

## Capital structure and firm performance: evidence from an emerging economy

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### Key Words

Capital Structure, Firm Performance, Panel Data, SEM

### Abstract

*This paper seeks to empirically assess the impact of capital structure on performance of Mauritian firms listed on the Official Market of the Stock Exchange of Mauritius (SEM) for the period 2005-2011. The study employs both static and dynamic panel data techniques to identify the determinants of firm performance. Robust static panel data techniques are employed to account for the effect of heteroskedasticity and to improve the accuracy of the regression coefficients. Dynamic panel analysis is adopted to capture any effect of endogeneity and to check the robustness of the results obtained using the static panel models. The results indicate that the main determinants of firm performance are capital structure, firm size, business risk, MUR/EUR exchange rate and MUR/USD exchange rate. Growth opportunities, free cash flow, age of the firm and price of oil are found to have insignificant influence on firm performance. Firm performance is observed to be negatively related to capital structure indicating that firms with lower leverage have better performance thereby supporting the pecking order theory.*

### Introduction

Capital structure decision is one of the three decisions, alongside investment and dividend policy, which financial managers have to make with the objective of maximizing the value of the firm (Karadeniz et al., 2009). The capital structure decision is not easy because it requires selecting between debt and equity securities while taking into consideration the different costs and benefits that are associated with these securities. A wrong decision in the portioning of the securities may lead the firm to financial distress and eventually to bankruptcy (Sheikh and Wang, 2011).

Although there are several empirical studies investigating the determinants of capital structure, however only a few empirical works have focused on the extent to which capital structure affects firm performance. Moreover, these few studies were mainly based on developed countries with scant evidences from less developed and emerging economies. Indeed, given that the stock markets in the emerging countries are less efficient and incomplete due to higher information asymmetry, it is believed that investigation of the capital- firm performance hypothesis, for the emerging countries will be of value added to the literature.

The aim of this study is thus to determine the impact of capital structure on firm performance for Mauritius, an emerging economy in the African region. Mauritius provides a good case study given its impressive economic progress during the last decades, particularly due to very high performing private sector firms. More so, the ownership concentration ratio in

Mauritius is not as dispersed as in other developed economies and therefore the study of firms listed on the SEM is expected to give different results.

Given the dynamic nature of financial performance, an element often ignored by the literature, this empirical work innovatively uses both static and dynamic panel framework, namely the Generalised Methods of Moments, to investigate the hypothesized link for 33 firms listed on the Stock Exchange of Mauritius for the period 2005-2011.

## **Methodology and analysis**

### **Econometric model for firm performance**

In order to determine the impact of capital structure on firm's performance, it is required to develop an econometric model for firm performance with capital structure and other factors that can potentially affect the firm's performance as the independent variables. This section details the econometric model for firm's performance.

The firm's performance is measured by return on assets (ROA) and the return on equity (ROE). ROA reflects the overall performance of the firm and the total earning of the firms, which accrues to the shareholders and debtholders whereas ROE reflects the performance from the perspective of the shareholders only. ROA has been used by Abor (2007), Ehikioya (2007) and Ebaid (2009) to measure firm performance while ROE has been used by Abor (2005).

### **Factors to be assessed as determinants of firm performance**

#### **Capital structure**

Capital structure measures the level of debt in the financing structure of a firm and is usually measured by the total liabilities to total asset ratio. The agency cost theory contends that profitable firms would issue more debt with the objective of controlling the actions of managers who are tempted to undertake unnecessary expenses. The need to compromise between the benefit of the income tax shield and the increased bankruptcy risk as emphasized by the trade-off theory is less for a profitable firm. The agency cost and trade-off theory suggest a positive relationship between capital structure and firm performance. On the other hand, the pecking order theory put forward that profitable firms dispose of sufficient retained earnings to finance part of their investment requirement and rely less on debt thereby suggesting a negative relationship between capital structure and firm performance. The relationship between capital structure and firm performance is ambiguous from the theoretical models. Abor (2005), Kyereboah-Coleman (2007), Ebaid (2009) and Isshaq (2009) have tested for capital structure as a potential determinant of firm's performance.

#### **Size**

Large firm usually adopts a diversification strategy by extending their operations to new related and unrelated fields. It is expected that the performance of the firm in a given sector would be affected by a specific set of factors and that the set of factors would differ across the sectors. Diversification leads to a reduction in the unsystematic risk and lower income variability such that large firms are expected to show better performance. In addition, large firm can afford to explore new horizon without significant impact on the overall performance and financial stability of the firm and are in a better position to benefit from market opportunities. Abor (2005), Abor (2007), Kyereboah-Coleman (2007), Ehikioya (2007) and Ebaid (2009) have tested for firm size as a potential determinant of firm performance.

**Business risk**

Risk is the measure of the variability of return. The variability attributable to factors that affect all securities is termed as the systematic risk whereas the variability attributable to factors that affect specific securities depending on the particularities of the business is termed as the unsystematic risk. The Capital Asset Pricing Model (CAPM) purports that the market would compensate investors for bearing systematic risk only because it is always possible to reduce the unsystematic risk by holding the security as part of a well-diversified portfolio. The systematic risk for a security is measured by its beta, which is the ratio of the security systematic risk to the market risk.

$$E(R_j) = r_f + \beta_j [E(R_M) - r_f]$$

$R_j$  is a firm's  $j$  return,  $r_f$  the risk free rate,  $\beta_j$  the firm Beta,  $E(R_M)$  is the market return

Business risk is related to changes in the economic conditions and environment within which the firm operates and translates into volatility of the firm's revenues, expenses and earnings. Firm performance is expected to be positively related to business risk. Kyereboah-Coleman (2007), Ehikioya (2007) and Isshaq (2009) have tested for business risk as a potential determinant of firm performance.

**Age**

Older firms are expected to have higher capacity to maintain customer base and fidelity, explore new sectors and markets (diversification strategy) and initiate appropriate measures in the event of contingencies such that the firm's performance is expected to be positively related to age of the firm. Kyereboah-Coleman (2007) and Ehikioya (2007) have tested for firm's age as a potential determinant of firm performance.

**Free cash flow**

From the perspective of the agency cost theory, the owner-manager conflict would result in managers preferring to use the available cash to undertake projects that are not necessarily in the interest of the shareholders rather than distributing this cash to the shareholders as dividends. Investing in unfavourable projects leads to future loss for the shareholders thereby suggesting a negative relationship between the firm's performance and cash holding. From the perspective of the pecking order theory, high cash holding (retained earnings) would mean that management can raise finance for future projects using more of the firm's own internal funds which has the lowest cost, lower the weighted cost of capital and leads to higher future return for the shareholders. The relationship between firm performance and free cash flow is ambiguous given that the agency cost theory suggests a negative relationship while the pecking order theory suggests a positive relationship.

**Growth opportunities**

Firms having more opportunities for growth are expected to undertake more profitable investment and achieve higher performance. Abor (2005, 2007) have tested for growth opportunities as a determinant of firm performance.

**Economic factors to be assessed as determinants of firm performance**

The economic factors such as foreign exchange rates and price of oil are expected to impact on the performance and profitability of the Mauritian firms. In particular the Mauritian Rupee to Euro exchange rate would affect the revenue of the tourism and manufacturing sectors while the Mauritian Rupee to US Dollar exchange rate would affect the cost of sales for the

manufacturing industry. The inclusion of the MUR/EUR exchange rate, MUR/USD exchange rate and price of oil as potential determinants of firm performance in Mauritius is justified.

### Specification of the model

Firm performance is viewed as dependent on a set of factors and the econometric model for firm performance is expressed in analytical form next.

#### *Firm performance*

= *function(Capital structure, Size, Business risk, Growth opportunity, Age, Free Cash Flow, Rupee to Euro exchange rate, Rupee to USD exchange rate, Price of oil)*

The econometric model is expressed in mathematical form as follows:

$$PER_{it} = \alpha + \alpha_1 BTLR_{it} + \alpha_2 SIZE_{it} + \alpha_3 BR_{it} + \alpha_4 GO_{it} + \alpha_5 AGE_{it} + \alpha_6 FCF_{it} + \alpha_7 MUR/EUR_{it} + \alpha_8 MUR/USD_{it} + \alpha_9 Price\_oil_{it} + \mu_{it}$$

### Definition of measuring indices for firm performance and its potential determinants

Firm performance is measured using return on assets (ROA) and return on equity (ROE). Capital structure is measured by the book total liabilities ratio expressed in percentage for scaling requirement. Size is measured as the natural logarithms of total sales, business risk as the standard deviation of return on asset and growth opportunities as percentage increase in the total assets. The firm's age is measured as the natural logarithm of the number of years since the incorporation of the firm and free cash flow is measured using the retention ratio as proxy. The foreign exchange rates and price of oil are the natural logarithms of the respective values expressed in Mauritian Rupee (MUR) term.

### Proposed sample and data collection

The data collection technique employed for this study is secondary research and involves the collection of accounting and economic data. The firms listed on the Official Market of the SEM are the candidates under study, given that these large firms adopt a mix of equity and debt in their capital structure and release more information to the public which make it easier to have access to data for the research. Accounting data are obtained from the balance sheet, profit and loss account and other financial statements published in the annual reports of the companies listed on the SEM Official Market. Data pertaining to corporate tax rate are obtained from the annual budget speeches. The study employs panel data given that the data varies across two dimensions namely the firm and time with the increased sample size considered as more appropriate to study the dynamics of change (Sheikh and Wang, 2011). Effort has been made to cover a maximum of the firms listed on the SEM Official Market with focus on the time horizon 2005-2011 with the result that 33 firms were considered with a total of 231 observations. It is noted that the panel data set is unbalanced in that data are not available for some years of the time horizon 2005-2011 for a number of firms.

### Dynamic time series analysis

Given the possibility of endogeneity of the explanatory variables and thus the loss of dynamic information might still exist even in panel data framework. Indeed firm performance is of dynamic nature and should be modeled as such (see Gaud et al 2005). In fact, Wintoki et al. (2009) identifies dynamic endogeneity whereby the firm's observable characteristics are likely to be dynamic such that a firm's current actions will affect its control environment and future

performance, which will itself affect the firm's future actions (Wintoki et al., 2009). It is noted that OLS may be biased because it ignores unobservable heterogeneity and fixed-effects estimation may be biased because it ignores dynamic endogeneity. The dynamic panel GMM estimator has the advantage of eliminating bias by ignoring dynamic endogeneity and accounting for simultaneity while eliminating any unobservable heterogeneity. It is important to assess the robustness of the results and their sensitivity to model selection with particular attention to the inclusion of panel dynamics. It is recognized that it is possible to lose dynamic information in panel data framework in the presence of endogeneity of the independent variables. The Ordinary Least Square (OLS) method is not suitable for the regression analysis because the lagged dependent variable might be endogenous to the error terms through  $u_{i,t-1}$  leading to a problem of endogeneity. The first step GMM estimator is used since it has been shown to result in more reliable inferences. The first-step GMM estimator is preferred to the second-step GMM estimator, which has been found to have a downward bias (Seetanah et al. 2007).

## Analysis

### Pairwise correlation test for firm performance

An analysis of the correlation coefficients for the pairs of variables indicates that the variables are weakly related. The correlation coefficient between return on asset (ROA) and return on equity (ROE) is 0.70 and significant at 1%. The correlation is weak and indicates that the variables are not equivalent to measure the firm's performance. Indeed, the return on asset captures the overall performance of the firm which accrues to both the shareholders and debtholders while the return on equity captures the performance from the perspective of the shareholder only. All the independent variables that are initially identified for the study of the firm's performance are retained in the econometric model.

Often ignored in the literature, the Im, Pesaran, and Shin (1995) panel unit root tests are applied on the dependent and independent variables. Im, Pesaran, and Shin (1995) developed a panel unit root test for the joint null hypothesis that every time series in the panel is non-stationary. This approach is based on the average of individual series ADF test and has a standard normal distribution once adjusted in a particular manner. Results of this test applied on our time series in levels reject a unit root in favor of stationarity (the results were also confirmed by the Fisher-ADF and Fisher-PP panel unit root tests) at the 5 percent significance level for each variable. It was judged safe to continue with the panel data estimates of the above econometric specifications.

The Hausman specification test is employed to determine which of the fixed-effects model and random-effects model best explains the observations. The random-effects model is retained if the null hypothesis suggesting that there is no systematic difference between the models is accepted at a significance level of 10%. The Hausman specification test recommends the adoption of the random-effects model for the sample of all firms and the fixed-effects models for the sub-samples of non-financial firms and financial firms with firm performance measured by return on asset. The Hausman specification test recommends the adoption of the fixed-effects model for the sample of all firms, non-financial firms and financial firms with firm performance measured by the return on equity.

## Static panel data analysis and interpretation of results

It is required to cater for the effects of heteroskedasticity whereby sub-populations have different variability than others through the adoption of heteroskedastic-robust panel data estimates. The results of the robust static panel data estimates are shown at Table 1.

***Insert Table 1: Results of robust static panel data analysis for firm performance***

Parameter	Return on Asset			Return on Equity		
	All firms	Non-Financial firms	Financial firms	All firms	Non-Financial firms	Financial firms
	Random-effects	Fixed-effects	Fixed-effects	Fixed-effects	Fixed-effects	Fixed-effects
BTLR	-0.0735 (-6.38)***	-0.1731 (-3.71)***	-0.0530 (-1.82)*	-0.17947 (-1.19)	-0.3502 (-1.70)*	-0.0694 (-0.64)
Size	0.8226 (3.65)***	1.0387 (1.83)*	1.9755 (2.31)**	3.7410 (2.99)***	2.7877 (2.21)**	11.4969 (4.44)***
Growth	-0.0132 (-1.03)	-0.0007 (-0.02)	-0.0412 (-1.29)	0.0225 (0.45)	0.0642 (0.81)	-0.0558 (-0.78)
Risk	0.5230 (3.39)***	0.0239 (0.08)	1.3986 (4.89)***	0.2065 (0.18)	-1.1040 (-0.96)	1.5055 (1.17)
Age	-0.4105 (-0.65)	0.0548 (0.04)	-4.2974 (-2.09)**	-7.2931 (-2.05)**	-3.1838 (-0.74)	-11.2327 (-1.05)
Free cash flow	0.0103 (1.79)*	0.0196 (1.20)	0.0251 (2.13)**	0.0073 (0.23)	0.0085 (0.34)	-0.0149 (-0.22)
EUR/MUR exchange rate	8.4559 (2.05)**	16.774 (2.52)***	3.8416 (0.81)	5.3688 (0.28)	4.9495 (0.23)	6.896437 (0.58)
USD/MUR exchange rate	-16.5673 (-3.03)***	-41.6022 (-3.43)***	-2.8800 (-0.40)	-59.1158 (-2.46)***	-79.7614 (-2.58)***	-0.8863 (-0.03)
Price of oil	-1.5604 (-1.79)*	-2.9303 (-1.19)	-0.8199 (-0.61)	1.1943 (0.21)	2.0531 (0.29)	-4.5305 (-1.07)
Constant	28.9327 (2.09)**	93.6138 (2.36)**	-20.1768 (-0.90)	141.2639 (1.16)	220.3876 (0.29)	-166.3555 (-1.21)
Number of observations	233	162	71	233	162	71
R-squared	0.1497	0.1921	0.3251	0.0755	0.1072	0.4361

The values in bracket correspond to the z-statistic and \*, \*\* and \*\*\* indicates significance at the 10%, 5% and 1% levels respectively

The regression coefficients using return on asset as a measure of firm performance are similar to those using the return on equity as the measure of firm performance as far as the sign of the coefficients are concerned on the overall. Regression coefficients using return on asset have higher statistical significance and shall be adopted for the analysis.

### **Capital structure**

There is a negative relationship (significant at 1%) between the firm's performance and capital structure for the sub-sample of non-financial firms and a negative relationship (significant at 10%) for the financial firms. The results suggests that firms with lower leverage performs better thereby supporting the pecking order theory from the point of view that profitable firms use their earnings to finance their new projects and in so doing reduce their level of debt. The results are consistent with Abor (2005) and Ebaid (2009) who reported a negative relationship between firm performance and capital structure.

**Size**

There is a positive relationship between the firm's performance and the firm's size with the significance levels being 1%, 10% and 5% for the sample of all firms, sub-sample of non-financial firms and sub-sample of financial firms respectively. The proposed explanation is that large firms have diversified activities, carry lower levels of unsystematic risk and are subject to lower variability in cash flow such that they are in a better position to explore profitable opportunities, have positive earning and make profit on a sustained basis. The results are consistent with the findings of Abor (2005) and Ehikioya (2007) who also reported a positive relationship between firm performance and firm size.

**Growth opportunities**

There is a weak negative relationship between firm performance and growth opportunities for the non-financial firms and the financial firms. This is indicative of the Mauritian firms having used up all of the economies of scale and need to expand to meet the demand and increase their market share even if this leads to reduced profitability. The results differ from those of Abor (2005, 2007) who reported a positive relationship between firm performance and growth opportunities suggesting that the pursuit of a growth strategy leads to higher profitability.

**Business risk**

There is a highly positive relationship between firm performance and business risk for the sub-sample of financial firms while a weak positive relationship is observed for the non-financial firms. The observations are in line with the Capital Asset Pricing Model (CAPM) that postulates investors are compensated for bearing systematic risk with the risk premium being proportional to the amount of systematic risk borne and measured by the security's beta. It is observed that the higher the level of risk borne, the higher is the return on asset and the better is the firm's performance.

The results are different from Ehikioya (2007) and Isshaq (2009) who reported a negative relationship between firm performance and business risk. The proposed explanation is that the Mauritian private firms are known to be very careful and risk-adverse in their undertakings that lead them to embrace profitable projects on a sustainable basis and firm performance to be positively related to business risk.

**Age**

A weak positive relationship is observed between the firm's performance and age for the non-financial firms and a negative relationship (significant at 5%) is observed for the financial firms. The result is in line with Kyerboah-Coleman (2007) and opposite to Ehikioya (2007) who reported a positive relationship. The proposed explanation is that many of the financial firms are rather young companies that have entered sectors that were not fully developed and explored and have been able to earn high profitability in their endeavours.

**Free Cash Flow**

A positive relationship is observed between firm performance and free cash flow proxied as the retention ratio for the financial firms (significant at 5%) while a weak positive relationship is observed for the non-financial firms. Considering that a high retention ratio is associated with higher retained earning and free cash flow, it is deduced that firms with higher free cash flow performs better. This is indicative of the tendency of the firm's management to work in the interest of the shareholders and that the owner-manager conflict is not pronounced for the firms listed on the SEM Official Market. The result supports that the objectives of management and shareholders tend to coincide for the Mauritian firms.

**EUR/MUR exchange rate**

A positive relationship is observed between the firm's performance and the MUR/EUR exchange rate for the sub-sample of non-financial firms (significant at 1%) and a weak positive relationship is observed for the sub-sample of financial firms. The explanation put forward is that the hotels and manufacturing firms that form part of the non-financial sample receive payment for their services and products in Euro such that their profitability would be increased if one Euro obtained is exchanged for a higher amount of Mauritian rupees. The result reflects the fact that the Mauritian exporting firms, which are predominantly non-financial firms have their activities largely centered on the Euro zone and are adversely affected by the depreciation of the Mauritian Rupee vis-à-vis the Euro.

#### **MUR/USD exchange rate**

A highly significant negative relationship is observed between the firm's performance and the MUR/USD exchange rate for the sub-sample of non-financial firms and a weak negative relationship is observed for the sub-sample of financial firms. The explanation put forward is that the manufacturing firms that form part of the non-financial sample import a significant amount of their inputs and effect payments in US dollars such that an increase in the MUR/USD exchange rate implies higher cost of production and lower profitability for the firms. The result reflects the fact that the Mauritian manufacturing firms are largely dependent on foreign countries for the procurement of raw materials and input.

#### **Price of oil**

The relationship between the firm's performance and the price of oil is weak and negative for the non-financial firms and the financial firms suggesting that the price of oil does not have a significant impact on the profitability of the non-financial firms. The proposed explanation is that the impact of the price of oil on the cost of production can be absorbed through an increase in the price of the product offered.

### **Dynamic panel data estimates for firm performance**

The explanatory variables retained as being endogenous are capital structure, size and growth while the other explanatory variables are considered as being strictly exogeneous. The result of the Arellano-Bond (1991) first step GMM estimator is given in the Table 2 using the return on asset as the measure of firm performance.

*Insert Table 2: Results of dynamic panel analysis for firm performance*

	Return on Asset		
	All firms	Non-financial	Financial
ROA lag (1)	-0.0700 (-0.25)	-0.1012 (-0.80)	-0.3375* (-2.10)
Δ BTLR	-0.12026 (-1.47)	-0.2102*** (-2.77)	-0.1674 (-1.49)
Δ Size	6.4893 (1.59)	3.2800* (1.68)	7.9332* (1.78)
Δ Risk	1.1570** (2.17)	0.0676 (0.14)	1.6946** (2.29)
Δ Growth	-0.0155 (-0.38)	0.0208 (0.74)	-0.1280* (-2.11)
Δ Age	-11.3744 (-1.38)	-4.1172 (-1.13)	-15.4895 (-1.62)
ΔRetention	0.0063 (0.37)	0.0147 (1.05)	0.0133 (0.84)
ΔRupee to Euro	16.4863*	18.6068**	-6.6301



	(1.77)	(2.38)	(-0.51)
$\Delta$ Rupee to USD	-30.5200 (-2.98) <sup>***</sup>	-35.1278 (-3.07) <sup>***</sup>	19.0910 (1.00)
$\Delta$ Price of oil	-2.1151 (-1.20)	-2.8657 (-1.29)	1.4280 (0.51)
$\Delta$ Constant	-27.3895 (-0.67)	34.1452 (0.86)	-150.3404* (-1.82)
Number of observations	199	138	61
Number of instruments	16	16	16
Number of groups	33	23	10
Arellano-Bond test for AR(1) in first differences	Z=-1.25 Pr>z = 0.211	Z=-1.93 Pr>z = 0.053	Z=0.07 Pr>z = 0.941
Arellano-Bond test for AR(2) in first differences	Z=0.35 Pr>z = 0.726	Z=0.29 Pr>z = 0.774	Z=1.12 Pr>z = 0.264
Sargan test for overidentification	Chi2=25.39 Prob>Chi2=0.000	Chi2=12.42 Prob>Chi2=0.029	Chi2=26.15 Prob>Chi2=0.000
Hansen test for overidentification	Chi2=8.10 Prob>Chi2=0.151	Chi2=6.08 Prob>Chi2=0.298	Chi2=0 Prob>Chi2=1

The values in bracket correspond to the z-statistic and \*, \*\*, \*\*\* indicates significance at the 10%, 5% and 1% levels respectively

The Sargan test of overidentification is passed suggesting that there is no overidentification and model misspecification. The Arellano-Bond autocorrelation tests are satisfied suggesting that there is no autocorrelation with the error terms. The results of the dynamic time series analysis supports those reported using the static panel data techniques in that the sign of the regression coefficients are similar even though there is a reduction in the level of statistical significance.

It is reported that there is no statistically significant relationship between the present performance of a firm and its performance for the previous year. This indicates that there is no significant influence of the previous year performance on the performance of the current year and that indeed, it is the statistically significant determinants of firm performance namely capital structure, firm size, business risk, MUR/EUR exchange rate and MUR/USD exchange rate that would affect the present performance of the firm. It is noteworthy that the results obtained using ROE as measure of firm performance consistent with those reported using ROA as measure of firm performance.

## Conclusions

This paper dealt with the identification of the determinants firm performance and considered 33 firms listed on the Official Market of the Stock Exchange of Mauritius (SEM) over the time period 2005-2011. The study employs both static and dynamic panel data framework to identify the determinants firm performance.

There are limited empirical studies on the determinants of firm performance worldwide and none for Mauritius according to the author's knowledge. The present empirical research on the firm's performance tried to identify firm-specific and economic factors that affect the performance of the firms listed on the SEM Official Market. Firm size, business risk and MUR/EUR exchange rate are found to positively influence the firm's performance while capital structure and MUR/USD exchange rate are found to negatively influence the firm's performance. Growth opportunities, free cash flow, age of the firm and price of oil do not have

significant impact on firm's performance. The firm's performance using return on asset and return on equity are negatively related to the capital structure and indicate that firms with lower leverage have better performance thereby supporting the pecking order theory. The positive relationship between firm performance and free cash flow indicates that there is no shareholder-manager conflict for the Mauritian firms. The positive relationship between performance and the MUR/EUR exchange rate illustrates the dependence of the Mauritian firms on the Euro zone for their markets and the lack of a market diversification strategy. The negative relationship between performance and the MUR/USD exchange rate illustrates the dependence of the Mauritian firms on foreign countries to procure the raw materials needed in their production process. The dynamic panel data framework indicates that the past performance of a firm do not have a significant influence on its present performance and confirms the influence of the potential determinants on the firm's performance reported using the static panel data analysis.

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## APPENDIX

Table A.1: Evolution of gross domestic product and market capitalization over the period 1989 to 2011

YEAR	GDP at current market price (Rs millions)	Market capitalisation at end of period (Rs billions)	Domestic credit to the private sector as a percentage of GDP (%)
1990	39,275	3.79	33.06
1995	70,283	27.82	47.02
2000	119,085	37.03	57.50
2005	185,355	80.04	75.28
2007	231,000	173.09	75.04
2008	263,889	109.30	84.76
2009	277,021	151.21	82.83
2010	289,910	178.00	87.81
2011	324,763	171.51	

Table A.2: Average capital structure and performance for the firms listed on the SEM Official Market

Year	All firms				Non-financial firms				Financial firms			
	BTLR	LTDR	ROA	ROE	BTLR	LTDR	ROA	ROE	BTLR	LTDR	ROA	ROE
2005	50.3	37.78	7.5	15.2	43.85	28.12	8.72	14.90	66.1	61.3	4.6	16.1
2006	47.3	33.99	5.8	12.4	41.61	24.67	6.16	11.23	60.1	55.0	5.1	15.2
2007	45.7	31.32	6.6	12.3	38.91	20.85	5.73	9.63	62.3	56.9	8.7	18.8
2008	48.5	32.33	8.8	17.5	42.40	22.54	7.89	13.92	64.2	57.4	11.3	26.6
2009	48.8	34.37	6.0	14.8	43.08	25.27	4.44	9.80	63.6	57.6	9.9	27.1
2010	47.5	33.75	5.4	11.6	40.83	23.70	3.72	6.38	63.9	58.3	9.5	24.2
2011	50.6	29.50	5.2	12.0	45.45	16.51	5.21	11.11	62.2	59.2	5.2	14.0

## IN-TEXT FIGURES AND TABLES



Figure1: Evolution of total market capitalization on the SEM Official Market

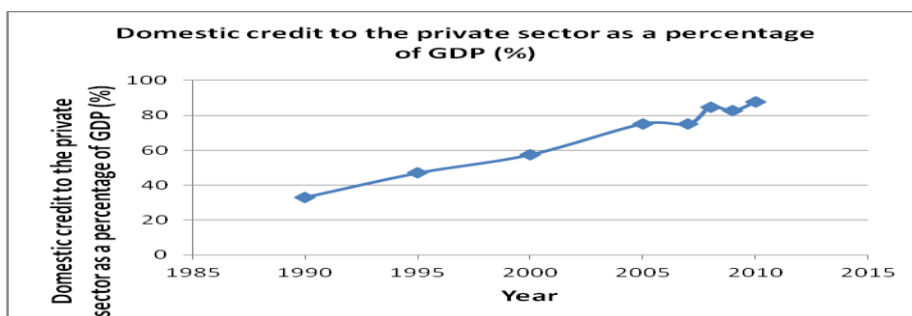


Figure 2: Evolution of the bank domestic credit as a percentage of GDP

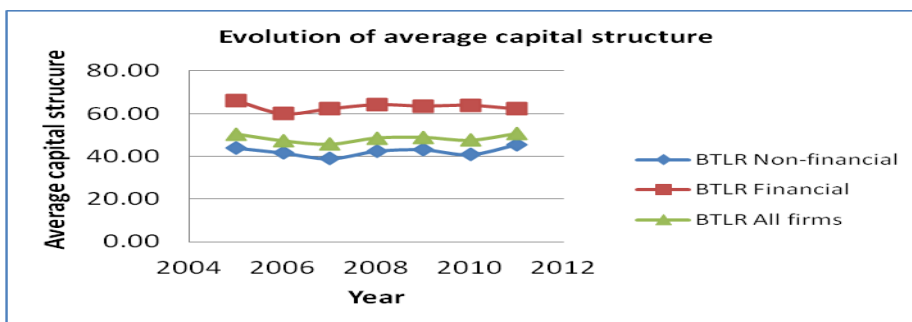


Figure 3: Evolution of the average capital structure for the Mauritian firms

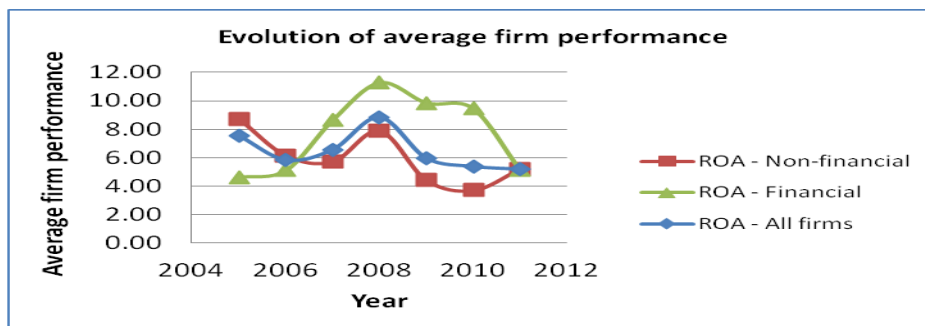


Figure 4: Evolution of the average performance for the Mauritian firms