

The Link between Profitability and Financial Leverage, Evidence from a Small Island Economy

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Abstract

The objective of this paper was to investigate the link between profitability and financial leverage in Mauritius, a small island developing economy. For the purpose of this study data was collected from a sample of 34 companies listed on the Stock Exchange of Mauritius (SEM) for period 2007 to 2017. The pecking order theory, the modigliani and miller theory, the trade-off theory and the agency theory were used to examine the association between profitability and financial leverage in Mauritius. The findings of this research reveal a positive link between profitability and financial leverage of Mauritian listed companies. This positive relationship is consistent with the modigliani and miller theory, the trade-off theory and the agency theory. This research also reveals a negative link between firm size and profitability. This study also shows that there are no significant relationships between liquidity and profitability and between growth opportunities and profitability of Mauritian listed firms.

Keywords: Profitability, Financial Leverage, Modigliani and Miller Theory, Trade-off Theory, Agency Theory

1. Introduction

Profitability has always been the ultimate aim of all firms and is widely used in assessing their financial performance. The pursuit for profitability has now become an extensive prerequisite for organizations' long-term sustainability. As a matter of fact, no firms or businesses sustain in the market for a long period of time without generating enough profits. Researchers have provided valuable insights in the field of profitability and the possible drivers behind variations in profitability. Financial leverage is contemplated to be one of the central drivers of profitability.

Financial leverage is defined as a composition of debt that an entity uses for investment purposes. Elucidating the role that financial leverage plays on profitability of organizations is not a research that was born recently, but stays among the extant research worldwide. The question as to whether financial leverage contributes towards the profitability of firms, has grabbed the attention of numerous researchers such as Modigliani and Miller (1958), Myers (1984), Jensen and Meckling (1986), Rajan and Zingales (1995), Abor (2005), Rehman (2013), Eckbo and Kisser (2018) and many others.

Past studies have produced an eclectic mix of results on the link between profitability and financial leverage. In perusing how financial leverage is connected to profitability of firms, a positive association between profitability and financial leverage was supported by Yoon and Jang (2005), Akhtar et al (2012) and Eckbo and Kisser (2018) amongst others. Furthermore studies such as Kester (1986), Rajan and Zingales (1995), and Pradhan and Khadka (2017) amongst others documented a negative influence of financial leverage on profitability. Nonetheless no significant association between financial leverage and profitability was documented by Kebewar (2012) and Yegon (2014). It is observed that there is no unanimity in the empirical strand of literature with regards to the link between profitability and financial leverage.

Despite enormous studies investigated the influence of financial leverage on profitability, yet a majority of them concentrated in the economically industrialized countries. Scant studies on this area were carried out in developing countries. In addition very few studies have been conducted in this field in small island economies such as Mauritius, which is an emerging economy in the African markets. Given the dissimilarity in the previous studies and the very limited works in developing economies and small island economies, it is important to investigate the relationship between financial leverage and profitability in Mauritius which is an emerging small island economy. This study contributes to the existing literature in developing economies and small island economies in the field of financial leverage and profitability. This paper is as follows. Section 2 contains the review of literature, the methodology is explained in section 3, the findings and discussion is in section 4 and section 5 concludes and provides relevant recommendations.

2. Literature Review

2.1 Theoretical Review

The pecking order theory, the modigliani and miller theory, the trade-off theory and the agency

theory are commonly used theories in the literature to explain the relationship between financial leverage and profitability of firms. These theories are explained in more detail in this section of the paper.

2.1.1 Pecking Order Theory

The Pecking Order Theory (POT) forecasts that there exists an inverse association between profitability and financial leverage. This theory advocates that firms must have recourse to different types of financing according to a specific order. A firm must first use its internal financing through retained earnings, followed by external financing through debt and the last option would be external funding through equity (Myers & Majluf, 1984).

According to Myers and Majluf (1984), the pecking order of funding firms is grounded on the concept of asymmetric information. This implies that management is better informed about the company's risks, value and opportunities than investors or shareholders. Due to this information asymmetry, no adverse selection problem is observed with retained earnings while equity has higher adverse selection problem as compared to debt. Thus, when external funding is used, firms have a stronger preference for debt rather than equity because of higher cost of equity. Myers (1984) claims that because of the existence of information asymmetry and adverse selection, this compels profit-making firms to make use of their retained earnings over external financing.

The inverse relationship between profitability and leverage can be explained as a result of the fact that profitable firms have higher retained earnings. Thus, this reserve will be used when it comes to financing projects of the firm. The latter will be less willing to take debt since they are unlikely to be faced with financing constraints.

2.1.2 Modigliani and Miller Theory

As explained by Modigliani and Miller (1958) in its theory of irrelevance of the capital structure, in a tax-free environment, irrespective of whether a firm is financed by debt or not, its market value remains unaffected. Modigliani and Miller (1958) draws the attention that a firm's market value is computed by the risks involved with the underlying assets of a firm as well as the income generated by that firm. Also, whether a firm is highly geared or low geared, this has no influence on the Weighted Average Cost of Capital (WACC) of that firm.

The higher the debt used by a company, the more risky it appears to be, therefore investors will demand for more return. However, as described by Alifani and Nugroho (2013), the expected return that is paid to investors on the level of equity is compensated by the cheaper cost of debt of the firm. So, in this case, the firm's value remains unchanged regardless if that firm is highly geared or not in a tax free economy.

However, the Modigliani and Miller (1958) theorem is grounded on certain assumptions such that it operates in frictionless markets and that transaction costs and taxes are not present. Modigliani and Miller (1963) revised its theorem and included the effect of corporate taxes. According to Modigliani and Miller (1963), a positive link exists between leverage and a firm's value. To be able to increase the value of a firm, the latter should take more debt so as to gain

advantage from the tax-shield effect. This refers to a situation whereby interest is deducted when paying for taxes and hence the amount to be paid in tax is reduced. We can therefore say that a highly geared company pays a lower proportion of tax than a firm which is low geared.

In the presence of tax, firms are able to take advantage of the tax shield effect in the case of rising debt proportion. Consequently the WACC will decrease whilst firm's value will rise. In other words, the level of income generated by the firm will grow hence illustrating the positive association between profitability and leverage. This situation occurs up to the optimal capital structure. However, when a firm is too highly geared, this can negatively impact the firm's value. Such a situation will prevail when the firm operates at a point which is beyond its optimal capital structure. This is because after the optimal debt to equity ratio, the costs of financial distress are greater than the cheap cost of issuing debt and consequently WACC starts to increase leading to lower firm value (Modigliani & Miller, 1963).

2.1.3 Trade-Off Theory

The Trade-off theory (TOT) advocates that a company is faced with the choice of how much debt finance to use and the extent of equity finance to use such that the costs and benefits of each source of finance offset each other. Brealey & Myers (2003) argued that as a result of a firm's debt-equity decision, financial managers believe that between the costs of financial distress and interest tax shields, there exists a trade-off. In other words, the tax shield benefits are offset by financial distress costs and agency costs of that firm.

Under the static Trade-Off Theory, Shyam-Sunder and Myers (1999) stated that there is an assumption that firms will try to balance the costs of financial distress against the interest tax shields' marginal present values. This optimal level is achieved when the marginal value of the benefits, as a result of issuing debt, completely offsets the rise in present value of the costs related with the issue of more debt. At this optimal debt ratio, the firm's value is maximized, consequently the firm maximizes profit. The static TOT hence depicts financial leverage and profitability to be positively related. Niu (2008) suggested that the more profitable a firm is, the higher its target debt ratio is.

2.1.4 Agency Theory

The agency theory portrays that financial leverage is positively associated with profitability. The theory emphasizes on the conflict of interest which may arise between the owners of a company, that is the shareholders, and management. This conflict of interest may crop up when management act in their own personal interests first rather than acting in the best interests of the shareholders.

Jensen and Meckling (1986) stated that the problem is to find ways to prevent managers to engage in inefficient and non-profitable investments. Jensen (1986) and Stulz (1990) share the same idea that high leverage diminishes the amount of free cash flow available to managers, thereby reducing the need to invest in incompetent firms or other loss-making firms in which management may have personal interests.

Another remarkable effect is the threat of bankruptcy. Due to this threat, managers are forced

to run businesses profitably. Also, given that creditors have the legal right to sue a firm if it fails to honor their claims, managers are urged to run the firm in a profitable manner and avoid wastage of the business resources so as not to lose their jobs. Therefore, using debt positively impacts on the level of profitability.

2.2 Empirical Review

Existing studies have revealed mixed results on the association between financial leverage and profitability of firms. Some studies have documented positive relationship between financial leverage and profitability, some studies have revealed negative association between these two variables and some studies have also documented no significant link between these two variables. Research on the association between financial leverage and profitability has mostly focused on developed countries. Nonetheless little research has so far been conducted in this field in developing countries and in particular in small island economies.

Yoon and Jang (2005) revealed a positive link between financial leverage and profitability in US. Akhtar et al. (2012) revealed a positive link between profitability and financial leverage in Pakistan. Since the trade-off theory predicts that in rebalancing capital structure between debt and equity that highly profitable firms move towards a highly geared ratio, Eckbo and Kissner (2018) attempted to use new tests in scrutinizing about the relationship between debt and profitability. They suggested that the cross-sectional correlation of profitability and leverage is significantly positive when rebalancings of capital structure is financed internally.

Existing studies have also documented negative relationships between profitability and financial leverage. Out of an observation carried out in American and Japanese manufacturing firms, Kester (1986) revealed the existence of an inverse association between profitability and debt ratios. In the same vein Rajan and Zingales (1995) found a negative link between profitability and leverage in the major industrialized countries namely the G-7 countries.

Abor (2005) found a negative relationship between profitability and long-term debt ratio in the context of Ghana. Goddard, Tavakoli and Wilson (2005) conducted an analysis in the firms of manufacturing and service sector from countries like Belgium, Italy and the UK and their research revealed a negative association between profitability and financial leverage. In addition Kebewar (2013) found a negative relationship between profitability and financial leverage in the French trade sector. Pradhan and Khadka (2017) found a negative association between profitability and long-term debt ratio in Nepal.

Existing research have also documented no significant associations between profitability and financial leverage. Kebewar (2012) revealed no significant link between profitability and financial leverage in France. In addition Yegon (2014) documented a non-significant association between profitability and financial leverage in Kenya.

2.3 Hypothesis Development

In spite of all the evidences provided with regards to the theories of capital structure, Barclay and Smith (1999) discuss that no such model exists which decisively test the validity of the contradicting theories. Theories explaining the link between profitability and financial leverage

are found to be in conflicts given the fact that not all theories conform to each other and hence do not predicate a single conclusion based on the relationship between profitability and debt. Whilst the Modigliani and Miller (1963) theory, the trade-off theory and the agency theory validate a positive association, the pecking order theory predicts an inverse relationship between financial leverage and profitability.

As a matter of fact, taking into account the theoretical framework and past studies carried out, literature is still unclear on the relationship between profitability and financial leverage. Out of all the assorted views revealed by the theories of capital structure in connection with the relationship between profitability and financial leverage, the majority of the existing theories predominantly ascertain a positive relationship. Moreover most empirical studies in developed countries showed debt is negatively related to profitability whereas in developing countries, most of the studies concluded a positive association. Since Mauritius is an economically developing country, therefore the relevant hypothesis is that there is a positive link between profitability and financial leverage of Mauritian listed companies.

3. Methodology

3.1 Model Specification

Theories such as Pecking order theory, Modigliani-Miller theorem, Trade-off theory and the Agency theory have been used to examine the relationship between financial leverage and profitability of Mauritian listed firms. The period of study is 2007 to 2017. Data was collected from a sample of 34 firms listed on the Stock Exchange of Mauritius (SEM). An unbalanced panel data was mounted because of a few missing data and also because a few firms started operations after 2007. The total number of firm year observations for the period of study is 312. The following regression model has been used to investigate the association between financial leverage and profitability. This model has been adapted from Rajan and Zingales (1995), Yoon and Jang (2005), Akhtar et al. (2012), Kebewar (2012) and Pradhan and Khadka (2017) amongst others.

$$ROA_t = \beta_0 + \beta_1 LEV_t + \beta_2 FSIZE_t + \beta_3 LIQ_t + \beta_4 GO_t + \varepsilon_t$$

Model 1

Where;

ROA_t = Return on assets of a firm at time t. It is the ratio of profit for the year to total assets of a firm.

LEV_t = Financial Leverage of a firm at time t. It is measured as the ratio of total long-term debt to total assets of a firm.

FSIZE_t = Size of a firm at time t and it is the log of total assets of a firm.

LIQ_t = Liquidity of a firm at time t and it is measured as the ratio of current assets to current liabilities of a firm.

GO_t = Growth Opportunities of a firm at time t and it refers to annual percentage change in

total assets of a firm.

In the first instance Pooled cross-sectional OLS has been conducted. The main problem with Pooled cross-sectional OLS is that it discards the characteristics of heterogeneity and uniqueness of data sets. For this reason Hausman test has been conducted to determine the use of either the fixed effect or the random effect model.

3.2 Description of Variables

Profitability measure is the dependent variable employed in the model since the study focuses on the link between profitability and financial leverage. This study has assessed whether taking debt contributes to the profitability of firms. Generating profits remain the ultimate objective of all firms and without profitability, this will lead to the closure of firms as in the long run, no business will survive. Profitability is referred to be a measurement of efficiency. It is associated with whether a firm is able to earn a return on an investment based on its resources. Hence, the financial metrics that has been used as a proxy for profitability is Return on Assets (ROA). As per Kangarlouei et al. (2012), out of all the financial ratios that exist to evaluate financial performance of a firm, ROA is among the most widely used financial ratios.

Financial leverage is an independent variable in the regression model used to examine the link between financial leverage and profitability. The more debt a company takes, the more it will have to pay in terms of interest expense. Hence the firm will be paying fewer corporate taxes due to the benefits accompanied with the tax shield effect. The reduction in tax payments will enable firms in increasing their firm value (Modigliani & Miller, 1963). According to Jensen (1986) and Stulz (1990) high leverage diminishes the amount of free cash flow available to managers, thereby reducing the need to invest in incompetent firms or other loss-making firms in which management may have personal interests. Therefore, using debt positively influence the level of profitability. However it is also possible that the more profitable a firm is, the lower the firm is geared. This is because firms having high profitability levels are likely to have higher retained earnings and they are more likely to use this reserve instead of debt to finance projects of the firm (Myers, 2001).

Control Variables

Firm size, firm liquidity and growth opportunities of a firm have been used as control variables for the purpose of this study. According to Pandey (2004), firm size is referred to be the total amount of assets that a firm possesses. It is found that larger organizations tend to be highly levered since they have an advantage over smaller firms in terms of lower borrowing costs. In addition, larger firms are less prone to bankruptcy given the fact that they are more diversified, have better technology, have higher market power and have less asymmetric information costs than small-sized firms. Thus, as stated by Rajan and Zingales (1995) and Voulgaris and Lemonakis (2014), all this can lead to a positive influence on the profitability of firms. It therefore follows that firm size is expected to be positively associated with profitability of a firm. However Shepherd (1972) and Schneider (1991) argued that there is a negative association between firm size and profitability.

According to Saluja and Kumar (2012), there exist a trade-off between liquidity and profitability. Higher liquidity is likely to negatively affect profitability. Hence an inverse association between liquidity and profitability is expected. Growth opportunity encompasses an investment or project that is likely to lead to a significant growth of a firm and a rise in the level of profits for a firm. A positive relationship is expected between growth opportunities and profitability of a firm.

4. Findings and Discussion

4.1 Findings

To begin with, descriptive statistics have been conducted for the sample of firms which are illustrated in the following table.

Table 1: Descriptive Statistics

	ROA	LEVERAGE	SIZE	LIQUIDITY	GROWTH
Mean	0.208666	0.634860	6.687800	2.638147	3.726708
Maximum	55.34390	190.7986	8.538083	90.83583	1141.506
Minimum	-0.220918	0.000000	4.339730	0.071249	-0.998860
Skewness	18.50143	18.51754	-0.235114	8.006934	17.57825
Kurtosis	343.5364	343.9340	3.401753	82.28251	309.9977

Table 1 demonstrates that on average Mauritian listed firms' ROA is 20.86%. Furthermore, the average value for financial leverage is 63.48% which indicates that listed firms in Mauritius are highly geared since they have a leverage ratio greater than 50% on average. Additionally, these firms are less likely to encounter liquidity issues given that on average the liquidity ratio is 2.64:1. These firms also experienced an average growth rate of 3.73% over the period 2007 to 2017.

In the first instance, Pooled cross-sectional OLS has been used to process the regression model and its results are shown in table 2. The total number of firm year observations is 312.

Table 2. Results of Pooled cross-sectional OLS

Variable	Coefficient	Std. Error	t-Statistic	Probability
INTERCEPT	0.344370	0.039965	8.616773	0.0000
LEVERAGE	0.289328	0.000402	720.2182	0.0000
SIZE	-0.048557	0.005892	-8.241427	0.0000
LIQUIDITY	0.000677	0.000572	1.185304	0.2368
GROWTH	-2.74E-05	6.61E-05	-0.414881	0.6785
Adjusted R-squared	0.999423			
F-statistic	134680.8***			

***denotes significance at 1%

The core problem with Pooled cross-sectional OLS is that it discards the characteristics of heterogeneity and uniqueness of data sets. It does not take into account differences that may eventually exist among the sample of 34 listed firms. As such the fixed effect and the random effect models are preferred. The Hausman test has been conducted to determine whether the fixed effect or the random effect should be used. The results of the Hausman test indicated that the fixed effect is appropriate at 10% significance level. This is because the p-value of the Hausman test was 0.0000 which is lower than 10%. The following table illustrates the results of the fixed effect.

Table 3. Results of Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Probability
INTERCEPT	0.490005	0.200002	2.449997	0.0149
LEVERAGE	0.289240	0.000583	496.2207	0.0000
SIZE	-0.070100	0.029778	-2.354076	0.0193
LIQUIDITY	0.000134	0.000552	0.243441	0.8078
GROWTH	1.07E-05	5.19E-05	0.206912	0.8362
Adjusted R-squared	0.999683			
F-statistic	26491.27***			

***denotes significance at 1%

Table 3 demonstrates that at 10% significance level, financial leverage and firm size have a significant relationship with ROA given that their respective p-values are 0.0000 and 0.0193 which are below 10%. Given the positive coefficient of 0.289240 for financial leverage, the latter has a significant and positive link with ROA. Conversely, firm size has a negative coefficient of 0.070100 which indicates that firm size has a significant and negative relationship with ROA. However, the findings of the study also show that liquidity and growth opportunities have probability values of 0.8078 and 0.8362 respectively. Since their p-values exceed 10%, it is concluded that there is no significant relationship between ROA and liquidity and between ROA and growth opportunities of a Mauritian listed firm.

4.2 Discussion

Following the fixed effect model results from Table 3, there is a significant positive relationship between profitability and leverage of Mauritian listed firms. This shows that the higher the level of financial leverage of a Mauritian listed firm, the higher is its profitability level. The findings of this study uphold the empirical works of Yoon and Jang (2005), Akhtar et al. (2012) and Eckbo and Kissler (2018) amongst others. However, this result is not consistent with the studies of Kester (1986), Rajan and Zingales (1995), Abor (2005) and Pradhan and Khadka (2017) amongst others who documented a negative association between financial leverage and profitability. The result of this study is also not consistent with Kebewar (2012) and Yegon (2014) who documented a non-significant association between financial leverage and profitability.

The results of this can be explained through the trade-off theory. Based on the trade off theory it may be inferred that companies listed on SEM actually benefit from the tax shield advantage

when paying corporation taxes. Listed companies on SEM may have achieved or may be moving towards the optimal debt ratio because at such a point there is maximization of firm's value. Given the value of a firm is computed as the level of earnings generated by the firm, hence at the optimal debt ratio, the firm is the most profitable. Companies in Mauritius, as a result of taking increasingly higher debts, bear the consequences of higher interest costs and also benefits from interest tax shields. This means that the more highly geared firms are, the more interests are paid. As a result Mauritian listed firms may benefit more from interest tax shields such that profits increase. This may explain the positive link between profitability and financial leverage of Mauritian listed firms.

Jensen and Meckling (1986) have also shed light upon the explanation behind the positive association between profitability and debt through the Agency theory. If viewed in the context of Mauritius, companies listed on SEM encounter the agency problem. This is known to be challenges faced between the principal and the agents. Owners of these listed companies, who are the ordinary shareholders (principal) appoint managers or board of directors (agents) to take decisions on their behalf and equally for the efficient and effective running of the firm.

However, the issue that arises is that the agents may instead act in their self-interests. When companies take more debt, the latter may find themselves trapped in a situation of elevated risk of bankruptcy. With the fear that managers may lose their jobs if their firms go bankrupt, managers are compelled to run companies profitably so as to be successful in meeting the firms' obligations and in particular their debt obligation. Hence in light with the agency theory, it can be deduced that the more debt a Mauritian listed firm takes, the more profitable it is likely to be. This positive relationship between profitability and financial leverage in the Mauritian context is thus explained by the agency theory.

The explanation of the positive link between financial leverage and profitability can as well be clarified using the Modigliani and Miller (1963) theory. Given that Mauritian companies can benefit from interest tax shield effect resulting from issuing more debts, this will impact on the WACC of the listed firms. The WACC will start to drop thereby leading to the value of the firm to increase. Firms' value will grow and subsequently raising profitability levels only when the companies opt to operate at a point before or at the optimal capital structure.

The result of this study is consistent with the trade off theory, agency theory and Modigliani-Miller (1963) theory but not with the pecking order theory. According to the pecking order theory, there is an order through which companies will normally have their organizations financed; first and foremost, through internal financing, that is retained earnings and afterwards through external funding. The pecking order theory advocates that the more profit-generating firms are, the less likely they will issue debt. This is because they will use their retained earnings first. Mauritian listed firms may not have followed the pecking order theory. Profitable Mauritian listed firms having high retained earnings may have chosen not to diminish all of their internal funds and therefore took debt to fund massive projects and corporate activities instead. In addition less profitable Mauritian listed firms may not be able to seek debt finance to finance their project from banks.

The findings of the study reveal that profitability and firm size are significantly and negatively

associated. The findings of this study corroborate with Shepherd (1972) and Schneider (1991) who argued that the bigger the companies are, the lower the level of profitability is. However, the findings of this research are not consistent with those of Rajan and Zingales (1995) and Voulgaris and Lemonakis (2014) who found a positive link between firm size and profitability. The results of this research reveal no significant association between liquidity and profitability of Mauritian listed firms. This research also reveals no significant association between growth and profitability of a Mauritian listed firm.

5. Conclusion and Recommendations

The objective of this study is to examine the relationship between financial leverage and profitability of Mauritian listed companies. Data was collected from a sample of 34 Mauritian listed firms for the period 2007 to 2017 with a total of 312 firm year observations. The findings of this research reveal a significant positive link between profitability and financial leverage of Mauritian listed companies. This positive relationship corroborates with the Modigliani & Miller (1963) theory, the trade-off theory and the agency theory. This therefore demonstrates that Mauritian listed companies actually take advantage of the tax-shield from taking more debt leading to lower WACC and higher profitability and firm value. Moreover managers are bound to run companies profitably so as to avoid losing their jobs if their firms go bankrupt due to non-settlement of debt obligation. This is another reason for the positive link between profitability and financial leverage. Based on the results of this study, financial leverage contributes positively towards profitability of Mauritian listed firms. Hence firms are encouraged to increase their financial leverage. However firms must not go beyond the optimal capital structure because they will start experiencing costs of financial distress. It is advisable for firms to increase their financial leverage up to their optimal capital structure level. Companies can issue attractive debentures to its investors to raise debt finance. Another way of boosting the level of debt in listed companies is through the central bank of Mauritius (Bank of Mauritius). If the Bank of Mauritius lowers the Repo rate, then commercial banks may subsequently reduce their lending rate thereby encouraging listed firms to take additional debt. Given that financial leverage positively influence profitability, the relevant regulatory body in Mauritius can encourage companies to increase their financial leverage up to their optimal capital structure. This study contributes to existing literature in developing economies and small island economies on the association between financial leverage and profitability. The limitation of this study is that it focuses on listed Mauritian firms only and the period of study is limited to 2007 to 2017. Future research can concentrate on both listed and non-listed firms. Also, future research can investigate a larger period of study by considering the influence of other drivers of profitability such as corporate governance and corporate social responsibility.

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