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## **The Effect of Corruption and Money Laundering on Banking Profitability and Stability of Licensed Commercial Banks in Sri Lanka**

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### **ABSTRACT**

This study investigated the impact of corruption and money laundering on banking profitability and stability of licensed commercial banks in Sri Lanka, by using the panel data of 24 licensed commercial banks from 2015-2021 in Sri Lanka. The data for this study was collected from secondary data sources. In the study, corruption and money laundering data were obtained from Transparency International and Basel Institute of Governance, respectively. The analysis of the study followed the multiple regression analysis. Further, this study used fixed effect and random effect regression techniques for analyzing the data. The result of the study found evidence consistent with previous studies indicating that corruption has a negative and money laundering has a positive relationship with the banking profitability. Further, this paper also found that bank size and management efficiency also have positive impact on banking profitability and stability. Based on the findings of the study Government can take necessary actions to uplift the knowledge of Corruption and Money Laundering in accordance with the findings of this research. Moreover, findings of this study will be useful for future researchers to enhance their knowledge on this area of study.

**Keywords:** Bank Stability, Corruption, Money Laundering and Return on Assets.

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### **INTRODUCTION**

The effective functioning of the banking sector has a key impact on the stability of economic growth (Rushchyshyn et al., 2021). Banks can create vulnerabilities of systemic nature, partly due to a mismatch in maturity of assets and liabilities and their interconnectedness. Therefore, the soundness of banks is important, as it contributes towards maintaining confidence in the financial system, and

any failure may have the potential to impact on activities of all other financial and non-financial entities, and finally the economy. Banking stability is related to an undisrupted situation either from internal or external shocks. A stable banking system has several implications such as economic growth, efficient financial system and investment patterns and competition. Banking profitability

refers to the measurement of efficiency and ultimately its profit and loss in the form of Return on Assets (ROA) and Return on Equity (ROE). Banking profitability relates to financial stability, and these are significant indicators for financial regulators, policymakers and for stakeholders.

Commercial banks are closely associated with business models, consumer operations and other economic activities. It includes monthly salaries, deposit mobilization, consumer finance and borrowing money for consumption or investment purposes. In this context, past studies have highlighted the role of the banking sector in predicting an efficient business environment (Beck & Levine, 2004). According to the Central Bank of Sri Lanka (2018) in terms of the asset base and the magnitude of services provided, the Licensed Commercial Banks (LCBs) are the single most important category of financial institutions within the banking sector. LCBs dominate the financial system with the highest market share of the entire financial system's assets. Therefore, the health of Sri Lankan financial system depends to a large extent on the soundness of the LCBs.

Corruption is one of the greatest challenges faced by developing countries. In recent times, the poor governance and increase level of corruption opens a forum to discuss the relationship between corruption and banking performance (Ben Ali et al., 2020). Recently, studies have also accounted the roles of corruption on bank activities (Bolarinwa & Soetan, 2019; Arshad & Rizvi, 2013; Aburime, 2009). Empirical studies investigating the effect of corruption on bank profitability are limited and most studies have reported mixed and conflicting results. While some studies have reported a negative relationship between corruption and bank performance (Asteriou et al., 2016; Chen

& Liao, 2011; Claessens et al., 2001), some studies have specifically reported a positive relationship between corruption and bank profitability (Ben Ali et al., 2020; Bolarinwa & Soetan, 2019).

Money Laundering (ML) is the process of getting money through criminal operations such as drug trafficking, terrorist activities, or another financial crime and making it appear as though it came from lawful or legal sources (Nobanee & Ellili, 2018). The Financial Action Task Force on Money Laundering (FATF) defines the term "Money Laundering" briefly as "the processing of criminal proceeds to disguise their illegal origin in order to legitimize the ill-gotten gains of crime". Although there are many more comprehensive definitions of "Money Laundering" used by different countries, the FATF definition adequately captures the essence of the process. Money launderers, in particular, develop new strategies to conceal their assets, which is an evolutionary practice of ML. Because of the lack of financial regulatory oversight, wealth obtained through corrupt and criminal means is frequently laundered. As a result of the inadequate regulatory framework, the banking sector is exploited to launder money (Hussain et al., 2021). The literature reports that ML has adverse effects on financial stability (Hussain et al., 2021) as well as most literature stated that there is a positive relationship between ML and Non-performing Loans (NPL) (Shah et al., 2022; Hussain et al., 2021).

As per Transparency International (2021) Corruption perception index (CPI), Sri Lanka scored a 37 on a scale from 0 ("highly corrupt") to 100 ("highly clean"). when ranked by score, Sri Lanka 102 among the 180 countries in the index, where the country ranked 1 is perceived to have the most honest public sector. Although according to the Anti money laundering index by (*Basel AML*

*Index*, 2021) , Sri Lanka scored 6.51, when ranked by the score, Sri Lanka is placed at 18, among countries. As a developing country Sri Lanka ranked high risky ranked according to CPI and AML indexes. To identify the relationship between corruption and bank performance as well as ML and bank performance, the following research questions have developed.

1. What is the Impact of Corruption on Banking Profitability of Licensed Commercial Banks in Sri Lanka?
2. What is the Impact of Corruption on Banking Stability of Licensed Commercial Banks in Sri Lanka?
3. What is the Impact of Money Laundering on Banking Profitability of However, as a developing ASEAN country there is a dearth of research regarding this research question in Sri Lankan context. Thus, there is an empirical gap to be fulfilled and this research provides valuable base for future researchers.

The rest of this paper is laid out as follows: the first section of the paper is

Licensed Commercial Banks in Sri Lanka?

4. What is the Impact of Money Laundering on Banking Stability of Licensed Commercial Banks in Sri Lanka?

As shown in empirical reviews, studies investigating the impact of corruption and Money Laundering on banking profitability in ASEAN countries, though the level of corruption and ML is high among these countries. However, a few studies are there refereeing to Money laundering in Sri Lankan Economy (Silva 2015; Kumari 2008) as well as Money Laundering activities in finance companies in Sri Lanka (Jayasekara & Perera, 2022).

an introduction to the research. The next section examines relevant literature. The research methodology is described in the third section. The fourth section contains the findings and discussion, while the final section provides the conclusion and recommendations.

## LITERATURE REVIEW

In economy commercial banks are closely associated with business models, consumer operations and other economic activities. It includes monthly salaries, deposit mobilization, consumer finance and borrowing money for consumption or investment purposes. In this context, past studies have highlighted the role of the banking sector in predicting an efficient business environment (Beck & Levine,

2004). Similarly, an efficient banking system is also necessary for the businesses due to their involvement in banking transactions. As well as vein, state that the banking sector has key role to strengthen industrialization in the developing economies (Bottazzi et al., 2004). However, the instability in the banking sector can cause large disruption in society and economic growth.

## **THEORETICAL LITERATURE REVIEW**

### **Conventional Corruption Theory**

Researchers have offered various definitions of corruption. Bhargava & Manoli (2015) defined corruption as the abuse of public or corporate office for private or personal benefits. Dike (2004) defined it as the violation of established rules for personal gain and profit. However, all definitions of corruption point to the fact that it is always associated with some form of fraud for personal gains.

Since the mid-1970s, corruption has infiltrated virtually every country in the world and become a global phenomenon. The problem cuts across all ethnic groups, faiths, religious denominations and political systems. It is found in democratic and dictatorial politics; feudal, capitalist and socialist economies. Christian, Muslim, Hindu, and Buddhist cultures are equally bedeviled by corruption. This does not, however, mean that the magnitude of corruption is equal in every society. Some countries, ethnic groups, religious denominations, and political systems are more corrupt than others (Dike, 2004).

There are five pre-conditions necessary for corruption to overcome under any economic, social or political order. First, it needs to be accepted by the highest level of government. A corrupt president is a guarantee of a corrupt government. Second, political office has to be widely perceived as the primary means of gaining access to wealth. Third, there has to exist a set of imperatives and incentives which encourage individuals to engage in corrupt transactions. These include widespread societal obsession with materialism, great inequality in distribution of wealth, glorification and approbation of ill-gotten wealth by the

general public, widespread poverty, and low / irregular salaries for government officials with large dependent families (Frisch, 1996).

### **A Theory Of “Crying Wolf”**

ML is the process of conversion of money from illegal activities to legitimate funds and given the appearance to have originated from legal activities (Nobanee & Ellili, 2018) money laundering is an economically significant crime. Several million rupees are washed through the financial sector, and money laundering facilitates crimes as harmful as drug trafficking and terrorism.

Takáts (2011) shows formally how excessive reporting in this situation fails to identify what is truly important by diluting the information value of reports. The intuition can be best understood through an analogy with the tale: “The boy who cried wolf”. In the tale, the boy cried wolf so often, that his cries became meaningless. Similarly, excessive reporting, which will be referred to as “crying wolf”, fails to identify what is truly relevant. This crying wolf problem will be shown to be relevant in other economic situations, such as product information and auditing as well. More generally, the model shows that information is not only data, but also able and expert identification of truly important data.

Excessive reporting or crying wolf can water down the value of the data of reports. The initial formal analysis of ML practice is triggered by excessive reporting. Banks monitor transactions and report suspicious activity to government agencies. These agencies use the data to identify investigation targets, and banks are fined should they fail to report ML. However, to avoid fines, banks resort to reporting transactions that are less suspicious, which dilutes the information (Raweh et al., 2017).

The formal model is built on five main economic building blocks. First, communication is coarse between the bank and the government, as the bank cannot communicate in a short report all the local information it has. This communication problem is similar in spirit to the information hardening problem though here the problem is not with verifying the information, but rather with telling it precisely. Second, the bank's incentives to report are coarse; the bank is fined only for false negatives, i.e., for not reporting transactions which are prosecuted later as money laundering. Third, the bank is always uncertain about the transaction's true nature, i.e., every transaction can be potential money laundering. Fourth, the bank faces dual tasks: it has to monitor all transactions in order to report suspicious ones. Fifth, the bank's information, i.e., its signal on the transaction, is not verifiable ex-post, because the local information at the time of the judgment cannot be reproduced later (Stein, 2002).

The model shows that harmful excessive reporting, called crying wolf, can arise in this setup. As the bank cannot share its signal with the government, the government must make decisions based on whether or not it observes the report. Intuitively, if the bank identifies all transactions as suspicious, then it fails to identify any one of them - exactly as if it would not have identified one. Thus, crying wolf can fully eliminate the information value of reports. Crying wolf can arise because excessively high fines for false negatives force the uncertain bank to err on the safe side and report transactions which are less suspicious. In the extreme case the bank is forced to report all transactions, thereby fully diluting the information value of reports.

## EMPIRICAL REVIEW

### Corruption and Firm Performance

Empirical studies investigating the role of corruption on bank profitability Aish et al. (2021) used the data of 53 conventional and 19 Islamic banks of Pakistan and Malaysia to have comparative insights. The empirical methods include the fixed effect and random effect regression and generalized methods of moment for robust results. Evidence presented in this study indicates that credit risk is the most important determinant for Chinese commercial banks performance, while liquidity risk has a negative impact on bank performance. The study also suggests that Islamic banks gain from corruption and ML. Corruption and ML affect bank profitability and stability positively in a less corrupt environment, i.e., Malaysia; however, corruption hurts Islamic banks' performance, and ML favors Islamic banking profitability and stability in a more corrupt environment.

Bolarinwa & Soetan (2019) analyze the effects of corruption on bank profitability. They applied panel cointegration, differenced generalized method of moments (GMM) and system GMM methods on a sample of 24 retail banks, which include 5 Islamic and 19 conventional banks during the period of 2007-2015. The results estimation from tests revealed the corruption is important in explaining the profitability of commercial banks in both developed and emerging countries. While it has mixed effects in emerging countries, only positive effect is validated in developed countries.

These studies report that firm-specific, industrial-specific and the macroeconomic variables are significant determinants of bank profitability (Garcia & Guerreiro, 2016; Tan & Floros, 2012). Recently, studies have also accounted the roles of corruption on bank activities

(Arshad et al., 2013; Chen, 2017). The work of la Porta et al. (1997) documented those countries with higher bank government ownership are linked with higher level of corruption, thus, suggesting a negative effect of corruption on bank profitability. (Akins et al., 2016; Louati & Boujelbene, 2015).

As well as Ho et al. (2019) examined the relationship between corruption, banking performance and banking stability. This study examined that the following four factors have more significant effects on bank stability: inflation rate, international financial reporting standard, transparency, and anti-corruption. The findings supported the argument that having a higher level of anti-corruption is related to high bank stability. This study also explained that investor protections like transparency and the international financial reporting standards directly associate with banking stability.

Similarly, Arshad et al. (2013) highlights Impact of corruption on bank profitability: An analysis of Islamic banks. The concept of risk corruption on bank profitability in Islamic finance and stated that most likely that Islamic banks may have been exposed to certain unscrupulous practices. This brings forth an important yet interesting discussion as sometimes corruption becomes unavoidable and this is something that is prohibited in Islam, proving to be a conflict-of-interest corruption has a significant positive impact on bank profitability. The results lend some credence to implications that banks are thriving from corruption in the country.

However, some studies have reported mixed evidence. The one empirical study that specifically studied the effect of corruption on bank profitability was undertaken by Aburime (2009). Using Transparency International's corruption perception index (CPI) and the Nigerian banking industry as a case study of ten years between 1996 and 2006, the study

reported a positive relationship between the high level of corruption in the country and bank profitability. Based on the empirical results from Nigeria.

As well as Empirical studies have also used cross-countries analysis to investigate the impact of corruption on bank profitability (Mongid & Tahir, 2011) the data of 475 banks operating in six ASEAN countries, this study reported a positive relationship between a high level of corruption and bank profitability. According to Hasan & Dridi (2011), the higher performance of Islamic banks during an economic recession is due to its nature of Islamicist of the products. Additionally, Islamic banks follow Islamic laws and offer asset-based financing. A robust growth has been experienced in the Islamic Banking industry in Pakistan. Recent facts indicate that the total assets of Islamic banks have increased by 14.4 per cent, while conventional banks' asset grew by 5.9 per cent.

Not only those studies but also Weill (2011) attempts to examine the effects of corruption on bank lending on country-level and bank-level. Results obtained from cross country regression analysis reveal a negative relationship between corruption and bank lending, which further decline bank and economic growth.

According to the existing literature on banking performance, it is found that banks take advantage of a high level of corruption to sustain their level of profitability and stability. At the same time, it is argued that corruption has a positive impact on the least corrupt environment and mixed effect in a highly corrupt environment.

### **Money Laundering and Firm Performance**

In the previous literature, several studies examining the effects of ML on the financial performance of firm

performance and economic development (Altunbaş et al., 2021; Shah et al. (2022) determined How money laundering (ML) affects the loan portfolio quality of Islamic bank. The methodology used the data of conventional and Islamic banks of Pakistan from 2012 to 2018. In this study, they used fully modified ordinary least squares, dynamic ordinary least squares, and pooled ordinary least square methods to analyze the data. This study found that corruption and ML positively affect the conventional banking non-performing loans (NPLs). In contrast, according to the study's findings, bank authorities should establish an effective method for monitoring loan activities and developing new and innovative products in Islamic banks. Additionally, the Pakistani government needs to improve anti-corruption and anti-ML policies to earn investors' trust.

A study by Nobanee & Ellili (2018) investigated the relationship between ML and banking performance and found that AML disclosure is at a low level for all UAE banks, conventional and Islamic banks. The results also show that the degree of AML disclosure on the websites of the banks is higher than that in the annual reports. Their research focused on Iranian banks' anti-ML policies (Blani, 2019). This study uses content analysis to explore the extent of AML disclosure in the annual reports and the dynamic panel data two-step robust system to study the impact of the AML disclosures on banking performance in the examination of the relationship between ML and banking performance, Nobanee & Ellili (2018) investigated the impact of AML disclosure on UAE banking performance and found that AML disclosure is at a low level for conventional and Islamic banks of UAE. This study also found that the degree of AML disclosure on annual reports is lower than bank websites. AML regulations also have various effects on the profitability of firms and stock

valuation. Stock valuation depends on the firm and market return. The researchers have investigated the AML regulation's effects and reported the mixed effects of AML regulations on banking stock valuation.

Kemal (2014) investigated some key variables affecting the effectiveness of AML regulations in Pakistan. In this exploratory study, Kemal (2014) investigated the impact of three regulations, namely: customer record keeping, employee training and suspicious transaction reporting on money laundering. By using a sample of hundred responses collected from employees working in different banks located in Pakistan, the results found a significant impact of employee training on money laundering in banking system and more particularly a moderate positive relationship between employee training and money laundering.

When examination of the factors affecting money laundering, Nair (2007) investigated the relationship between technology (information and communication technology infrastructure), quality of human capital, efficiency of the legal framework, corporate governance, and capacity for innovation on the pervasiveness of money laundering in developed and developing countries. Empirical analysis on a sample of 88 developed and developing countries during 2004-2005 showed that efficient legal framework with good corporate governance lowers the pervasiveness of the money laundering activities. In addition, the results reveal that a high innovative capacity contributes negatively to the pervasiveness of money laundering activities.

As a financial crime, money laundering requires implementation of mechanisms and structures to combat the risks so as to protect the integrity of markets and global financial architecture. Several

initiatives have been pursued to combat money laundering crime and terrorist financing. Notable examples of such initiatives include the Vienna Convention, the Council of Europe Convention in 1990, the Basel Committee Statement of Principles, the European Union Directive, the International Criminal Police Organization, the Resolution of the International Organization of Securities Commissions, the Wolfsburg Principles and the FATF (Nobanee & Ellili, 2018).

The above literature provides a consensus that corruption and ML has significant

impact on banking performance. This argument creates a gap, and it is required to address the following questions. Do corruption and ML affect banking profitability and stability of Licensed Commercial Banks in Sri Lanka? And how the licensed commercial Banking sector of Sri Lanka is going to overcome these dilemmas? The answer to these questions will help to understand the relationship between corruption, ML and banking profitability and stability particularly in the case of Licensed Commercial Banks in Sri Lanka.

## RESEARCH METHODS

This research is in line with the descriptive research design as quantitative data of profitability and stability of licensed commercial banks in Sri Lanka was used. The research design is defined as a plan for collecting and utilizing data so that desired information can be obtained. Therefore, research design is the conceptual structure within which research will be conducted. It searches the relationship between Corruption and Money Laundering on profitability and stability of licensed commercial banks in Sri Lanka.

Positivism is the research philosophy of this study. Positivism is aligned with the hypothetico - deductive model of science (Park et al., 2020). Deductive research logic was used as research logic for this study. Most of the previous studies have been conducted using descriptive research design (Arshad & Rizvi, 2013; Zaman et al., 2021).

A quantitative research approach was used to conduct this research. The quantitative method is the foundation of modern science. This approach to research usually starts with specific theory, either proposed or previously developed, which leads to specific hypotheses that are then measured

quantitatively and rigorously analyzed and evaluated according to established research procedures (Holton et al., 2001).

The main objective of this study is to identify the relationship between corruption, ML and banking profitability and stability of LCBs in Sri Lanka. The sample data of this study consists of 24 licensed commercial banks of Sri Lanka within seven years since 2015 to 2021. Within this time period the CPI index of the country has significantly increased and according to Transparency International the country ranking also increased from 83 to 102. As of 31st December 2021, The Licensed Commercial Banking sector in Sri Lanka comprise of 24 Licensed Commercial banks and researcher consider entire population as its sample according to the total population sampling method, because all the licensed commercial banks in Sri Lanka limited to 24 banks and there are several similar characteristics can identify through this entire population.

Study uses quantitative data collection method. The evidence and information will be collected for this study from secondary data sources. In the study Corruption and ML measures will derive from Transparency International and



Basel Institute of Governance, respectively. The data related to bank profitability and stability as well as Bank Size (BSIZE) and Management Efficiency (MEF) will be collected from annual reports of each licensed Commercial bank.

According to the Zaman et al. (2020) to reduce the endogeneity problem in the model we calculated the CORR by dividing the CPI by the bank size, since the CPI index provided by Transparency International is mainly based on the country level rather than the individual bank level.

### Conceptual framework

The study establishes a conceptual framework for the investigation, which is shown in the figure below.

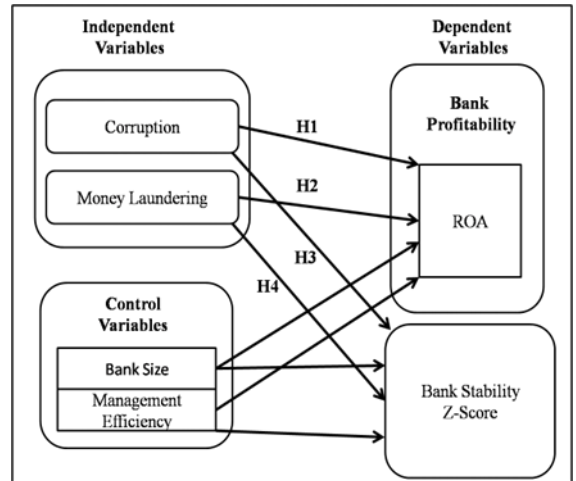


Figure 1 - Conceptual framework

Source – Author Compiled

### Operationalization

The following operationalization table shows how each variable measure and

what is the sources of data collection for the study.

**Table 1: Operationalization**

	Variables	Sign	Measurement / Reference	Source
Independent Variables	Return on Assets	ROA	Net income divided by average assets (Zaman et al.,2021; Arshad & Rizvi, 2013)	Annual Reports of Banks
	Banks Stability	BSTAB	Z-Score = ROA plus earning to total asset ratio/standard deviation ROA(Karim et al., 2018)	Annual Reports of Banks
Dependent Variable	Corruption	CORR	CPI divided by bank size (Zaman et al.,2021)	Transparency International
	Money Laundering	ML	AML index divided by bank size (Zaman et al.,2021)	Basel Institute of Governance
Control Variables	Bank Size	BSIZE	Natural log of Total assets (Zaman et al.,2021; Bolarinwa & Soetan, 2019)	Annual Reports of Banks
	Management Efficiency	MEF	Operating income divided by operating expenses (Bolarinwa & Soetan, 2019)	Annual Reports of Banks

## Hypothesis development

H1: There is a significant Impact of Corruption on Return on Assets of Licensed Commercial Banks in Sri Lanka.

H2: There is a significant Impact of Money Laundering on Return on Assets of Licensed Commercial Banks in Sri Lanka.

H3: There is a significant Impact of Corruption on Bank Stability of Licensed Commercial Banks in Sri Lanka.

H4: There is a significant Impact of Money Laundering on Bank Stability of Licensed Commercial Banks in Sri Lanka.

## Model formulation

Researcher used various empirical models to check the relationship between corruption, ML and banking profitability and stability. Therefore, researcher

formulated the following equations in the regression framework with alpha, beta and error term:

$$ROA_{i,t} = \alpha_0 + \beta_1 CORR_{i,t} + \beta_2 ML_{i,t} + \beta_3 BSIZE_{i,t} + \beta_4 MEF_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$BSTAB_{i,t} = \alpha_0 + \beta_1 CORR_{i,t} + \beta_2 ML_{i,t} + \beta_3 BSIZE_{i,t} + \beta_4 MEF_{i,t} + \varepsilon_{i,t} \quad (2)$$

Were,

ROA = Return on Assets

BSTAB = Bank Stability

CORR = Corruption

ML = Money Laundering

BSIZE = Bank size

MEF = Management efficiency

$\alpha$  = Intercept

$\varepsilon$  = Error term

## FINDINGS AND DISCUSSION

### Findings

#### Panel Unit Root Test

To analyze the order of integration and the distributional properties of data series, researchers applied panel unit root test. According to Alam & Paramati (2015) the application of unit root testing of panel models is relatively a new phenomenon. This has attracted the attention of economists to use panel unit root test in their study models. Based on the advantages, researcher used panel unit root test to check the stationary properties of the variables.

Null hypothesis (Ho): Panels contain unit Roots.

Alternative hypothesis (H1): Panels are Stationary.

Results show that six variables are stationary at levels without being

differentiated. The probability of all variables is significant at 1% probability level. So as per the results, we reject the null hypothesis and concluded that panels are stationary.

### Descriptive Statistics

The descriptive statistics section presents descriptive statistics to explain the explanatory variables used in this study. The explained variables are the bank profitability and stability and explanatory variables used are Corruption and Money Laundering and also control variables such as BSIZE and MEF. Table2 below shows the descriptive statistics of the study.

The mean value of the ROA over the seven years period was 0.019. That demonstrates a non remarkable performance of the Banks in the period of the study because the minimum ROA was -0.031. The maximum value of ROA was 0.078. The standard deviation for the

ROA was 0.015. Further, the results depicted the mean value of BSTAB was 6.476. The maximum value and minimum value of BSTAB were 16.896 and -3.050 respectively. That implied BSTAB was also not performing remarkable position. Its standard deviation 4.418 deviated from the mean value.

Descriptive statistics also show that the mean and standard deviation values of CORR are 1.961 and 0.355. This shows the high corruption level in Sri Lanka within this period. Similarly, in this

period, the mean and standard deviation values of ML is 0.358 and 0.057, respectively whereas, these indices show that there is a high level of CORR and ML within this period.

Finally, the study used two control variables to assess the impact of corruption and money laundering on bank profitability and stability. The overall mean and standard deviation of BSIZE is 18.333 and 3.296 respectively. As well as MEF mean is 2.451 and standard deviation is 2.097.

**Table 1: Descriptive Statistics Analysis**

Variable	Mean	Std Dev	Min	Max	Observations
ROA	0.019	0.015	-0.031	0.078	168
BSTAB	6.476	4.418	-3.050	16.896	168
CORR	1.961	0.355	0	2.542	168
ML	0.358	0.057	0	0.470	168
BSIZE	18.333	3.296	0	22.059	168
MEF	2.451	2.097	0	13.759	168

*Source – Author Compiled*

### Correlation Analysis

Table 3 presents the correlation Metrics of each variable of the study. According to table, the correlation between ROA and all independent and control variables has significant positive relationship. ROA and CORR have a positive relationship of 0.237, ROA and ML have positive relationship of 0.281 and also ROA and BSIZE have a positive relationship of 0.091 as well as ROA and MEF have a positive relationship of 0.457.

Moreover, as the table shows that there is a positive relationship between BSTAB and all other independent variables other than BSTAB and CORR. According to the table there was a negative relationship of 0.034 among BSTAB and CORR, positive relationship of 0.004 among BSTAB and ML, positive relationship of 0.421 among BSTAB and BSIZE and there is a positive relationship between BSTAB and MEF.

**Table 2: Correlations Analysis of Dependent and Independent Variables**

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) ROA	1.000					
(2) BSTAB	0.466	1.000				

(3) CORR	0.237	-0.034	1.000			
(4) ML	0.281	0.004	0.966	1.000		
(5) BSIZE	0.091	0.421	0.514	0.493	1.000	
(6) MEF	0.457	0.116	0.255	0.245	0.062	1.000

*Source – Author Compiled*

## Regression Results

### Hausman test

Researchers used Hausman test to confirm whether fixed or random effects are appropriate for the research study. According to this study for the two dependent variables, researchers used two Hausman tests.

Table 4 presents the Hausman test results for variables, according to the test results researcher can conclude that the random

**Table 3: Hausman (1978) specification test**

variable	Chi-square test value	P Value
ROA	2.496	0.6450
BSTAB	20.17	0.0005

*Source – Researcher Compiled*

For the first part of the regression analysis of ROA with the independent variables, researcher used a random effect regression on sample data, as seen in Table 5. The  $R^2$  of the model with a statistical significance of  $P < 0.05$  was 24.69. R-squared identifies the goodness of fit of the model. This figure tells us that the model explains the variations in the profitability of the banks over the 7-year period by the explanatory variables of CORR, ML, BSIZE and ME.

According to the Table the correlation coefficient value for Corruption and ROA was -0.0272 and it was a strong negative relationship between the above variables. According to the table the significance value is 0.002 ( $P < 0.01$ ) hence both variables are significant at 0.01 level. Therefore, it can be identified that there

effect model is most suitable for the ROA regression model because the p value ( $\text{Prob} > \text{Chi}^2$ ) of the test results is higher than 5% because researcher failed to reject the null hypothesis of random effects would be consistent and efficient.

As well as researcher can conclude that the Fixed effect model is most suitable method for BSTAB regression model by rejecting the null hypothesis within the probability level of 5% and continue with fixed effect model.

is a statistically significant and strong negative relationship between Corruption and ROA. These results supported the first hypothesis of the study.  $H_1$ : There is a significant impact of Corruption (CORR) on Return on Assets (ROA) of Licensed Commercial Banks in Sri Lanka.

According to the table the correlation coefficient value for ML and ROA was 0.1798 and it was a strong positive relationship between the above variables. According to the table the significance value is 0.000 ( $P < 0.01$ ) hence both variables are significant at 0.01 level. Therefore, it can be statistically said that there was a significant and strong negative relationship between ML and ROA. These results supported the second hypothesis of the study.  $H_2$ : There is a

significant impact of Money Laundering (ML) on Return on Assets (ROA) of Licensed Commercial Banks in Sri Lanka.

Hence the correlation coefficient value for Bank Size (BSIZE) and ROA was 0.1798 and it was weak positive relationship between above variables. According to the table the significance value is 0.942. Therefore, it can be statistically said that there was no significant relationship between BSIZE and Return on Assets (ROA).

According to the table the correlation coefficient value for MEF and ROA was 0.0031 and it was strong positive relationship between above variables. According to the table the significance value is 0.000 ( $P < 0.01$ ) hence both variables are significant at 0.01 level. Therefore, it can be statistically said that there was a significant and strong positive relationship between MEF and ROA.

**Table 4: Regression Results of the Study**

Dependent variable: ROA				
Independent variables	Coefficients	Standards errors	Z-values	P-values
CORR	-0.0272 <sup>***</sup>	0.0088	-3.06	0.002
ML	0.1798 <sup>***</sup>	0.0481	3.74	0.000
BSIZE	0.0000	0.0000	0.07	0.942
MEF	0.0031 <sup>***</sup>	0.0032	8.29	0.000
Constant	0.0002	0.0003	0.09	0.932
No. of groups	24			
No. of observations	168			
P-value	0.0000			
R-squared	0.2649			
Adj R-squared	0.2469			

This table reports coefficients, standard errors, and z-values from the estimation. \*, \*\*, \*\*\* denote statistical significance at the 10%, 5% and 1% level, respectively.

*Source – Researcher Compiled*

Furthermore, for the second model of the regression analysis researcher used fixed effect model. In the BSTAB regression model also had  $R^2$  of 29.92% at the 0.05 significance level. The results show that the independent variables explain 29.92% of the dependent variable.

According to table 6 the regression coefficient value for Corruption and Bank Stability was -12.0455 and it was a strong

negative relationship between above variables. According to the table the significance value is 0.000 ( $P < 0.01$ ) hence both variables are significant at 0.01 level. Therefore, it can be stated that there is a statistically significant and strong negative relationship between Corruption and Bank Stability. These results supported the third hypothesis of the study.  $H_3$ : There is a significant

impact of Corruption (CORR) on Bank Stability (BSTAB) of Licensed Commercial Banks in Sri Lanka.

As shown in the table the regression coefficient value ML and BSTAB was 39.0979 and it was a strong positive relationship between the above variables. According to the table the significance value is 0.013 ( $P < 0.05$ ) hence both variables are significant at 0.05 level. Therefore, it can be stated that there is a statistically significant and strong positive relationship between Corruption and Bank Stability. These results supported the fourth hypothesis of the study.  $H_4$ : There is a significant impact of Money laundering (ML) on Bank Stability (BSTAB) of Licensed Commercial Banks in Sri Lanka.

According to the table the regression coefficient value for BSIZE and BSTAB

was 0.8256 and it has a strong positive relationship between the above variables. According to the table the significance value is 0.000 ( $P < 0.01$ ) hence both variables are significant at 0.01 level. Therefore, there is a statistically significant and strong positive relationship between BSIZE and BSTAB.

According to the table the regression coefficient value for MEF and Bank Stability was 0.3788 and it was a strong positive relationship between above variables. According to the table the significance value is 0.000 ( $P < 0.01$ ) hence both variables are significant at 0.01 level. Therefore, it can be stated that there is a statistically significant and strong positive relationship between MEF and Bank Stability.

**Table 5: Regression Results of the Study**

Dependent variable: BSTAB				
Independent variables	Coefficients	Standards errors	Z-values	P-values
CORR	-12.0455***	3.0168	-3.99	0.000
ML	39.0979**	15.818	2.47	0.013
BSIZE	0.8256***	0.0670	12.32	0.000
MEF	0.3788***	0.1001	3.78	0.000
Constant	0.2724	1.1080	0.02	0.980
No. of groups	24			
No. of observations	168			
P-value	0.0000			
R-squared	0.3160			
Adj R-squared	0.2992			

This table reports coefficients, standard errors, and z-values from the estimation. \*, \*\*, \*\*\* denote statistical significance at the 10%, 5% and 1% level, respectively.

*Source – Researcher Compiled*

**Hypothesis Testing****Table 6:Hypothesis Testing**

	<b>Hypothesis</b>	<b>Regression results</b>
H <sub>1</sub>	There is a Significant Impact of Corruption on Return on Assets (ROA) of Licensed Commercial Banks in Sri Lanka.	Accepted 0.002
H <sub>2</sub>	There is a Significant Impact of Money Laundering on Return on Assets (ROA) of Licensed Commercial Banks in Sri Lanka.	Accepted 0.000
H <sub>3</sub>	There is a Significant Impact of Corruption on Bank Stability of Licensed Commercial Banks in Sri Lanka.	Accepted 0.000
H <sub>4</sub>	There is a Significant Impact of Money Laundering (ML) on Bank Stability.	Accepted 0.013

*Source – Researcher Compiled***Other diagnostics test results****Normality Test**

One of the most widely used instruments in the first step of analyzing a data set is the assumption of normality. The commonly assumed normality helps us to estimate and make inferential comparisons and judgments. However, violation of this assumption might produce misleading inferences and the result of using unreliable inferences is misleading interpretations. That is, testing for normality should be at least an important step (Mantolos, 2011). The most widely used method in

econometrics that has been suggested and used for testing whether the distribution underling a sample is normal (Bowman & Shenton, 1975).

The skewness of normal data, distribution should be between -2 and +2, while the kurtosis should be near +5. In this study the dependent variables are in-between the -2 skewness +2 range, according to the data in table 8. This indicates that the data is approximately normally distributed. Two dependent variables kurtosis values are below +5. This indicates that the data is platykurtic.

**Table 7:Skewness and Kurtosis Test**

	<b>ROA</b>	<b>STAB</b>
Observations	168	168
Skewness	0.2.97	0.230
Kurtosis	4.964	2.553

*Source – Author Compiled*

### Multicollinearity Test

Multicollinearity appears when two or more independent variables in the regression model are correlated. A little bit of multicollinearity sometimes will cause big problems but when it is moderate or high then it will be a problem to be solved.

Multicollinearity, or near-linear dependence, is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated. If there is no linear relationship between predictor variables, they are said to be orthogonal (Daoud, 2017).

There are two steps to check whether Multicollinearity exists. Those are Intercorrelation matrix and Tolerance value and variance inflation factor (VIF).

### Intercorrelation Matrix

Compare the correlation of each independent and control variable using an Intercorrelation matrix, there is a high risk of Multicollinearity if the coefficient of inter-correlation Matrix is higher than 60% between two independent variables. If the coefficient of two independent variables is weak (lower than 60%), the risk of Multicollinearity will be less.

Table 9 presents the correlation matrix among variables. A general overview shows that Multicollinearity is not an issue in the model as most of the coefficients are below 60 per cent. The only exception is the coefficients of correlation between CORR and ML in the model, which is higher than 90 per cent.

**Table 8: Correlation Matrix for Independent Variables**

Variables	(1)	(2)	(3)	(4)
(1) CORR	1.000			
(2) ML	0.966	1.000		
(3) BSIZE	0.514	0.493	1.000	
(4) MEF	0.255	0.245	0.062	1.000

*Source – Author Compiled*

According to table 9, the correlation coefficients of ML and CORR the inter correlation matrix is 0.966. That indicates that there may be Multicollinearity between those variables.

Relying only on Correlation between pairs of predictors has limitation, the small or large value of correlation is something subjective depends on individual and also on the field of research that is why most of the time to detect the Multicollinearity we used the indicator variance inflation factor (VIF).

### Indicator called Variance Inflation Factors (VIF) Test

When correlation exists among predictors the standard error of predictors coefficients will increase and consequently the variance of predictor's coefficients is inflated. The VIF is a tool to measure and quantify how much the variance is inflated.

If the VIF values are greater than 10 and the tolerance value is less than 0.1, there is a high risk of Multicollinearity. If the VIF values are less than 10 and the tolerance values are greater than 0.1, the risk of Multicollinearity will be lower.



According to the VIF test results CORR and ML variables VIF values are greater than 10 as well as Tolerance values are less than 0.1. This indicates that there is a risk of Multicollinearity. Therefore, researcher minimized the effect of Multicollinearity between the variables. However, the overall model was free from Multicollinearity as the overall mean VIF was less than 10.

### **Test for Heteroskedasticity**

Heteroskedasticity is the Standard errors of a variable, monitored over a specific amount of time, which are non-constant. Researchers conducted two Heteroskedasticity tests for both random and fixed effects models. According to the Wald Test results, researcher rejected the null hypothesis and conclude that there is a Heteroskedasticity effect since the  $p$  value  $< 0.05$ . To mitigate the Heteroskedasticity effect researcher used 'robust' option to obtain robust standard errors, which is also known as Huber/White or sandwich estimators.

### **Test for Serial Correlation (Autocorrelation)**

Serial correlation is the relationship between a dependent variable and an independent version of itself over various time intervals. In this research study, researchers used Wooldridge test to test the autocorrelation of the study. To test the serial correlation, the following hypothesis were developed.

Null hypothesis (H0): No first-order autocorrelation

Alternative hypothesis (H1): Autocorrelation

According to the test results in the model of ROA there was no first order autocorrelation since the  $p$  value was greater than 0.05, hence the researcher failed to reject the null hypothesis. But in BSTAB model researcher could identify Autocorrelation as the  $P$  value was lesser than 0.05 probability level.

### **Test for Cross-sectional Dependence**

Based on the results of the Pesaran's test of cross-sectional independence, researcher conclude that there is a cross sectional dependence between independent variables and the dependent variables since the  $P$  value of the test is lesser than 0.05 significance level. Therefore, researchers rejected the null hypothesis and concluded cross sectional dependence.

## **DISCUSSION**

Study results take into consideration the main aspects of the determinants of impact on bank profitability and stability. Corruption, Money Laundering, Bank Stability and MEF were the four variables that were used to measure the impact of corruption and ML on bank profitability and stability. In this section, the findings are further discussed in consideration of the conclusions reached in the present findings. Four main objectives have been developed by the researcher to provide the answer to the main research problem of this study.

The first objective is "to identify the impact of Corruption on banking profitability of licensed commercial banks in Sri Lanka."

The second objective is "to identify the impact of Corruption on banking stability of licensed commercial banks in Sri Lanka."

The third objective is "to identify the impact of Money Laundering on banking profitability of licensed commercial banks in Sri Lanka."

The fourth objective is "to identify the impact of Money Laundering on banking Stability of licensed commercial banks in Sri Lanka."

Based on the study's descriptive analysis, mean value of the Corruption was 1.961 and standard deviation is 0.355.

Therefore, it indicated that the higher level of corruption may tend to decrease the ROA as well as the Stability of the bank. The correlation between corruption and ROA was 0.237 and corruption and Bank Stability was -0.034. And as per table5 Beta coefficient ROA and CORR was -0.0272 and as per table6 BSTAB and corruption was -12.045. It shows that there is negative strong relationship between Corruption and bank profitability and bank stability. Because Regression Coefficients are significant at the level of 0.01 probability level in both scenarios. It means an increase Corruption led to a decrease in the ROA and stability of the bank. As per the regression analysis, the beta coefficient for corruption was negative with bank profitability as well as with Bank Stability. It reveals that if corruption level is higher, profitability of the bank may lower. Therefore, there is significant impact between corruption and ROA and bank stability. In addition, to that according the hypothesis developed by the researcher. As all results there is a significant impact of corruption on bank profitability. Further, there is a significant impact of corruption on bank stability. According to empirical research findings Asteriua et al., (2020) found that corruption and transparency have a negative effect on bank profitability and bank stability, while Zaman et al., (2021) found consistent evidence that corruption has a positive relationship with the banking profitability of Pakistan and Malaysia.

Based on the study's descriptive analysis, mean value of the ML was 0.358 and standard deviation is 0.057. Therefore, it indicated that the higher level of ML may tend to increase the ROA as well as the Stability of the bank. The correlation between ML and ROA was 0.281 and ML and Bank Stability was 0.004. As per table5 coefficient ROA and ML was 0.1798 and as per the table 6 BSTAB and ML was 39.097. It shows that there is a

positive strong relationship between ML and bank profitability and bank stability, since regression coefficients are significant at the 0.05 probability level in both scenarios. Hence, an increase in ML led to an increase in the return on assets and stability of the bank. As per the regression analysis, the beta coefficient for ML was positive with bank profitability as well as with Bank Stability. It reveals that the higher the ML, profitability and stability of the bank may be higher. Therefore, there is a significant impact between ML and ROA and bank stability. As per all results there is a significant impact of ML on bank profitability. There is a significant impact of ML on bank stability. According to Zaman et al., 2020 it was indicated that there was significant impact of ML on bank profitability and stability. In addition, Shah et al., 2021 found that corruption and ML positively affect the conventional banking non-performing loans (NPLs). In contrast, corruption and ML harm the Islamic bank's loan portfolio quality

According to the study's descriptive analysis, the mean value of the BSIZE was 18.333 and standard deviation is 3.296. Therefore, it indicated that the higher level of BSIZE may tend to increase the ROA as well as the Stability of the bank. The correlation between BSIZE and ROA was 0.091 and BSIZE and Bank Stability was 0.004. The beta coefficient ROA and BSIZE were not significant at the level. According to Arshad & Rizvi (2013) the relationship between BSIZE and profitability was not significant at the Fixed effect regression model. The P-value of the bank value of this study was 0.774 and as per the table 6 BSTAB and BSIZE was 0.8256. It shows that there is positive strong relationship between BSIZE and bank stability, as correlations significant at the 0.05 probability level in BSTAB regression scenario. It means an increase in BSIZE led to an increase in the

stability of the bank. As per the regression analysis, the beta coefficient for BSIZE was positive with Bank Stability. It reveals that if the banks have higher BSIZE, profitability of the bank may higher. Therefore, there is a significant impact between BSIZE and bank stability. In addition to that, according to the study's results, there is a significant impact of BSIZE on bank stability. According to Zaman et al. (2021) it is indicated that there was significant impact of Money Laundering on bank profitability and stability.

As well as according to the study's descriptive analysis, the mean value of the MEF was 2.451 and standard deviation is 2.097. Therefore, it indicated that the higher level of MEF may tend to increase the ROA as well as the Stability of the bank. According to table 3, the correlation between MEF and ROA was 0.457 and MEF and Bank Stability was 0.116. The coefficient ROA and MEF was 0.0031 and as per the table 6 BSTAB and MEF was 0.3788. It shows that there is a positive strong relationship between MEF and bank profitability and bank stability, as correlations are significant at the 0.05 probability level in both scenarios. It indicates that an increase MEF led to an increase in the ROA and stability of the bank. As per the regression analysis, the beta coefficient for MEF was positive with bank profitability as well as with Bank Stability. It reveals that if MEF was higher, profitability of the bank may be higher. Therefore, there is a significant impact between MEF and ROA and bank stability. In addition to that, according to the hypothesis developed by the researcher, there is a significant impact of MEF on bank profitability and there is a significant impact of MEF on bank stability. According to Zaman et al. (2021) it is indicated that there was significant impact of Management Efficiency on bank profitability and stability.

## CONCLUSION

The primary aim of the researcher was to find out the Effect of Corruption and ML on Banking Profitability and Stability of Licensed Commercial Banks in Sri Lanka. The research was conducted based on a sample of 24 licensed commercial banks. In order to generate results relevant to the research problem, descriptive statistics, correlation analysis, and regression analysis were established.

The Effect of Corruption and Money Laundering on Banking Profitability and Stability was evaluated using descriptive statistics. The relationship between the Return on Assets, Bank Stability and independent variables were also investigated using correlation analysis. Moreover, regression analysis was used to examine the impact of each of the independent and control variables on bank profitability and stability. For data analysis, researchers have used the FE and RE econometric techniques by using the sample data of 24 licensed commercial banks in Sri Lanka from 2015- 2021. Additionally, researchers used the Unit root test to analyze the stationary properties of the variables. Researcher found that corruption has a negative, ML has a positive while the MEF has positive significant relationship with the banking profitability in licensed commercial banks in Sri Lanka. In the case of banking stability, the study found that ML, BSIZE, MEF have a positive impact on the banking stability while Corruption has negative impact on bank stability of licensed commercial banks in Sri Lanka. The important policy implications that arise from this research are that the bank managers should put strong corporate governance mechanisms to reduce the anti-corruption and AML practices in banks of Sri Lanka.

## IMPLICATION

We first consider the direct impact of corruption on the profitability of the

banking system. Estimation outcomes show that a high level of corruption leads to less profitable banks and also leads to less stable banking system.

On the other hand, according to the test results ML positively impacts on bank profitability as well as the bank stability.

According to Zaman et al. (2021), the important policy implications that arise from this research are that the bank managers should put strong corporate governance mechanisms to reduce the anti-corruption and AML practices in banks. This research study will be helpful for the Licensed Commercial Banks to enhance their knowledge in Corruption and ML on bank performance to mitigate their risk. The banks can consider these findings when they make their lending decisions for the new business and also existing businesses, thus it helps them to mitigate the risk of lending.

And, based on the findings of the study, the Government can take necessary actions to uplift the knowledge of Corruption and ML in accordance with the findings of this research.

Furthermore, the findings of this study will be useful for future researchers to enhance their knowledge on the impact of corruption and ML on bank profitability and stability.

## **RECOMMENDATIONS**

Based on the research findings, researchers can conclude that there is a significant impact of corruption and ML on bank profitability and stability. Government of Sri Lanka should formulate strong Anti-Corruption and Anti-money laundering policies. Moreover, bank managers should put strong corporate governance mechanisms to reduce the anti-corruption and AML practices in banks of Sri Lanka.

## **LIMITATIONS**

The time period of the observation used in this study was limited to seven years (2015 to 2021). Thus, a more broadened sample that covers more time horizons will help to understand the relationship of the variables further. Moreover, the study only focuses on licensed commercial banks in Sri Lanka. Thus, it may not be applicable to entire banking sector in Sri Lanka.

The implication of corruption and money laundering on bank profitability and stability is an indirect measurement because researchers consider a measure of corruption and AML indexes on country level instead of bank level. For this study researchers used Corruption perception index and Anti money laundering index based on country level not for the bank level. Further, the researchers only consider bank specific control variables to measure the impact other than macro-economic variables.

Furthermore, this study used data in Sri Lankan context only. Researcher only consider about Licensed Commercial banks in Sri Lanka.

## **SUGGESTIONS FOR FUTURE RESEARCH**

Future academics interested in investigating the impact of Corruption and Money Laundering on bank profitability and stability may inquire about the following suggestions. It is Preferable to collect data from both Licensed Commercial banks and licensed specialized banks to increase the data range. Further, it is more favorable if the future researchers can increase the data collection time range of the study. Moreover, this study suggests that forthcoming studies can use bank-level corruption and money Laundering data to determine bank stability.

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