Does Capital Structure Matter? The Influence of Capital Structure on Net Interest Margin: Evidence from Sri Lanka

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Abstract

Objectives of this study were to examine the capital structure pattern of Sri Lankan commercial banks and to investigate the influence of capital structure on net interest margin of commercial banks in Sri Lanka. This study was conducted with 10 licensed commercial banks which are listed in Colombo Stock Exchange (CSE), Sri Lanka. Panel data analysis was used to carry out the empirical study and data were extracted from the annual reports of selected companies for the ten years period from 2007 to 2016. Capital structure patterns of licensed commercial banks were measured by total debt to total assets ratio, long term debt to total assets ratio, and short term debt to total assets ratio. Net Interest Margin (NIM) was measured by net interest income to average earnings assets ratio. NIM specifies the cost and efficiency of financial intermediation by banks. Size of the banks and growth in banks deposit were considered as control variables. Descriptive statistics, correlation, pooled, fixed effect and random effect models were used for the data analysis. According to the descriptive statistics, present study found that commercial banks had lower leveraged capital structure pattern in Sri Lanka. F test was performed to diagnose the time fixed effect in the fixed effect model and outcome of the test revealed that p value was less than 0.05. Therefore, null hypothesis was rejected and fixed effect model was most appropriate than pooled OLS. Further, Lagrange Multiplier test for random effect was performed. The result indicated that the p value was 0.000 and rejected the null hypothesis in favor of the alternative which implied that random effect model was more appropriate than pooled OLS. Therefore,

Hausman Specification test was performed to find out whether fixed or random effect model is suitable to examine the relationship between capital structure and NIM. Fixed effect model was considered as the most suitable model to examine the influence of capital structure on NIM in this study. As per the result of fixed effect model, total debt to total assets ratio and long term debt to total asset ratio were significantly negatively related to NIM. Short term debt to total assets ratio, and size were not significantly related NIM. Results of the study suggest that financial managers should try to finance from retained earnings rather than relying heavily on debt capital in their capital structure. Outcome of the study may useful to the practitioners, investors and decision makers in order to maximize their return from their investments.

1. Introduction

Firm's capital structure can be defined as mix of debt and equity (Pandey, 2005).The capital structure choice has long been an issue of great interest in the corporate finance literature. Right form of the promotional stage up to end finances play an important role in firm's life. Capital structure theories deal with what is the optimum capital structure and guide to the maximum value of the firm. The overall cost of capital can be minimized by carefully mix up the debt and equity capital as well as maximize the shareholders wealth. The proportion of debt to equity is a most important strategic choice of corporate managers. The firm's capital structure is considered optimum when the market value of shares is maximized. If debt capital does not exists in the capital structure, the shareholders' return is equivalent to the firm's return. The financial leverage can be understood that the change in the shareholders' return caused by the change in the profits.

Commercial Banks play an significant role in providing modern financial services in the country and they are being major financial intermediary in the fund transfer system. Considerable and significant percentage of the total assets of financial system in Sri Lanka is accounted by Commercial Banks. As per the CSE's annual report in 2015, commercial banks play a major role in the economic welfare of the CSE. Capital structure pattern of banks plays a fundamental role in their financial performance, solvency position and their overall public creditability. Pahlavan, Asgari and Pahlavan, 2015 stated in their study that the ranking of companies regarding credibility is mostly dependent on their capital structure. 'Managers in Banks believed as agent of stockholders and people therefore, they should constantly attempt to regulate the bank's capital structure in order to minimize the cost of bank capital and maximize the profitability' (Bose, 2002,p.9). Literature reported that most of the bank investors trust that a constant interest guarantees higher profit payments in comparison to fluctuating interests (Pahlavan et al., 2015). Fluctuation on interest rates is regarded as most important risk measure for investors in banks. Awadhi and Hamdi (2012) stated that NIM specifies the cost and efficiency of financial intermediation by banks. Banking sector in Sri Lanka mainly focus on conventional business model. Banks depend on owners' capital as well developed equity market in Sri Lanka. Further, it is the easy way to raise the funds to run the business compared to the debt financing in developing countries like Sri Lanka. Due to the several reasons such as few corporate entities in the market, offering corporate bonds is expensive and less infrastructure facilities, debt market in Sri Lanka is still under the development stage. Therefore, banks prefer to go for equity capital to finance their activities.

There are several researches carried out at a worldwide to study the relationship between capital structure and performance of banks. For example, Gebremichael (2016) conducted a study to examine the impact of capital structure on profitability of commercial banks of Ethiopia. Results of his study reported that there was a significant negative relationship between capital structure and NIM. Aymen (2013) investigated the impact of capital structure on financial performance of banks in Tunisia and found that capital structure significantly positively influenced return on equity and NIM. In addition, Taani (2013) evaluated the capital structure effects on banking performance in Jordan. The study of Marandu and Sibindi (2016) in South Africa revealed that there was a relationship between return on assets and

bank specific determinants of capital structure in terms of capital adequacy, size, credit risk and deposits. A study on the relationship between capital structure and bank performance in Sub-Sahara Africa was conducted by Anarfo in 2015. But results of this study indicated that capital structure does not determine bank performance. Further, Gohar and Rehman (2016) studied the impact of capital structure on bank performance in Pakistan. Findings of this study reported that there was a significant negative relationship between capital structure and performance. Similar studies were conducted by Allahham (2015) in Saudi Arabia and by Siddik, Kabiraj and Joghee (2017) in Bangladesh. It was hard to see the study on the relationship between capital structure and bank performance in Sri Lanka. Therefore, current study is to examine the capital structure pattern in Sri Lankan commercial banks and also to investigate the influence of capital structure patterns on NIM of commercial banks in Sri Lanka. Thus, current study is going to answer the following research question:

- *To what extent capital structure pattern influence on the Net Interest Margin of licensed commercial banks in Sri Lanka*?

2. Empirical studies on the relationship between capital structure and financial performance

A study on the effect of capital structure on the corporate profitability of the listed firms in Ghana conducted by Abor (2005). Capital structure was measured by short-term debt ratio, long-term debt ratio, and total debt ratio. Arbor (2005) reported significantly positive relationship between short term debt and profitability and negative association between long term debt and profitability. This implies that an increase in the long-term debt position is associated with a decrease in profitability. Yegon, Cheruiyot, Sang and Cheruiyot (2014) empirically investigated the relationship between capital structure and the firm's profitability of banking industry in Kenya, using panel data which were extracted from the financial statements of the companies listed on the Nairobi Stock Exchange for the nine years period from 2004. Findings were reported that short term debt had significant positive relationship with the profitability.

Fama and French (1998) argued that the use of excessive debt creates agency problems among shareholders and creditors, in turn, lead to negative relationship between leverage and profitability. Majumdar and Chhibber (1999), Gleason, Muthur and Muthur (2000), and Hammes (1998) found a negative effect of leverage on corporate profitability. Jensen (1986) reported that profitable firms might signal quality by leveraging up, resulting in a positive relation between leverage and profitability. Saeed, Gull and Rasheed (2013) assessed the impact of capital structure on the performance of banks in Pakistan for the 5 years period from 2007. They have found that a positive relationship between determinants of capital structure and performance of banking industry.

Ronoh and Ntoiti (2015) studied the effect of capital structure on financial performance of listed commercial banks in Kenya and found that there was a negative effect of capital structure on financial performance of commercial banks. Ramdan and Ramdan (2015) examined the effect of capital structure and financial performance on Jordanian companies and their findings suggested that negative effect of capital structure on return on assets were

observed in their study. The findings were contradicted with the findings of Al-Taani's study. Taani (2013) conducted a study to investigate the relationship between capital structure and profitability. However, results illustrated that there was no relationship between debt ratio and return on assets. Anyhow, this findings was consistent with the Ebaid's (2009) study which was evaluated the relationship between capital structure and performance based on the 64 firms in Egyptian companies during the period from 1997 - 2005.

Witowschi and Luca (2016) studied about bank capital, risk and performance in European banking. They have evaluated that in which ways capital influences on profitability of banks for 7 European Countries including Austria, Balgaria, Greece, Italy, Romania, the Netherlands and Hungary. Results of their study revealed that there was negative relationship between capital and risk, and also there was a significant positive relationship between capital and profitability.

Most recently, Siddik, Kabiraj and Joghee (2017) conducted a study to examine the impact of capital structure and financial performance of banks in Bangladesh. They have focused 22 banks for 10 years period from 2005. Return on assets, return on equity and earnings per share were considered as the performance measures. Capital structure was measures by short term debt to total assets ratio, long term debt to total assets ratio and total debt to total assets ratio. Results of their study illustrated that capital structure inversely affects the banks performance.

Lingesiya and Premkanth (2011) carried out a study on the impact of capital structure on financial performance of listed manufacturing companies in Sri Lanka. They have found that there was a significant negative relationship between capital structure and financial performance. Niranjini and Priya (2013) conducted a study to examine the impact of capital structure on financial performance of the listed manufacturing companies for the period from 2006 to 2010. Findings of their study suggested that there was a positive significant relationship between capital structure and financial performance of listed trading companies in Sri Lanka. Further, Nadeesha and Pieris (2014) conducted a study to investigate the impact of capital structure choice on firm performance in Sri Lanka with a 82 listed non financial firms during the period of 2011/2012. They have found that there was a positive relationship between debt to total assets and return on capital employed. Recently, Abewardhana and Magoro (2017) completed a study on debt capital and financial performance which was a comparative analysis of South African and Sri Lankan listed companies. Their findings of the study were, in case of Sri Lanka, debt financing in terms of short term debt had a negative impact on firm performance while long term debt had a positive impact.

Therefore, very few studies conducted to examine the impact of capital structure on NIM in Sri Lanka. As a result, this study is expected to give the geographical contribution on the capital structure pattern in Sri Lanka and its influence on NIM.

3. Methodology

3.1 Data collection

According to the annual report of the Central Bank of Sri Lanka (2016), currently, twenty five (25) Licensed Commercial Banks (LCB) and the seven (07) Licensed Specialized Banks

(LSB) are in Sri Lanka. At the end of 2016, the Licensed Commercial Banks dominated the financial system with a market share of 49 per cent of the entire financial system's assets and 84 per cent of the banking sector's assets. For this research, the data have been obtained from the annual reports and other financial statements of 10 randomly selected licensed commercial banks which includes two state banks and eight private banks from 2007 to 2016 based on the order in largest market capitalization.

3.2 Conceptualization

With the evidence of empirical review carried out in the current study, following conceptual model was formulated to answer the research question.

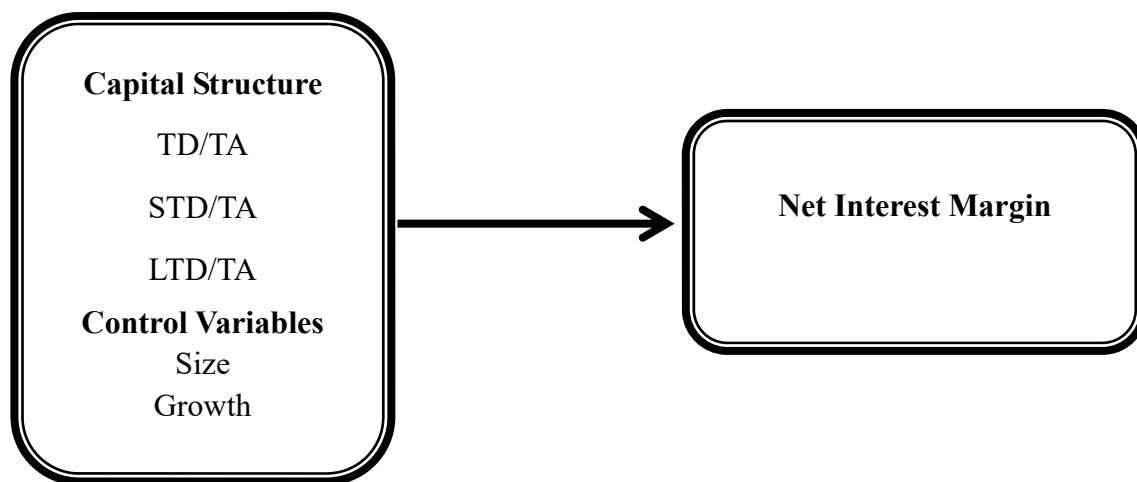
Figure 1. Conceptual model

Based on the research problem and objectives, following hypotheses have been formulated to carry out the empirical study:

3.3 Hypotheses

H_1: Sri Lankan commercial banks have lower leveraged capital structure

H_2: There is a significant relationship between total debt to total assets and Net Interest Margin

H_3: There is a significant relationship between long term debt to total asset and Net Interest Margin

H_4: There is a significant relationship between short term debt to total asset and Net Interest Margin

3.4 Models

The current study is performed the balanced panel data analysis as all the selected banks have measurements on selected variables in all 10 years study period (2007-2016). Therefore, panel data might have individual/ group effect, time effect or both, which can be analyzed by fixed effect or random effect model. Therefore, the present study considered the fixed and random effect models in addition to the pooled model to carry out the analysis.

i.   Pooled OLS models

Use of pooled OLS model is to analyze the impact of variable that are vary over time.

$$NIM_{it} = \alpha_0 + \alpha_1 SDTA_{it} + \alpha_2 LDTA_{it} + \alpha_3 TDTA_{it} + \alpha_4 SIZE_{it} + \alpha_5 GRO_{it} + \varepsilon_{it} \qquad (1)$$

ii.   Fixed Effect Models

Use of fixed effect model is to analyze the impact of variable that are vary over time.

$$NIM_{it} = \alpha_0 + \alpha_1 SDTA_{it} + \alpha_2 LDTA_{it} + \alpha_3 TDTA_{it} + \alpha_4 SIZE_{it} + \alpha_5 GRO_{it} + \varepsilon_{it} \qquad (2)$$

iii.   Random Effect Models

In the random effect variations across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model.

$$NIM_{it} = \alpha_0 + \alpha_1 SDTA_{it} + \alpha_2 LDTA_{it} + \alpha_3 TDTA_{it} + \alpha_4 SIZE_{it} + \alpha_5 GRO_{it} + u_{it} + \varepsilon_{it} \qquad (3)$$

In the equation,

$SDTA_{it}$ is short term debt divided by total assets of bank i at time t.

$LDTA_{it}$ is long term debt divided by total assets of bank i at time t.

$TDTA_{it}$ is total debt divided by total assets of bank i at time t.

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

GRO_{it} is changes in banks deposit

ε_{it}: Stochastic error term of firm i at time t

u_{it}: error term of firm i at time t

3.5 Relationship between capital structure and NIM

Using above models, relationship of short term debt, long term debt and total debt with the Net Interest Margin were studied keeping size and growth controlling variables.

4. Data analysis

4.1 Descriptive analysis

Table 4.1. Descriptive Statistics

	NIM	SDTA	LDTA	TDTA	SIZE	GROWTH
Mean	4.62	16.67	3.49	20.16	5.18	15.51
Median	4.50	11.30	3.05	15.65	5.30	10.50
Maximum	10.40	69.00	14.10	72.50	6.20	87.30
Minimum	0.00	0.50	0.20	3.10	4.00	1.50
Std. Dev.	1.90	16.69	2.53	16.72	0.54	15.53
Skewness	0.25	1.71	1.41	1.67	-0.47	2.93
Kurtosis	3.54	5.13	5.28	5.07	2.55	11.39
Jarque-Bera	6560.59	87.84	71.42	83.36	5.78	567.45
Probability	0.000	0.00	0.00	0.00	0.06	0.00
Sum	524.00	2166.72	453.50	2620.20	673.50	2015.70
Sum Sq. Dev.	940.14	35933.21	824.47	36062.90	37.58	31097.63
Observations	130	130	130	130	130	130

According to the table, mean value of NIM was 4.62. Value of NIM ranged from 0.00 to 10.40. Short term debt to total asset ratio ranged from 0.50 to 69.00 and mean value was 16.67 with the standard deviation of 16.69. Long term debt to total asset ratio had the mean value of 3.49 with the minimum value was 0.20 and maximum value was 14.10. Total debt to total assets ratio ranged from 3.10 to 72.50 and mean value was 20.16 with the standard deviation of 16.72. Growth in banks deposit and size had the mean values 15.51and 5.18 respectively.

Furthermore, Figure 2 describes the trend in the mean value of SDTA, LDTA and TDTA for the time period from 2007-2016. A noteworthy portion of assets was financed with the short-term debt. This suggested that short-term debt tends to be easily available therefore banks used short term debt as their major source of financing other than deposit base. Long term debt to total assets as compared to the short-term debt to assets was low i.e. 4%. Overall 20% assets were financed with the debt that depicts banking sector was less leveraged industry.
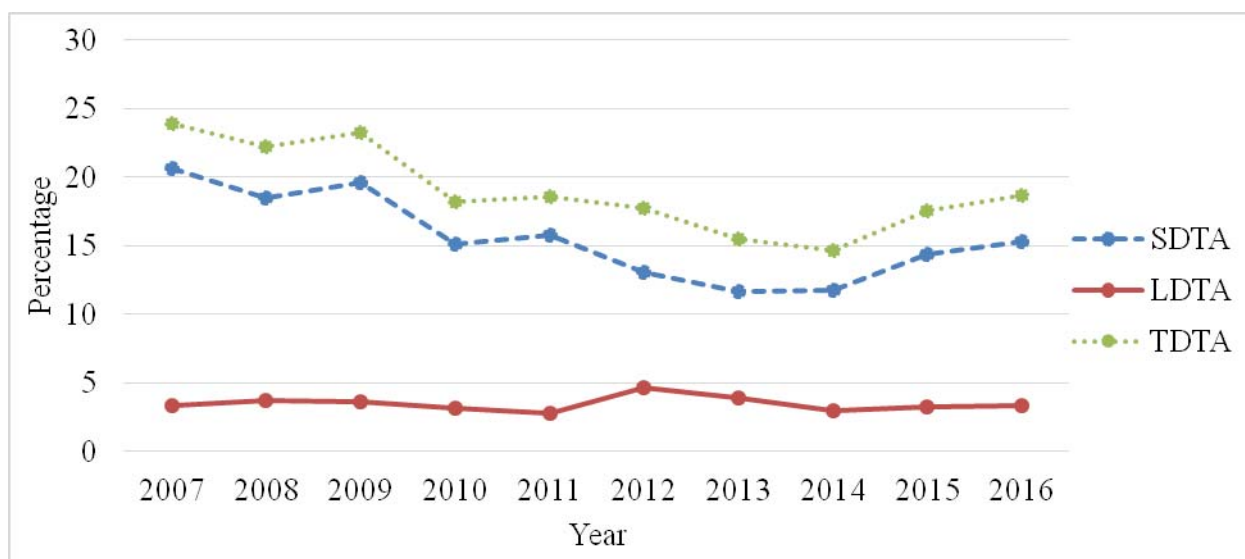
Figure 2. Mean value of SDTA, LDTA and TDTA between 2007-2016

As per the result of the descriptive analysis, nearly 20% of the assets of the banks were financed through debt capital and they heavily depended on equity capital. Further, debt market in Sri Lanka is still under the development stage. Therefore, H_1 has been supported with the results of the descriptive analysis that Sri Lankan commercial banks have lower leveraged capital structure.

4.2 Correlation Analysis

Table 4.2. Correlation Analysis

	SDTA	LDTA	TDTA	SIZ	GRO	NIM
SDTA	1.0000					

LDTA	-0.0638	1.0000				
	0.471	-----				
TDTA	0.9886	0.0875	1.0000			
	0.000	0.322	-----			
SIZ	-0.0733	-0.0910	-0.0870	1.0000		
	0.407	0.303	0.325	-----		
GRO	0.0197	0.0081	0.0209	-0.1156	1.0000	
	0.824	0.927	0.813	0.190	-----	
NIM	**0.0736**	**-0.1875**	**-0.3778**	0.0073	**0.1251**	1.0000
	0.090	**0.001**	**0.000**	0.902	**0.036**	-----

As per the correlations results presented in Table 4.2, There was a significant (at 10% level) positive association between short term debt to total asset and NIM (r = 0.0736, p =0.090). However, long term debt to total asset ratio (r =-0.1875,p < 0.05), and total debt to total assets

ratio (r =-0.3778,p < 0.05) significantly negatively associated with NIM. In terms of the control variables, there was no significant association between size and NIM (r = 0.0073, p > 0.05) but, there was a significant positive association between growth and NIM (r = 0.1251, p = 0.036). If correlations among pairs of predictor variables are large, results of regression model may be bias. Relationship between short term debt to total assets ratio and long term debt to total assets ratio seems to high. Many regression analysts often rely on variance inflation factors to detect multicollinearity. Therefore, current study performed the multicollinearity test using variable inflation factor and results are presented in table 4.3.

4.3 Test on Variable Inflation Factor (VIF)

A VIF test is conducted to examine whether multicollinearity exists amongst independent variables. Nachane (2006) suggested that VIF < 10.0 is an acceptable. Accordingly, to the table 4.3, the highest variance inflation factor (VIF) is 3.32. The general rule of thumb is that VIFs exceeding 4 warrant further investigation. Therefore, VIF does not seem to be an issue in this study.

Table 4.3. Values of variance inflation factors

Variable	VIF	1/VIF
SDTA	3.32	0.30120
LDTA	2.10	0.47619
TDTA	2.26	0.44248
SIZ	1.35	0.74074
GRO	1.04	0.96153
Mean VIF	2.01	

4.4. Unit root test

Unit root test was conducted to check the variables have the unit root or not. In order to identify the stationary variables Levin, Lin and Chu test was conducted (null: panel data has unit root) According to above model, null hypothesis could be rejected at 10% level of significance. Therefore, LDTA, SDTA, TDTA, NIM, GRO, SIZ were stationary series. Results of the unit root test presented in table 4.4.

Table 4.4. Unit Root Test (Levin, Lin and Chu)

Variables	t-Statistic	Prob.*
LDTA	-2.20525	0.0137
SDTA	-0.99336	0.0496
TDTA	-2.05462	0.0921
NIM	-1.00983	0.0000
GRO	-0.87610	0.0317
SIZ	-0.56321	0.0090

4.5 Relationship between capital structure and NIM

Table 4.5. Influence of capital structure on NIM

Variable	Pooled	Fixed effect	Random effect
C	0.2654**	0.3956	0.4987
SDTA	-0.4876	-0.3126	-0.1467
LDTA	-0.7465	-0.5987*	-0.2673*
TDTA	--0.5432**	-0.4098**	-0.4356*
SIZ	0.3421	-0.3245	0.3423
GRO	0.1987	0.0976	0.0789
No. of obs	100	100	100
R-square	0.2805	0.5234	0.4988
F-statistic(p-value)	6.58(0.035)	6.16(0.029)	10.32(0.027)
F Value	7.5123	15.4562	
Prob > F	0.0000	0.0000	
Lagrange Multiplier Test (Breush - Pegan,p value)			6.36 (0.000)
Hausman		0.69(0.0784)	

*/**/*** indicate coefficient is statistically significant at the 10/5/1 percent level of significance respectively

Table 4.5, present the results of panel data multiple regression analysis to examine the relationship between capital structure and NIM of banks in Sri Lanka. The F-statistics value for the pooled model was 6.58 ($p<0.05$), fixed effect model was 6.16($p<0.05$) and random effect model was 10.32 ($p<0.05$) which illustrated that the independent variables were jointly significantly explain the variations in NIM in the pooled, fixed and random models. The R-square statistics value of 0.2805, 0.5234 and 0.4988 showed that the independent variables jointly account for about 28.05%, 52.34%, and 49.88% variation in NIM in the pooled, fixed

and random effects models respectively.

F test was performed to diagnose the time fixed effect in the fixed effect model and outcome of the test revealed that p value was less than 0.05. Therefore, null hypothesis (null: fixed effect does not exist, alternative = fixed effect exist) was rejected that there is time fixed effects in the model. Further, Lagrange Multiplier test for random effect was performed. The result indicated that the p value was 0.000 and rejected the null hypothesis (null: random effect does not exist, alternative = random effect exist) in favor of the alternative which implied that random effect model was more appropriate than pooled OLS. In order to decide which one of the alternative panel analysis model whether it is fixed effect model or random effect model, Hausman specification test was performed. The Hausman test is used to assess the uniqueness of the error term that whether they are correlated with the response variable or not. Therefore, it can be formulated Ho hypothesis claims that random effect exist and H1 hypothesis sates that random effect do not and result indicated that random effect exist.

Going by the Hausman test statistics of (0.69, P <0.10) we rejected the null hypothesis at 10% level of significance that differences in coefficient of the fixed and random estimates are not systematic, thus we accept and interpret the fixed effect model. In this case, fixed effect model was the best model to explain the relationship between capital structure and NIM. Multicollinearity is not a problem in fixed effect model (Park,2011).

From the results of fixed effect model presented in the table 4.5, a significant negative relationship of long term debt to total asset ratio (α = -0.5987, $P < 0.10$) and total debt to total asset ratio (α = -0.4098, $P < 0.05$) with NIM. However, short term debt to total assets ratio, growth and size were not significantly related with NIM. Therefore, as per the fixed effect model presented in the table 4.5, H_2 is supported with the results of the study that there was a significant negative relationship between total debt to total assets ratio and NIM. H_3 was also supported with the results of the study that there was negative significant relationship between long term debt to total assets ratio and NIM. Further, H_4 was not supported with the results of the study that there was no significant relationship between short term debt to total assets ratio and NIM.

When answering the research question, according to the result of fixed effect model presented in table 4.5, value of coefficient of determination of dimensions of NIM in the study which is ;(R^2) is 0.5234, whist this result implies that 52% of variance of NIM is determined by capital structure of the bank. Further, study concluded that total debt to total asset ratio and long term debt to total asset ratio had a significant negative impact on NIM while short term debt to total asset ratio was not significantly influenced on the NIM.

Conclusion and implication

Current study examined the influence of capital structure on NIM of licensed commercial banks in Sri Lanka. Empirical study was conducted with the panel data of randomly selected 10 licensed commercial banks in Sri Lanka for the period from 2007 to 2016. Results of the study was reported that long term debt to total assets ratio and total debt to total assets ratio were significantly negatively influenced on NIM.

Firstly, this study found out that NIM reduced as financial leverage increased. This study suggests that financial managers should try to finance from retained earnings rather than relying heavily on debt capital from outside in their capital structure. However, they can employ debt capital as the last alternative source of finance. With a goal of maximizing the performance of banks, the managers should make an effort to attain an optimal level of capital structure and endeavor to uphold it as much as possible.

References:

Abewardhana, D.K.Y., & Magoro, K.M.R. (2017). Debt capital and financial performance: A comparative analysis of South African and Sri Lankan listed companies. *Asian Journal of Finance & Accounting, 9*(2), 103-127. https://doi.org/10.5296/ajfa.v9i2.11761.

Abor, J.(2005). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *The Journal of Risk Finance*, *6*(5), 438-445. https://doi.org/10.1108/15265940510633505.

Al-Taani, K. (2013). The relationship between capital structure and firm performance: evidence from Jordan. *Journal of Finance and Accounting*, *1*(3), 41-45. https://doi.org/10.11648/j.jfa.20130103.11.

Anarfo,E.B. (2015). Capital structure and bank performance: evidence from Sub-Sahara Africa. *European Journal of Accounting, Auditing and Finance Research, 3*(3), 1-20.

Aragie,M., Beyene,A., & Shiferaw,N. (2015). Does capital structure matter on performance of banks?:A study on commercial banks in Ethiopia. *International Journal of Scientific and Research Publication, 5*(12), 643-654.

Aymen,B.M.M. (2013). Impact of capital structure on financial performance of banks, the case of Tunisia. *Bank and Bank Systems, 8*(4), 47-54.

Central Bank of Sri Lanka. (2016). *Annual Report*, Colombo, Sri Lanka: Available at www.cbsl.lk (Accessed: 15.05.2017).

Colombo Stock Exchange (2015). *Annual Report*, Sri Lanka: Available at www.cse.lk (Accessed: 05.01.2017).

Ebaid, I. (2009). The impact of capital-structure choice on firm performance: empirical evidence from Egypt. *Journal of Risk Finance, 10*(5), 477-487. https://doi.org/10.1108/15265940911001385.

Fama, E. F., & French, K. R. (1998). Value versus growth: The international evidence. *Journal of Finance, 53*(6), 1975–1999. https://doi.org/10.1111/0022-1082.00080.

Gebremichael,G.G.(2016). The impact of capital structure on profitability of commercial bank of Ethiopia. *Journal of Poverty, Investment and Development, 28*(1), 17-36.

Gleason, K. C., Mathur, L. K., & Mathur, I. (2000). The interrelationship between culture, capital structure and performance: Evidence from European Retailers. *Journal of Business Research, 50*(2), 185- 191. https://doi.org/10.1016/S0148-2963(99)00031-4.

Hammes, K. (1998). Various aspects of capital structure in Poland. *Tallin Techinical University Working Paper.*

Lingesiya, Y., & Premkanth, P. (2012). Impact of capital structure on financial performance: a study on listed manufacturing companies in Sri Lanka. Proceedings of 8th International Conference on Business Management. University of Sri Jayewardenepura, Sri Lanka (8th & 9th December 2011).pp:1.

Majumdar, K., & Chhibber, P. (1999). Capital structure and performance: Evidence from a transition economy on an aspect of corporate governance. *Public Choice*, *98*(3/4), 287-305. https://doi.org/10.1023/A:1018355127454.

Marandu,K.R., & Sibindi,A.B. (2016). Capital structure and profitability: An empirical study of South Africa Banks. *Corporate Ownership & Control, 14*(1), 8-19. https://doi.org/10.22495/cocv14i1p1.

Mearo,A.A. (2015). The relationship between capital structure and performance in Gulf countries banks: A comparative study between Islamic banks & Conventional banks. *International Journal of Economic & finance, 7*(12), 140-154. https://doi.org/10.5539/ijef.v7n12p140.

Nachane, D.M. (2006). *Econometrics: Theoretical foundations and empirical perspectives.* New Delhi: Oxford University Press.

Nadeesha,D.H.D., & Pieris, T.S.G. (2014). The impact of capital structure choice on firm performance in Sri Lanka: Empirical evidence from the Colombo Stock Exchange. Proceedings of the Peradeniya university international research sessions, Sri Lanka, 18(4th & 5th), July 2014.

Nirajini, A., & Priya,K.B. (2013). Impact of capital structure on financial performance of the listed trading companies in Sri Lanka. *International Journal of Scientific and Research publications, 3*(5), 1-9.

Ongore,V.O., & Kusa,G.B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics & Financial Issues, 3*(1), 237-252.

Pandey, I. M. (2005). *Financial management.* 9th edn. India; vikas Irish Publication.

Pahlavan,M., Asgari,M., & Pahlavan, S. (2015). The relationship between capital structure and profitability in Commercial banks: Evidence from Iran. *Unified Journal of Economics and International Finance*, *1*(2), 008-016.

Park,H.M. (2011). *Practical guide to panel data modelling: A step by step analysis using STATA,* Tutorial working paper, Graduate School of International Relations, International University of Japan.

Ramadan,Z.S., & Ramadan, I.Z. (2015). Capital structure and firm's performance of Jordanian manufacturing sector. *International Journal of Economics and Finance, 7*(6), 279-284. https://doi.org/10.5539/ijef.v7n6p279.

Renoh, C., & Ntoiti, J. (2015). Effect of capital structure on financial performance of listed commercial banks in Kenya: A case study of Kenya commercial banks limited. *The Strategic, Business & Change Journal of Management, 2*(72), 750-781.

Saeed, M.M., Gull A.A., & Rasheed M.Y. (2013). Impact of capital structure on banking performance (A case study of Pakistan). *Interdisciplinary Journal of Contemporary Research in Business, 4*(10), 393-403.

Siddik, N.A., Kabiraj,S., & Joghee, S. (2017). Impact of capital structure on performance of banks in a developing economy: Evidence from Bangladesh. *International Journal of Financial Studies, 5*(13), 1-18. https://doi.org/10.3390/ijfs5020013.

Taani,K. (2013). The relationship between capital structure and firm performance: Evidence from Jordan. *Global Advanced Research Journal of Management and Business Studies, 2*(11), 542-546.

Yogen,C., Cheruiyot,J., Sang,J., & Cheruiyot, P.K. (2014). The effect of capital structure on firm's profitability: Evidence from Kenya's banking sector. *Research Journal of Finance & Accounting, 5*(9), 152-159.

Zafar,M.R., Zeeshan,F., & Ahmed,R. (2016). Impact of capital structure on banking profitability. *International Journal of Scientific & Research Publication, 6*(3), 186-193.