



---

**IMPACT OF BANK-SPECIFIC AND MACROECONOMIC FACTORS ON  
THE PROFITABILITY OF COMMERCIAL BANKS IN SRI LANKA**

---

*D M Jayasena*

*T Karunarathne*

SLJBF 06.02.03: pp. 39-53

ISSN 2345-9271 (Print)

ISSN 2961-5348 (Online)

DOI: <http://doi.org/10.4038/sljbf.v6i2.46>

---

***Abstract***

The objective of this research study is to investigate the impact of Bank specific and Macroeconomic indicators/forces on the Profitability of the Listed Commercial banks in Sri Lanka. Balance panel data regression analysis mode was used to analyze the data. Data for each macroeconomic and bank-related variables were collected with the assistance of secondary resources and it covers a period of 13 years commencing from the year 2006 up to 2018. The study sample contained nine licensed commercial banks that cover both the private and government sector. The study employed ROA and ROE as dependent variables while using exchange rate, GDP growth, inflation, lending interest rate, unemployment rate, BOP, Central government debts, operating margin, deposits, loan to assets, debt to equity, capital adequacy, loans to deposits and assets size as independent variables. Inflation, Balance of payments, Central government debts, operating margin, loans, equity debt, and capital adequacy variables were positively correlated with both ROA and ROE while the rest of the variables indicated a mixed effect under two regression models. Many existing studies on Banks profitability have focused either on Bank specific or macroeconomic variables but this study focused on both bank specific as well as macroeconomic factors giving equal weight for both factors as well as extending existing literature by including variables such as central government debts and BOP.

*Keywords: Bank Specific Determinants, Commercial Banks, Macroeconomic Determinants, Profitability, Regression Model*

---

***D M Jayasena***

***(Corresponding Author)***

*Department of Industrial Management, Faculty of Applied Sciences,  
Wayamba University of Sri Lanka*

Email: [jayasena@wyb.ac.lk](mailto:jayasena@wyb.ac.lk)

Tel: +94 71 7864 305

<https://orcid.org/0000-0002-3854-3946>

***T Karunarathne***

*Department of Finance, University of Sri Jayewardenepura, Sri Lanka*

Email: [tharindu777bandara@gmail.com](mailto:tharindu777bandara@gmail.com)



## 1. INTRODUCTION

The banking industry is often considered the lifeblood of a modern economy, and banks are crucial players in the financial industry, playing a pivotal role in running an economy. Meeting the financial needs of agriculture, trade, and industry sectors with a high level of accuracy and responsibility is crucial for achieving greater economic development in a country. Therefore, the development of a country is closely linked to the development of its banking industry. In a sophisticated economy, banks should be seen as core drivers of economic development, not just as money marketers or intermediaries. They play an essential role in mobilizing deposits and paying off debts across multiple sectors of the economy. The economic health of a territory is reflected in its banking system, and the resilience of an economy is deeply dependent on the strength and efficiency of its financial system. (Kengatharan and Suganya, 2018).

Banks provide vital financial services that stimulate economic growth in any country. In Sri Lanka, the banking industry is dominated by Licensed Commercial Banks (LCBs) and licensed Specialized Banks (LSBs), accounting for the majority of the financial system's assets (Central Bank of Sri Lanka, 2019). In this regard, the performance of the banking sector is important to be analyzed. Banking performance can be measured in many ways. Banking profitability is one measurement of banking Performance. Bank performance is defined as the capacity to generate sustainable profitability (European Central Bank, 2018). Profitability is important for the bank to survive and grow in the industry. Banks profitability is impacted due to both bank specific factors as well as due to macroeconomic forces that are beyond the control of a bank. This research tries to find the impact of bank specific and macroeconomic factors on the profitability by employing balance panel data regression model.

Most of the existing studies focused on bank specific factors when analyzing bank profitability. They have emphasized heavily on those bank internal factors (ratios). But some scholars such as Ariyadasa et al, and Selvanathan (2017) touched on three macroeconomic variables (GDP, inflation and interest rate). Kengatharan and Suganya (2018) focused on internal profitability determinants. Therefore, this research study aims to examine the impact of bank specific and macroeconomic variables on banks profitability by extending the previous findings by giving equal emphasize on both bank specific as well as macroeconomic determinants (seven bank specific and seven macroeconomic variables) by expanding those variables with the support of balance panel data regression analysis. This study will be worthy to different stakeholders as scholars, academic persons, managers, investors, policy makers and regulatory bodies as it recognizes the direction and magnitude of each bank specific and macro level profitability determinants. This study will facilitate government regulators in formulating finance and fiscal policies.

## 2. LITERATURE REVIEW

Bank profitability is typically measured using a combination of internal and external indicators. Internal determinants are based on the bank's financial statements, such as

its balance sheet and profit and loss accounts, while external determinants come from macroeconomic variables.

Structure conduct performance theory (SCP) and Market power (MP) hypothesis theoretically support the bank profitability determinants. SCP suggests firms' profit depends on the level of industry concentration. Short (1979) found a statistically positive, nonlinear and weak relationship between level of concentration and profitability. MP hypothesis suggests that market power is the key variable that changes profitability of a firm. Salike (2016) recognized market structure as the suitable proxy for the market power. Those are the initial studies that laid the foundation for examining the bank's profitability determinants.

Previous research has often used bank size as a determinant of profitability, typically measured by the natural logarithm of the bank's total assets. However, studies have produced mixed results, with some finding a negative correlation between bank size and profitability (Thevaruban, 2017; Athansoglu, 2005) and others finding a positive correlation (AL-Omar and AL-Mutari, 2008; Goddard et al , 2004; Suffian and Habibullah, 2009; Puah and Ali, 2017; Anbar and Alper, 2011).

Capital adequacy is a critical measure of the financial health and stability of banks. It is defined as the ratio of a bank's capital to its risk-weighted assets, which reflects a bank's capacity to absorb potential losses arising from its lending and investment activities. Several academic works have examined the relationship between capital adequacy and bank profitability. According to the majority of research findings, including Ariyadasa et al, (2017); Anbar and Alper, (2011); Kengatharan and Suganya, 2018, Menicucci and Paolucci (2015), and Goddard et al (2004), capital adequacy has a positive impact on bank profitability. However, a few studies, such as Weerasinghe and Perera (2013); Ashraf and Masood (2012), and Thevaruban (2017), have reported a negative correlation between capital adequacy and bank profitability. This negative relationship could be due to the high costs of maintaining higher capital levels or the negative impact on the bank's lending activities. In conclusion, while capital adequacy is generally viewed as a positive determinant of bank profitability, the relationship may vary based on several factors, including the bank's business model, size, and the regulatory environment.

Ownership status is another commonly used bank-specific profitability determinant identified within the existing literature. This is based on the view that management incentives differ under different forms of bank ownership (Christos. and Geoffrey, 2004). Previous researchers, including Molyneux and Thornton (1992); Trindade and Garcia (2018); Short (1979), and Bourke (1989), have found a positive correlation between ownership status and a bank's profitability, while some researchers, such as Athansoglu (2005), have produced contradictory findings. However, the majority of results support the notion that "ownership status is positively associated with a bank's profitability."

Operating efficiency or operating margin is another important internal profitability determinant that is widely used in existing literature. It is a common benchmark that companies use to determine how efficiently their management keeps operating costs

low while earning revenue or making sales. Weerasingha and Perera (2013); Thevaruban (2017); and Athansoglu (2005) have found that operating efficiency has a negative impact on a bank's profit levels, while other researchers such as Ashraf and Masood (2012) and AL-Mutari and AL-Omar (2008) have found that operating efficiency has a positive impact on a bank's profitability.

Deposits to total assets ratio is another crucial internal profitability determinant of banks which is discussed in much of the existing literature. It is a measure of a bank's liquidity, where a higher ratio indicates a sound liquidity position. Research carried out by Anbar and Alper (2011) has found that loans to assets reflect a negative correlation with a bank's profitability, but another study done by Panditharathne and Kawshala (2017) and Trindade and Garcia (2018) has found contradictory results to the previous findings. Many scholars have also used the loans to assets ratio as an internal profitability determinant factor in their academic works. Suffian and Habibullah (2009); Thevaruban (2017); Ashraf and Masood (2012); Paolucci and Menicucci (2015) have all found that loans to assets positively impact a bank's profitability.

When considering macroeconomic variables, many researchers have not given significant attention to external profitability determinants of banks. GDP growth rate has been a common external profitability determinant used by scholars to measure the impact on a bank's profitability. Perales et al (2014); Garcia and Guerreiro (2016); Weerasingha and Perera (2013), and Ariyadasa et al (2017) found that GDP growth rate positively impacts the bank's profitability. However, other authors such as Anbar and Alper (2011); Ashraf and Masood (2012) and Trindade and Garcia (2018) have reported contradictory outcomes.

The inflation rate is another important external profitability determinant widely used in the existing literature. It measures the general price levels within an economy and has a direct impact on an organization's profitability. Athansoglu (2005); Molyneux and Thornton (1992); Trindade and Garcia (2018); Ariyadasa et al (2017); Anbar and Alper (2011) and Ashraf and Masood (2012) have reported that the inflation rate positively correlates with a bank's profitability. On the other hand, Weerasinghe and Perera (2013) and Garcia and Guerreiro (2016) found that inflation rate has a negative impact on a bank's profitability.

As per the existing literature, such studies are either focus on bank specific profitability determinants or macroeconomic variables. But few studies such as Ariyadasa et al, (2017); Anbar and Alper, (2011) have focused on few macroeconomic factors. Moreover studies such as Tauringana et al et al., (2018) focused only on the macroeconomic factors. Paolucci and Menicucci (2016) has focused only on internal determinants. Therefore this research study addresses this existing knowledge gap by employing both bank specific and macroeconomic variables placing equal weights. Studies such as Suffian and Habibullah (2009); Al-Mutairi and Al-Omar (2008) have employed analytic techniques as multivariate regression or seemingly unrelated regression analysis and Ariyadasa et al., (2017) has used ECM and ARDL methods. Therefore, this study employed balanced panel data regression analysis with fixed effects, random effects and OLS according to statistical

thresholds. This study analyses the already employed variables in existing literature as well extend the existing literature by employing novel variables fulfilling all the statistical benchmarks as well.

### **3. METHODOLOGY**

The research population consisted of all listed commercial banks across the country, spanning from 2006 to 2018. According to the Central Bank of Sri Lanka, there were 26 listed commercial banks registered in Sri Lanka in 2018. Due to various constraints explained at the beginning, a sample of only 9 listed commercial banks in Sri Lanka was used in this academic work. The sample included 2 frontline government-run commercial banks and 7 privately run listed commercial banks. The sample was selected using convenient sampling, which exclusively focused on previous data that spanned over a decade, in order to create a profound statistical model.

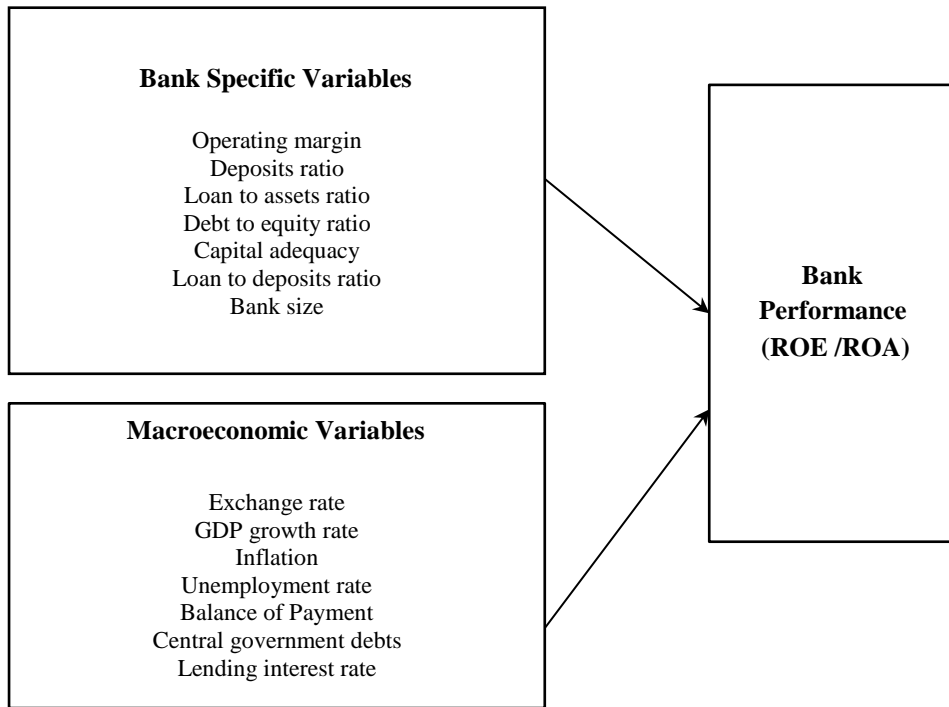
The research extracted external data on the macroeconomic variables that affect a bank's profitability. The study analyzed the Colombo consumer price index (CCPI) to extract the price level rate, gross domestic product, and exchange rate, as well as the weighted average lending rate. The remaining macroeconomic variables were obtained from the central bank's yearly report for the year 2018.

The seven monetary ratios related to the banks were measured using the support of the individual commercial bank's recent 13 years of annual reports. All macroeconomic items/determinants were represented as yearly data, with lending interest rates illustrated monthly and in three-month modes by the CBSL. As a result, the author selected the average measures for the lending interest rates to carry out the analytical process.

#### **3.1 Variables**

The study embedded 15 variables unlike any previous studies to test the bank-related and external profitability determinants of listed commercial banks in Sri Lanka. The dual variables were deployed as controllable variables, while the remaining variables were treated as explanatory variables. ROA and ROE were treated as dependent variables, while the Exchange rate, GDP growth rate, Inflation rate, Lending interest rate, Unemployment rate, Balance of payments, and Central government debts were considered macroeconomic explanatory variables. Meanwhile, Operating margin, Deposits ratio, Loans to total asset ratio, Debt to equity ratio, capital adequacy ratio, Loans to deposits ratio, and Bank size were considered as bank-identical explanatory measures.

The academic work utilized the "STATA/IC 14.2" statistical function to analyze the data. The "balanced panel data analysis" was selected to test the statistical outcomes. Both the Fixed Effect and OLS regression techniques were collaboratively used in reaching conclusions and findings, as revealed by the Hausman Test. The conceptual framework of this study is shown in the Figure 1 with some modification of previous studies.



Source: Author development with previous studies

**Figure 1: Conceptual Framework**

#### 4. RESULTS AND DISCUSSION

Two regression models were developed using balanced panel data analysis, consisting of nine panels and a total of 117 observations. Although the method assumed linearity between the controllable variable and the explanatory variables, the model was tested with the ordinary least squares method assumptions before arriving at the final results.

The panel data is used in analyzing the impact on banks' profitability. In the panel data the used model consists n cross- sectional units, denoted  $n= 1, \dots, N$ , observed at each of T time periods,  $t= 1, \dots, T$ . In data set, the total observation is  $n*T$ . The basic framework for the panel data is defined as per the following regression model (Brooks, 2008):

$$y_{nt} = \alpha + \beta x_{nt} + \mu_{nt}$$

Where the dependent variable is denoted by (profitability)  $y_{nt}$ . Intercept term used and denoted by  $\alpha$ , on the explanatory variables,  $\beta$  is a  $k*1$  vector of parameters to be estimated, and vector of observations is  $x_{nt}$  which is  $1*k, t=1 \dots T: n=1, \dots, N$ .

The functional form of above model is as follows:

$$\text{Profitability} = f(\text{macroeconomic variables, bank specific variables})$$

$$ROA = \alpha + \beta_1 \text{Ex rate} + \beta_2 \text{GDP growth} + \beta_3 \text{Inflation} + \beta_4 \text{Lending} + \beta_5 \text{Unemployment} + \beta_6 \text{BOP} + \beta_7 \text{CGD} + \beta_8 \text{OPI} + \beta_9 \text{Deposits} + \beta_{10} \text{Loans} + \beta_{11} \text{DE} + \beta_{12} \text{CA} + \beta_{13} \text{LD} + \beta_{14} \text{Log\_A} + \mu t$$

$$ROE = \alpha + \beta_1 \text{Ex rate} + \beta_2 \text{GDP growth} + \beta_3 \text{Inflation} + \beta_4 \text{Lending} + \beta_5 \text{Unemployment} + \beta_6 \text{BOP} + \beta_7 \text{CGD} + \beta_8 \text{OPI} + \beta_9 \text{Deposits} + \beta_{10} \text{Loans} + \beta_{11} \text{DE} + \beta_{12} \text{CA} + \beta_{13} \text{LD} + \beta_{14} \text{Log\_A} + \mu t$$

**Table 1: Descriptive Statistics of the Variables**

Variable	Obs.	Mean	Std. Dev.	Min	Max
Bank	0	-	-	-	-
Id	117	05	2.593094	1	9
Year	117	2012	3.757751	2006	2018
ROA	117	1.565983	1.165246	0.57	12.28
Exchange rate	117	0.0080504	0.0010743	0.006152	0.009619
GDP Growth	117	5.692308	2.037923	3.2	9.1
Inflation	117	7.669231	5.504363	2.2	22.6
Lending Rate	117	14.89923	2.385686	11.27	19.28
Unemployment	117	4.861538	0.7754694	4	6.5
BOP	117	262.9846	1293.597	-1488.7	2725.3
CG Debts	117	77.67692	6.361785	68.7	87.9
OPI	117	6.122479	1.795998	2.48	19.6
Deposits	117	66.20376	18.68069	7.57	84.09
Loans	117	63.89231	8.208445	38.01	79.66
DE	117	12.9694	6.132787	1.65	31.76

**Table 2: Results of the ROA model**

VARIABLES	(1)	(2)	(3)
ROA	OLS	Random effect	<i>*fixed effect</i>
exrateusd_d	126.3 (0.723)	27.26 (0.180)	-56.04 (-0.438)
gdpgrowth	0.0524 (1.078)	0.0131 (0.309)	-0.0210 (-0.575)
inflation	0.0315 (1.661)	0.0396** (2.396)	0.0479*** (3.419)
Lending	-0.124** (-2.482)	-0.151*** (-3.463)	-0.178*** (-4.818)
unemployment	0.274* (-1.985)	-0.309** (-2.543)	-0.361*** (-3.412)
bopusd	0.000110 (1.623)	0.000110* (1.889)	0.000112** (2.318)
cgdebts_d	0.0292 (1.631)	0.0247 (1.612)	0.0227* (1.777)
Opi	0.447*** (10.65)	0.517*** (13.17)	0.598*** (16.79)
deposits	-0.00813 (-0.893)	-0.00966 (-1.044)	-0.00760 (-0.782)
loans	0.0146 (1.352)	0.00918 (0.903)	0.00230 (0.250)
de	0.00519 (0.405)	0.0186 (1.256)	0.0564*** (2.818)
ca	0.00189 (0.0646)	0.00989 (0.385)	0.0241 (1.093)
ld	0.310** (2.272)	0.258* (1.959)	0.167 (1.366)
loga_d	-0.110 (-0.0806)	0.879 (0.732)	1.501 (1.469)
Constant	0.652 (0.496)	1.070 (0.865)	1.006 (0.813)
Observations	108	108	108
R-squared	0.820		0.898
Number of id		9	9

Note: t-statistics in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



**Table 3: Results of the ROE model**

VARIABLES	(1)	(2)	(3)
ROA	OLS	Random effect	<i>*fixed effect</i>
exrateusd_d	958.2 (0.626)	958.2 (0.639)	40.76 (0.0289)
gdpgrowth	1.033** (2.460)	1.033** (2.477)	0.668 (1.665)
inflation	0.00563 (0.0466)	0.00563 (0.0352)	0.0827 (0.546)
Lending	-0.532 (-1.415)	-0.532 (-1.244)	-0.771* (-1.904)
unemployment	-1.745 (-1.631)	-1.745 (-1.471)	-1.730 (-1.484)
bopusd	0.000691 (1.448)	0.000691 (1.196)	0.000689 (1.301)
cgdebts_d	0.172 (1.348)	0.172 (1.126)	0.115 (0.823)
Opi	2.243*** (4.566)	2.243*** (6.226)	2.808*** (7.160)
deposits	-0.101 (-1.102)	-0.101 (-1.294)	-0.103 (-0.960)
loans	0.226** (2.080)	0.226** (2.435)	0.193* (1.910)
de	0.879*** (7.157)	0.879*** (7.990)	0.819*** (3.714)
ca	0.254 (0.915)	0.254 (1.008)	0.313 (1.290)
ld	-1.833 (-1.131)	-1.833 (-1.562)	-1.858 (-1.376)
loga_d	3.200 (0.411)	3.200 (0.274)	17.78 (1.580)
Constant	-5.072 (-0.459)	-5.072 (-0.450)	-2.789 (-0.205)
Observations	108	108	108
R-squared	0.633		
Number of id		9	9

Model - 01 (ROAE):

$$\text{ROA} = 1.0063 - 56.044 \text{ Ex rate} - 0.02097 \text{ GDP growth} + 0.0479 \text{ Inflation} + 0.1782 \text{ Lending} - 0.3614 \text{ Unemployment} + 0.00011 \text{ BOP} + 0.0227 \text{ CGD} + 0.5979 \text{ OPI} - 0.0076 \text{ Deposits} + 0.0023 \text{ Loans} + 0.0564 \text{ DE} + 0.02411 \text{ CA} + 0.1674 \text{ LD} + 1.5013 \text{ Log}_A + \mu nt.$$

Model - 2 (ROE):

$$\text{ROE} = -5.0724 + 958.168 \text{ Ex rate} + 1.033 \text{ GDP growth} + 0.0056 \text{ Inflation} - 0.5316 \text{ Lending} - 1.745 \text{ Unemployment} + 0.00069 \text{ BOP} + 0.1719 \text{ CGD} + 2.2432 \text{ OPI} - 0.1012 \text{ Deposits} + 0.2255 \text{ loans} + 0.8785 \text{ DE} + 0.2537 \text{ CA} - 1.8329 \text{ LD} + 3.2004 \text{ Log}_A + \mu nt.$$

According to Table 2, overall R- square value is 89.80% which implies that 89.80% of the variance in the dependent variable is explained by the independent variables. In general, the R-square value should be greater than the 50 % ( 0.5), so the soundness of the model is at the satisfactory level. In developing the model with the ROA, researcher have used fixed effect panel data regression as suggested by the Hausman Test.(it suggests that if the p- value of the hausman test is less than 0.05 you should continue with the Fixed effect model.) . Overall F-value is 0.000 which is less than the threshold limit of 0.05(50%). Therefore we can conclude that an overall, fixed effect regression model is suitable in arriving at conclusions. Suffian and Habibullah (2009) and Tauringana et al et al.,(2017) also argued that the FE model produces unbiased and steady coefficients.

The study found a positive correlation between the return on asset and the Inflation rate of 0.0478864 as illustrated on Table. This means that as inflation increases by 1%, ROA increases by (0.0478864%). It implies that inflation rate positively affects the bank's profitability. These findings are similar to the ( Ariyadasa et al, 2017), and(Anbar and Alper, 2011) but contradictory with (Weerasinghe and perera, 2011) and Garcia and Guerreiro (2016).

According to Table 2, the research found a negative relationship between the Return on Asset (ROA) and the Exchange Rate, with a correlation coefficient value of - 56.044. This negative correlation indicates that the Exchange Rate has a negative impact on a bank's profitability. The validity of each explanatory variable is determined by its individual p-value, with a benchmark rule of 0.05. Therefore, the statistically verified relationship between Exchange Rate and bank profitability is confirmed as the individual p-value is below this threshold (marked as stars in the table). These findings are in contrast to the Trindade and Garcia (2018) and Garcia and Guerreiro (2016).

There is a negative correlation between GDP growth and ROA, as shown by the correlation coefficient value of -0.0209712. This result contradicts previous empirical studies. On the other hand, the research found a positive correlation between ROA and inflation rate with a correlation value of 0.0478864. This result suggests that inflation rate has a positive effect on bank profitability, as confirmed by the individual p-value of 0.001, which is lower than the benchmark value of 0.05. Similarly, the

negative correlation between Lending Interest Rate and ROA, with a correlation coefficient value of -0.17816, is confirmed by the individual p-value of 0.001, indicating a statistically significant relationship. These findings are parallel with Anbar and Alper (2011), and Ashraf and Massod (2012), and Trindade and Garcia (2018), but in contrast to the Perales et al (2014), Garcia and Guerreiro (2016), Weerasingha and Perera (2013), and Ariyadasa et al (2017) findings.

However, the research showed a negative correlation between ROA and Unemployment ratio, with a correlation coefficient value of -0.3614382. Although this result indicates that unemployment ratio negatively affects bank profitability, the individual p-value of 0.001 suggests there is no statistically significant partnership/connection between ROA and unemployment ratio. These findings are in accordance with the Abreu and Mendes (2002) findings.

In addition, the research revealed a positive correlation between ROA and the Balance of Payments, with a correlation coefficient value of 0.0001119. The individual p-value of 0.023 confirms a statistically significant relationship between ROA and the Balance of Payments, whereas the positive correlation between ROA and Central Government Debt, with a correlation coefficient value of 0.0226985, is mathematically insignificant, as confirmed by the individual p-value of 0.079.

Furthermore, the research found a positive correlation between ROA and Operating Margin, with a correlation coefficient value of 0.5979026, which is statistically significant, as confirmed by the individual p-value of 0.000. However, there is no statistically significant relationship between ROA and Deposits Ratio or Loans to Total Assets Ratio, with correlation coefficient values of 0.0076039 and 0.0023037, respectively, and individual p-values greater than the threshold value of 0.05. Such findings are consistent with Al-Harbi (2018) and Bourke (1989) but in contrast to Athanasoglou et al., (2005) and kengatharan and Sugnya (2018) findings.

Similarly, the positive correlation between ROA and Debt to Equity Ratio, with a correlation coefficient value of 0.0564472, is statistically significant, as confirmed by the individual p-value of 0.006. However, the research found no statistically significant relationship between ROA and Capital Adequacy Ratio or Loans to Deposits Ratio, with correlation coefficient values of 0.0241068 and 0.1673617, respectively, and individual p-values greater than the threshold value of 0.05. Such findings are parallel with Ashraf and Masood (2012) findings.

In model two (Table 3), by contrast to the previous model in this study, the exchange rate and the GDP growth indicated a positive correlation value of 958.1673 and 1.03331 respectively between the Return on Equity. It verifies that the exchange rate and the GDP growth both change in the same direction with ROE. However, here also, the Inflation rate indicates a positive correlation of 0.0056283 between the ROE and it is in line with the previous model as well as, the above-mentioned previous outcomes as well. The lending interest rate showed a negative correlation of 0.5315962 with the ROE, which sounds like it moves vice-versa with the ROE. The unemployment rate recorded a negative correlation value of 1.744689 with the ROE

as well. BOP and CG debts indicated a positive correlation of 0.0006909 and 0.171878 respectively with the ROE.

When it comes to the bank-specific determinants, Loans to assets ratio, Debt to equity ratio, Capital adequacy ratio and Asset size have shown a positive correlation of 0.2255025, 0.8785433, 0.2536969, 3.200385, respectively with the Return on equity. However, the Loans to deposits ratio recorded a negative correlation of 1.832856 with the banks' profitability. As per the individual probability values of each of the independent variables, Exchange rate, Inflation rate, Lending interest rate, Unemployment, Balance of payments, central government debts, Deposits ratio, Capital adequacy, Loans to deposits and Asset size were indicated statistically insignificant relationship with the ROE with 95% confidence level. Workout experienced that, the GDP Growth rate, Operating margin, Loans to assets ratio, and Debt to equity ratios were only statistically significant with the ROE. As per the statistical thresholds ROE model was statistically sound. As per the hausman test model should continue with random effect but again random effect should compare with the OLS method by doing Breusch and pagan Lagrangian multiplier test as probability value was greater than 0.05 ROE model continue with OLS results.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusion**

The research is focused on bank specific and macroeconomic profitability determinants of commercial banks in Sri Lankan context. While the majority of the research outcomes are consistent with previous literature, some findings contradicted fundamental concepts, such as the effect of GDP growth rate on profitability. Additionally, lending interest rates showed converse results with previous studies. This research extends the existing literature by employing the Central government debt. Balance of payments as external determinants which aren't used in parallel studies. It is found that, both BOP and central government debt are positively as well as significantly correlated with ROA as well as with ROE. Also debt to equity ratio was also not within existing studies and it indicated a positive but insignificant relationship with ROA while it showed a positive significant relationship with ROE model. There is not a study regarding bank profitability which considers both bank specific and macroeconomic forces sufficiently by collecting data over a decade as this study in Sri Lankan context. The study's importance lies in its demonstration of the importance of not only bank-exclusive but also macroeconomic factors on bank profitability, making it valuable for policymakers, investors, and stakeholders in financial institutions.

### **5.2 Recommendation**

The study revealed a strong negative correlation between exchange rates and bank profitability, indicating that banks need to enter into proper hedging contracts to stimulate profits or reduce losses. Inflation, balance of payments, and government debts were found to marginally intensify bank profits, and managing assets had a

strong positive impact on profitability. Banks also need to maintain a suitable balance of liquidity and leverage to stimulate profitability.

### 5.3 Future Research Studies

The main objective of this academic work is to examine the interactions between macroeconomic and bank-related indicators on the profitability of commercial banks across the Island Nation. Future studies could expand the sample size and timeline of data to verify if the results are similar or contrast with this study. Furthermore, future studies could include additional macroeconomic and bank-exclusive variables to test their impact on bank profitability. The study can also be expanded to cross-country studies by taking into account various geographical territories.

Future studies could also use alternative proxy measures/variables to indicate bank performance instead of ROA and ROE. Other potential measures include Net Interest Margin, Sales to Assets ratio, Gross profit margin, and Net profit margin. Further explanatory variables can also be added depending on the specific objective of future research studies.

Moreover, future researchers could use alternative data analytical methods such as Auto regressive distributive lags (ARDL), Vector autoregression (VAR), or generalized linear model (GLM) to obtain outcomes that may differ slightly from this study. Additionally, the current study could be broadened by including one or more dummy variables for the existing model. Qualitative profitability Factors/determinants that could stimulate bank profitability could also be added, as most empirical studies, including this one, have primarily focused on quantitative factors.

### REFERENCES

- Abreu, M., and Mendes, V. (2002), "Commercial Banks Interest Margins and Profitability: Evidence for some EU Countries", [online], Article: January 2001, Preliminary Draft, available at: <https://www.researchgate.net/publication/237460076>
- AL- Mutairi, A. and AL- Omar, H. (2008), "Bank Specific determinants of Profitability: The case of Kuwait", Journal of Economic and Administrative Sciences, [online], Vol.24 No.2, pp.20-34, Available at: <http://www.emeraldinsight.com>
- AL-Harbi, A. (2018), "The determinants of conventional banks profitability in developing and underdeveloped OIC countries", [online], Vol.24 No.47, pp.4-28, Available at: <http://www.emeraldinsight.com/2077-1886.htm>
- Anbar, A., and Alper, D. (2011), "Bank specific and Macroeconomic Determinants of Commercial Banks Profitability: Empirical evidence from Turkey", Business and Economics Research Journal, [online], Vol.2 No.2, pp.139-152, Available at: <http://www.berjournal.com>

- Ariyadasa, C., Selvanathan, E.A., Siddique, M.A.B., and Selvanathan, S. (2016), "On the profitability of commercial banks; The Sri Lankan Case", *Applied Economics* ISSN:0003-6846 (print) 1466-4283 (online), [online], Vol.49 No.21, pp.2106-2116
- Ashraf, M., and Masood, O., (2012), "Bank- specific and macroeconomic profitability determinants of Islamic banks", [online], Vol.4 No.2/3, pp. 255-268, Available at: <http://www.emeraldinsight.com/1755-4179.htm>
- Athanasoglou, P.P, Brissimis, S.N., and Delis, M.D. (2005), "Bank specific, Industry specific and Macroeconomic Determinants of Bank Profitability", Munich Personal RePEc Archive, [online], MPRA paper No.32026, pp.5-35, Available at: <https://www.mpra.ub.uni-muenchen.de/32026/>
- Bourke, P. (1989), "Concentration and other determinants of bank profitability in Europe, North America and Australia", *Journal of Banking and Finance*, [online], Vol.13 No.1, pp.65-79 Central Bank Of Sri Lanka (2019), Statistics, [online], Available at: <https://www.cbsl.gov.lk/statistics>
- Christos K. and Geoffrey E., (2004 ), "The Determinants of European Bank Profitability", Vol 03 No 06, pp. 57-60, available at: <https://www.clutejournals.com/index.php/IBER/article/download/3699/3743>
- Goddard, J., Molyneux, P., and Wilson, J.O.S. (2004), "The Profitability of European Banks: A Cross sectional and Dynamic Panel Analysis", *The Manchester School*, [online], Vol.72 No.3, pp.363-381, Available at: <https://www.citeseerx.ist.psu.edu>
- Garcia, M. T. M., & Guerreiro, J. P. S. M. (2016). Internal and external determinants of banks' profitability: The Portuguese case. *Journal of Economic Studies*, 43(1), 90-107.
- Kengatharan, L., and Suganya, S.J.(2018), "Impact of Bank Internal Factors on Profitability of Commercial Banks In Sri Lanka", *Journal of business studies*, [online], Vol.05 No.1, pp.61-74, Available at : <https://www.researchgate.net/publication>
- Molyneux, P., and Thornton, J. (1992), "Determinants of European bank profitability: A note", *Journal of Banking and Finance*, [online], Vol.16 No. 1992, pp.1173-1178, Available at: <https://www.eclass.teicrete.gr>
- Panditharathne, K., and Kawshala, H. (2017), "The factors effecting on Bank Profitability", *International Journal of Scientific and Research Publications*, [online], Vol.07 No.02, pp.212-216, Available at: <https://www.ijsrp.org>

- Paolucci, G., and Menicucci, E. (2015), “The determinants of bank profitability: empirical evidence from European banking sector”, [online], Vol.14 No.1, pp.86115, Available at: <http://www.emeraldinsight.com/1985-2517.htm>
- Perales , A., Moya, J., and Jara-Bertin, M. (2013), “Determinants of bank performance: evidence for Latin America”, [online], Vol.27 No.2, pp.164-182, Available at: <http://www.emeraldinsight.com/1012-8255.htm>
- Puah, C.H., and Ali, M. (2017),”The internal determinants of bank profitability and stability: An insight from banking sector of Pakistan”, [online], Vol.42 No.1, pp.4967, Available at: <http://www.emeraldinsight.com/2040-8269.htm>
- Salike, N., and Ao, B. (2016), “Determinants of banks’ profitability: role of poor asset quality in Asia”, [online], Vol.8 No.2, pp. 216-231, Available at: <http://www.emeraldinsight.com/2044-1398.htm>
- Short, B.K. (1979), “The relation between commercial banks profit rates and banking concentration in Canada, Western Europe and Japan”, Journal of Banking and Finance, Vol.3 No.3, pp. 209-219, Available at: <https://www.sciencedirect.com/article>
- Sufian, F., and Habibullah, M.S. (2009), “Determinants of bank profitability in a developing economy: Empirical evidence from Bangladesh”, Journal of Business Economics and Management, [online], Vol.10 No.3, pp.207-217, Available at: <https://www.jbem.vgtu.lt>
- Tauringana , V., Lloydking, R., and Adelopo, I. (2017) “Determinants of bank profitability before, during and after the financial crisis”, [online], Vol.14 No.4, pp.378-398, Available at: <http://www.emeraldinsight.com/1743-9132.htm>
- Thevaruban, J.S. (2017), “Drivers of Commercial banks’ Profitability in Sri Lanka”, Global Journal of Management and Business Research, [online], Vol.17 No.6, pp.1523, Available at: <http://www.creativecommons.org/licenses/by-nc/3.0/>
- Trindade, M.J., and Garcia, T.M. (2018), “Determinants of banks’ profitability in Angola”, [online], Vol.10 No.1, pp. 116-128, available at: <http://www.emeraldinsight.com/2040-0705.htm>
- Weerasinghe, V.E.L.W., and Perera, T.R. (2013), “Determinants of Profitability of Commercial Banks In Sri Lanka”, International Journal of Arts and Commerce, [online], Vol.2 No.10, pp.141-169, Available at: <https://www.dr.lib.sjp.ac.lk> .
- World Bank Open Data (2019), Unemployment, [online], Available at: <https://www.worldbank.org>