data analysis, the study also finds that all the three measures of leverage are inversely related with profitability. Although short-term and long-term debts are statistically insignificant, total debt is highly significant.

Keywords: corporate finance, profitability, leverage, South Pacific Stock Exchange.

I. Introduction

All types of businesses need to make financial decisions in order to maximise firm value. One such decision is the choice of corporate finance. Investment opportunities can be financed using two major categories of securities being equity and debt. Within these two categories there are countless combinations. For instance , a business can be financed using a mixture of bonds, commercial bank loans, commercial notes, leases, retained earnings and shares, to name a few. The choice of corporate finance was initially explained by the seminal work of Modigliani and Miller (1958). They proposed that the choice of finance had no influence on firm value. However, their theory was framed in a highly simplified environment by making several unrealistic assumptions, such as perfect capital market, homogenous expectations, no taxes and no transaction costs.

After their initial proposition that capital structure is irrelevant, Modigliani and Miller revised their argument in 1963 by incorporating the influence of taxes. In this new dimension, they argue that firms should use as much debt as possible because of the tax savings on interest payments. Interest is a tax-deductible expense which means that if a firm pays more interest, they will pay lower tax. However, as a firm continues to use more debt the potential bankruptcy-related costs increases. Bankruptcy costs are incurred when there is probability that a firm will default on the loan repayments and the payment of interest. Therefore, the choice of corporate finance involves a tradeoff between interest-tax savings and bankruptcy costs. This is known as the static trade-off model.

In addition to this, the pecking order theory can also be used to explain the choice of capital structure and its effects of profitability. This theory suggests the order in which a firm will finance its investment opportunities. It suggests that a firm will initially rely on internally generated funds, that is, retained earnings. This is because retained earnings are the cheapest of all sources of finance. After using retaining earnings, the firm will them move to use debt finance and finally will issue equity. The implication of the pecking order theory is that if a firm is profitable it is expected to uses less debt compared to firm that do not generate high profits.

There are studies carried out to examine the impact of corporate finance on firm profitability. However these studies mainly examine the listed companies of the developed countries. There are also no studies undertaken in Fiji to empirically examine this relationship. Therefore, this paper seeks to provide an insight into the capital structure of listed firms in Fiji and to examine how this capital structure impacts on its performance. The South Pacific Stock Exchange is the only licensed stock exchange in Fiji. It commenced operations as a trading post in 1979 and continued trading in this manner until 1996 when a call market session was established. The exchange provides a primary market to companies to raise equity finance as well as secondary market to provide improved liquidity. Apart from the listed company's shares other securities that are traded on the exchange are Government bonds, statutory authority bonds, Government treasury bills, statutory authority promissory notes, central bank notes and tradable term deposits.

The rest of the paper is structured as follows: section two provides a review of the literature, section three discusses methodology and data, section four discusses empirical results and section five provides concluding comments.

II. Review of related studies

There are several studies that have been carried out to examine the relationship between corporate finance and profitability. Some have been carried out using single country data while others have made international comparisons. However, these studies have produced conflicting results.

Rajan and Zingales (1995) is one of a few studies that have used cross-country comparison of capital structure theories. They use four key independent variables to analyse the determinants of capital structure of the public companies in the G-7 countries[1]. These variables were tangibility of assets, market-to-book ratio, log of sales (as a proxy for size) and a measure of profitability. Given that most of the studies on capital structure are based on US data, they wanted to test if the determinants of capital structure choice in the US are similar in other countries. Rajan and Zingales find that the factors that determine the choice of capital structure in the US are similar for other G-7 countries. In addition to this, they find a significantly negative correlation between profitability and leverage.

A similar study is undertaken by Booth *et al.* (2001) whereby they analyse capital structure choices of 10 developing countries[2] to find if the variables that explain such choices in the developed countries are also relevant for the developing countries. They examine this behavior over the period 1980 to 1991. Booth *et al.* extend Rajan and Zingales (1995) model by incorporating tax and business risk. They use panel data technique to estimate the three measures of debt against firm's tax rate, standard deviation of ROA (as a proxy for business risk), asset

[1] These are The United States, Germany, Canada, Italy, France, Japan and United Kingdom.
[2] These were India, Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan and Korea.

tangibility, log of sales (as a proxy for size), ROA, market to book ratio. They find that in both developed and developing countries, similar variables explain capital structure choices. This holds despite institutional differences between these two economies. One of the strongest results that they found was that for all countries in the sample (except Zimbabwe) profitability was consistently negative and significant with all measures of debt. Their three measures of debt were total book-debt ratio, long term book-debt ratio and long term market debt ratio.

In another cross-country study, Ratha *et al.* (2003) also finds similar evidence whereby profitability declined as firms increased their use of leverage. They analyse the financial structures and performance of corporations in the developing countries. Amongst various other things, they examine the relationship between international finance and firm profits in the emerging markets of East Asia and Pacific[3], Europe and Central Asia and Latin America and the Caribbean.

Using US data, Friend and Lang (1988) estimate several multivariate relationships of the debt ratios using ordinary least squares. Amongst other things, they find that the debt ratios of the closely held corporations and publicly held corporations are strongly negatively related to profitability. Similar conclusion is also reached by Graham (2000), who carried out research to find if the tax benefits of debt affect a firm's corporate financing decisions. He finds that a typical would could double its tax benefits by using debt until the marginal benefits begin to fall. He infers a firm's use of debt by examining the shape of its tax benefit function.

[3] Note that Fiji was not included in this study.

Kyereboah-Coleman (2007) also attempt to the find the impact of capital structure on profits but in a different environment setting. Using panel data analysis over the period 1995-2004, he analyses the performance of microfinance institutions in Ghana. Most of the studies examining the effect of capital structure have been carried out in the developed economies on large and listed firms. These institutions provide credit and financial services to small and micro enterprises. As a measure of performance of the microfinance institutions, he uses a unique data of Outreach and Default rate. These variables capture and the success and sustainability of the institutions. As measures of leverage, he uses short-term debt, long-term debt and total debts as a ratio of total assets. For control variables, he uses firm size, risk level and firm age. Firm size is measured as the lost of assets, risk level is measured as the deviation from mean profitability while age is the number of years the firm has been in operation and this is measured as log of age. His study shows that highly leveraged microfinance institutions perform better than those which use less leverage.

Abor (2005) investigate the relationship between capital structure and profitability of the 22 firms listed on the Ghana Stock Exchange over the period 1998-2002. Using panel data methodology, he estimated three models, one each for short term, long term and total debts. He used ROE as a measure of profitability and sales growth and log of sales (as a proxy for firm size) as control variables. In all the three equations he finds significantly positive effect of the control variables on profitability. He finds a significantly positive relationship for short-term and total debt with and profitability. On the other hand, he finds a significantly negative relationship between long-term debt and profitability. Baker (1973) also finds that a significantly positive

relationship using industry data. He came to this conclusion by controlling for risk and market structure variables.

III. Methodology

This paper included all the firms that are listed on the SPSE over the period 2000-2007, which resulted in 110 observations. The variables analysed are profitability and leverage ratios. Profitability is operationalised using earnings before interest, tax and depreciation and amortization (EBITDA) over total assets. The leverage ratios include short-term debt to assets, long-term debts to assets and total debts to assets. The leverage ratios were also analysed in these categories in Kyereboah-Coleman (2007) and Abor (2005). In order to accurately capture the effect of leverage on profitability, other variables that affected profitability were controlled. There variables were firm size and risk. In light of the panel character of the data, panel data methodology is applied. Therefore the relationship between financial leverage and profitability is estimated using the following regression models:

$$ROA_{i,t} = \beta_0 + \beta_1 SDA_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 RISK_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$ROA_{i,t} = \beta_0 + \beta_1 LDA_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 RISK_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$ROA_{i,t} = \beta_0 + \beta_1 DA_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 RISK_{i,t} + \varepsilon_{i,t} \quad (3)$$

Where:

$ROA_{i,t}$ is earnings before interest, tax and depreciation and amortization divided by total assets for firm *i* in time *t*;

$SDA_{i,t}$ is short-term debt divided by total assets for firm *i* in time *t*;

$LDA_{i,t}$ is long-term debt divided by total assets for firm *i* in time *t*;

$DA_{i,t}$ is total-term debt divided by total assets for firm *i* in time *t*;

$SIZE_{i,t}$ is the log of assets for firm *i* in time *t*;

$RISK_{i,t}$ is the deviation from the mean ROA for firm *i* in time *t*;

IV. Empirical results

Table 1 provides a summary of the descriptive statistics of the dependent and independent variables. This shows the average indicators of the annual data computed from the financial statements of the listed companies. The profitability rate measured by ROA reveals an average of 14.91% with a median of 16.40%. This suggests that the firms performed moderately during the 2000-2007 period. As a measure of profit, ROA indicates management's efficiency in using business assets to generate net income. The variable SDA measures the ratio of short-term debt to total assets. The average value of this is 27.09% with median of 24.24%. This suggests that on average 27% of the assets are financed using short-term debts. The ratio of long-term debt to total assets averages 10.29% with a median of 7.42% while total debts to assets averages 37.69% with a median of 39.45%. These statistics indicate that firms listed on the SPSE over the study period largely rely on equity financing given that debt financing is only around 38%. Furthermore, of the debt financing used, around three-quarters are in the form of short-term.

Table 1 Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Median	Max
ROA	0.1491	0.1199	-0.5821	0.1640	0.4075
SDA	0.2709	0.1419	0.0172	0.2424	0.7364
LDA	0.1059	0.1083	0	0.0742	0.4341
DA	0.3769	0.1589	0.0172	0.3945	0.7364
SIZE	7.3824	0.65914	6.3188	7.1569	8.6280
AGE	1.2051	0.3701	0	1.3010	1.7782
RISK	0.0003	0.0807	-0.1709	-0.0033	0.5808

Panel data analysis is used to investigate the relationship between corporate finance and profitability. Ordinary least squares regression results are presented in Table 2. The results from the regression models (1), (2) and (3) denote that the independent variables explain the debt ratio determinations of the firm at 78.00%, 78.14% and 78.69%, respectively. The *F*-statistics prove the validity of the estimated models.

The results in regression (1) reveal a negative relationship between short-term debt and profitability. However, this relationship is not significant. Similar result is also obtained for long-term debt in regression (2). The third regression model reveals a significantly negative relationship between total debts and profitability. This implies that that an increase in total debts is associated with a decline in profits. The control variables, firm size and risk, were highly significant in all the three models. The measures of firm size and risk were adopted from Kyereboah-Coleman (2007) study. An additional control variable, firm age was also tested. Age represented the number of years a firm was in operation and was measured as log of age. In light of the political instability in the country over the study period, the effect of the coup variable was

also tested as a dummy. Although, these two variables reflected the correct sign, they were removed from the final regressions as their effects were highly insignificant.

Table 2 Regression Results

	Profitability		
Variable	1	2	3
SIZE	0.02280(9.29) *	0.0219(13.30) *	0.0260(8.73) *
RISK	-0.9959(-9.36) *	-0.9799(-9.17) *	-0.9719 (-9.19) *
SDA	-0.0746(-1.25)		
	[0.213]		
LDA		-0.1225(-1.51)	
		[0.133]	
DA			-0.1162 (-2.15) **
Adj R2	0.7800	0.7814	0.7860
SE	0.0896	0.08931	0.08837
Prob (F)	0.0000	0.0000	0.0000

* Significant at 1% level

** Significant at 5 % level

P values are included in square brackets

V. Conclusions

The choice of corporate finance is one of the crucial decisions that a firm undertakes as this will affect the value of the firm. This paper examines the financing patterns of the firms that are listed on the SPSE over the period 2000-2007. Furthermore, the paper also examines the effects of corporate financing choice of the firm on its profitability. The results reveal that over the study

period, listed companies largely relied on equity financing as debt finance only constituted 38%. Of the amount of debt finance used, majority was through short-term funds. The study also finds that all the three categories of corporate finance are negatively related to profitability. Although short and long-term debts have an insignificant relationship, total debts are significantly related. This implies that listed companies are not concerned about the maturity and the resultant cost of debt finance. Instead, they are more concerned with the availability of funds. Finally the negative relationship between leverage and profitability is consistent with the pecking order theory.

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