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The Impact of the Covid-19 Pandemic and the Post-Pandemic Economic Crisis on the Profitability of Sri Lankan Commercial Banks

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ABSTRACT

Purpose: The purpose of this study is to uncover the impact of recent crises on the primary profitability of domestic commercial banks in Sri Lanka. We consider the return on assets (ROA) to be the profitability indicator, and the Covid-19 health crisis (from 2020 to 2021) and the post-pandemic economic crisis (from 2022 to 2023) as the recent crises. We are motivated to consider the ROA because it is a key profitability measure for banks, and recent studies have missed it as a variable.

Design/Methodology/Approach: We use annual data from 2011 to 2023 for ten leading domestic private and public commercial banks. The results are obtained by performing a panel regression and mean comparison tests. We use bank size, capital ratio and deposit ratio as firm-specific control variables and real GDP growth rate and inflation rate as macroeconomic control variables in the panel regression.

Findings: The findings of our study show that ROA is lower during crises than pre-crisis period. The additional analysis shows that the negative impact of both crises recovered during the second crisis year. Further, the results show that no crisis is superior to each other, indicating that the transformation of the crisis from a health crisis to an economic crisis has not made the situation better or worse. The panel regression results show that the negative impact of crises is weak because its statistical significance disappears when controlled for bank-specific and economic conditions. This finding indicates that domestic commercial banks have maintained profitability by managing the crisis incident effectively with the support of the Central Bank of Sri Lanka.

Originality: This study is the first research that uncovers the influence of both the Covid 19 health crisis and the post pandemic economic crisis on the profitability of commercial banks.

KEYWORDS

Commercial Banks,
Covid-19, Economic
Crisis, Post Pandemic,
ROA

JEL CLASSIFICATION

G01, G21, E22

I. Introduction

The Covid-19 pandemic has negatively influenced the world in many ways as a health crisis, economic crisis (Wu, 2022; Zhang et al., 2021; Makokera & Makokera, 2020; Kumari & Bharti, 2021) and a social problem (Vasileva et al., 2021; Seck et al., 2021; Wang et al., 2022). Further, the impact of Covid-19 has challenged many sectors of the economy, such as international trade and investment (Hejazi & Tang, 2021;

Zhang et al., 2021), employment (Komin et al., 2021), national output and prices (Islam, 2021). Furthermore, the level of resilience of various nations' financial systems was challenged due to Covid-19 and was getting attention globally as a key sector impacted by the Covid-19 crisis (Apergis, 2022; Talbot & Ordonez-Ponce, 2022). Moreover, Central Banks around the world were seeking measures to protect the financial system from negative Covid-19 shocks (Long et al., 2022). However, exogenous

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shocks such as Covid-19 could make the lending business difficult and unprofitable by increasing default probability and loss severity. Further, Covid-19 has transformed into a post-pandemic economic crisis in Sri Lanka.

The key economic drivers were injured during the pandemic, which created significant fiscal shortages. Samarakoon (2024) shows that unsustainable public loan management, which was biased towards foreign commercial loans, coupled with financing large fiscal deficits, created the economic crisis in Sri Lanka. Therefore, the question of whether the nation's banking system is strong enough to tolerate the post-pandemic economic shock takes considerable importance because the health of the bank network directly impacts the health of the economy. For example, Uhlig (2010) shows that the 2008 financial crisis reminds us of a bank run. Therefore, it is vital to uncover the impact of Covid-19 and the post-pandemic economic crisis on the bank's performance.

Furthermore, Danisman et al. (2021) show that foreign banks largely contribute towards a resilient banking system, indicating a higher strength to tolerate Covid-19 shock by foreign banks. However, it needs to be clarified whether domestic banks could protect their performance by contributing in isolation towards a resilient financial system. Therefore, examining the impact of the crisis on domestic banks enhances the current understanding by uncovering an unknown aspect of the Covid-19 and post pandemic economic crisis. Further, investigating this problem concerning commercial banks is essential due to the critical role played by commercial banks in the financial system through money creation. Further, commercial banks are important in countries like Sri Lanka as they hold the largest share of the total assets in the financial system. According to the Central Bank Report 2021, 55 percent of the share of the total assets in the financial system are held by commercial banks,

indicating that commercial banks dominate the financial system in Sri Lanka.

However, research that investigated the impact of both Covid-19 and the post-pandemic economic crisis on the banking sector in Sri Lanka is rare. Harshana and Wanniarachchige (2022) show that the Net Interest Margin, Return on Equity (ROE) and Non-Performing Loans of Sri Lankan banks have been negatively impacted by Covid-19. However, Return on Assets (ROA) dominates as a performance measure for banks, as banks' profitability is driven by their asset base. Furthermore, ROA is a key financial metric that various stakeholders follow, and it provides insights into financial health, profitability, and overall performance. Therefore, we consider the ROA as the performance proxy and compare the bank profitability between before and during the COVID-19 pandemic and post-pandemic crises. Furthermore, we identify Covid-19 and economic crisis as variables and test their impact on bank profitability while controlling for documented bank-specific and macroeconomic factors in the literature. We contribute to the existing literature by uncovering not only the impact of Covid-19 on banks' profitability but also the impact of the economic crisis on banks' profitability. Further, as an additional analysis, we first separate the Covid-19 and economic crisis as the first and second crisis years and test the statistical difference in ROA between them. Second, we test whether any crisis becomes superior to the other. We hypothesize that ROA is statistically different during crises and that the impact of crises remains statistically significant after controlling for firm-specific and macroeconomic variables. The results reveal that ROA is lower during crises, but the impact of crises is not statistically significant after including control variables. Additional analysis shows that the transformation of the crisis from a health crisis to an economic crisis has neither improved nor worsened the situation. Moreover, the banks and governing bodies can make decisions and strengthen the

policies using the insights provided by this study. Therefore, the contribution of this paper is significant.

The rest of this paper is structured as follows. Section 2 reviews related literature and develops hypotheses. Section 3 uncovers the research methodology. The results are revealed in section 4, and finally, section 5 provides the conclusion.

II. Literature Review and Hypotheses Development

Covid-19 has changed the usual pattern of life. Many countries, including Sri Lanka, have imposed travel restrictions restricting people from going outside. Further, people had to stay in their homes and get used to work-at-home and an online culture. Moreover, these changes hampered the daily income and normal business of firms. For example, Covid-19 has impacted different components of tourism (Price et al., 2022), transportation (Kökény et al., 2022), retail business (Music & Charlebois, 2022), manufacturing firms (Butt, 2021) and construction sector (Ayat et al., 2021). One of the main Covid-19 impacted components is the firm performance (Shen et al., 2020). The firm's profitability becomes weak due to deteriorated demand, consumption, and disposable income, which comes with Covid-19 restrictions. Further, the requirement for more liquid assets and delaying profitable projects due to increased risk in the business environment draws down profits further. In this context, the banks also have been influenced by Covid-19 in many ways. For example, the banks underwent a digital transformation phase during Covid-19 to survive and grow (Theiri & Alareeni, 2023). Further, offering banking services digitally has become a critical factor in determining customer retention (Egala et al., 2021). All these efforts are supposed to mitigate the negative impact of Covid-19 on banks. Therefore, the banks' performance could not change between before and during the Covid-19 period.

Further, Ghosh and Saima (2021) identify three types of banks based on bank resilience as high, medium and low, indicating that Covid-19 impact could vary across banks. However, Ordóñez-Ponce et al. (2022) show that banks in Canada are negatively impacted by Covid-19. Further, Xie et al. (2021) show that Covid-19 has affected banks' ROA in emerging Asian economies. However, the banks' profitability amid post pandemic crisis is yet to be investigated.

Accordingly, by developing the following two hypotheses, we test whether the banks' primary profitability has become statistically different before and during the Covid-19 pandemic and before and during the post pandemic economic crisis.

H₁: *ROA of domestic commercial banks is statistically different between pre and during Covid-19 periods.*

H₂: *ROA of domestic commercial banks is statistically different between pre and during post pandemic economic crisis periods.*

On the other hand, firm-specific and macroeconomic factors impact banks' profitability. Accordingly, the factors below have been widely documented in the literature as firm-specific and macroeconomic factors that influence banks' performance.

One of the key bank-specific factors is the bank's size. The previous studies document both positive (Alp et al., 2010; Dogan, 2013) and negative (Ben-Naucer, 2003; Spathis et al., 2002) relationships between the bank's performance and size. Further, Bikker and Hu (2002) show that a positive relationship is linked to the economies of scale of large banks. Arguments for the negative relationship show that interest margins are inversely related to size (Ben-Naucer, 2003). Further, Swarnapali (2014) documents a positive relationship between size and the bank's performance in Sri Lanka. The second internal factor is the capital ratio. In

the case of capital ratio, Ben-Naceur (2003) shows that lower bankruptcy costs and distress costs due to a higher capital ratio leads to higher profitability. Further, documented evidence suggests that the higher the share of equity, the better the performance (Obamuyi, 2013). Moreover, the traditional risk-return trade-off suggests that higher risk created with a lower capital ratio could lead to higher profitability. The next important firm specific factor is the deposit ratio. Banks can open profitable lending avenues easily if they have sufficient deposits in the bank. This argument is confirmed by Lee and Hsieh (2013) by documenting a positive relationship between the deposit ratio and the bank's performance. However, idling deposits can increase costs by reducing profitability. In the case of established macroeconomic factors, the GDP growth rate and inflation have become more critical. Higher demand for banking products can be expected when investment is encouraged to expand the national output. Therefore, banks' performance can be expected to increase during higher GDP growth periods. Athanasoglou et al. (2014) and Bikker and Hu (2002) also show that GDP growth is positively associated with bank performance. The relationship between inflation and bank performance can be positive when the inflation is expected to be effectively passed to the bank customers (Flamini et al., 2009).

Further, Xie et al. (2021) show that the way that different economic and firm-specific factors influence the banks' performance has changed significantly in Asian emerging economies with Covid-19 pandemic. Further, the post pandemic economic shock can reshape how firm-specific factors impact banks' performance. Therefore, it is important to control these factors and isolate the Covid-19 and post pandemic economic impact when testing its significance. Accordingly, we test the hypotheses below.

H₃: *The Covid-19 impact on the primary profitability of domestic commercial banks is statistically significant after controlling for macroeconomic and bank-specific factors.*

H₄: *The post pandemic economic crisis impacts the primary profitability of domestic commercial banks significantly after controlling for macroeconomic and bank-specific factors.*

The section below reports the methods used to test these hypotheses.

III. Methodology

Data and Sample

This is a quantitative study that uses secondary data. This study considers annual data from 2011 to 2023 related to 10 leading domestic commercial banks in Sri Lanka. The data are gathered from the bank's annual reports. Data for macroeconomic variables are collected from the Central Bank of Sri Lanka. The population consists of 13 domestic commercial banks. The sample includes 10 banks representing 90 percent of the total assets of domestic commercial banks in Sri Lanka.

Variables

Table 1 demonstrates the variables and their definitions. Accordingly, Return on Assets (ROA) is calculated by dividing net profit by total assets (Swarnapali, 2014). This study considers ROA when comparing the banks' performance between pre and during Covid-19 period. Moreover, the ROA is the dependent variable of the panel regression model. Further, the Covid-19 dummy variable takes values 1 from 2020 to 2021 and 0 otherwise (e.g. Harshana and Wanniarachchige, 2022). Further, the Covid dummy is an independent variable of the panel regression model. Next, we consider economic crisis as a dummy variable that takes value 1 from 2022 to 2023 and 0 otherwise. We label the economic crisis variable as "Crisis". Further, the Crisis

dummy is an independent variable of the panel regression model. Next, we consider Bank Size, Capital Ratio and Deposit Ratio as the firm specific control variables. Bank Size is the natural logarithm of total assets (Swarnapali, 2014), Capital Ratio is calculated by dividing total equity by total

assets and Deposit Ratio is calculated by dividing total deposits by total assets (Menicucci & Paolucci, 2016). Finally, macroeconomic control variables are real GDP growth rate and the inflation rate (Adelopo et al., 2018).

Table 1. Variable Definition

	Variable	Measurement	Source
Bank profitability	Return on Assets	Net profit divided by total assets.	Swarnapali (2014)
Main explanatory variables	Covid-19 pandemic (dummy variable)	Covid has received two unique values, 0 and 1, where covid equals 1 if the data belongs from 2020 to 2021, otherwise equal to 0.	Harshana and Wanniarachchige (2022)
	Economic Crisis (dummy variable)	The dummy variable has been coded as 1 for the period from 2022 to 2023 and 0 otherwise.	Author Estimation
Bank specific control variables	Bank size	The natural logarithm of total assets.	Swarnapali (2014)
	Capital ratio	Total equity divided by total assets.	Menicucci and Paolucci (2016)
	Deposit ratio	total deposits divided by total assets.	Menicucci and Paolucci (2016)
Macroeconomic variables	Real GDP growth	Annual growth rate of GDP.	Adelopo et al. (2018)
	Inflation rate	Annual consumer price index (CCPI) growth rate.	Adelopo et al. (2018)

Source: Authors compiled

Methods

Comparing Banks' Performance between pre and during Covid-19 periods.

We use the below Z test when identifying whether the banks' performance differs between pre and during Covid-19 period and post pandemic crisis period. We recognize 2011 to 2019 as the period before crises and label it as a pre-crisis period. The period from 2020 to 2021 is identified as the Covid-19 health crisis period. Further, we consider both the first Covid-19 year (i.e. 2020) and the second Covid-19 year (i.e. 2021) when comparing ROA between pre-crisis and during Covid-19 periods. The

period from 2022 to 2023 is identified as an ongoing economic crisis period. Further, we consider both the first crisis year (i.e. 2022) and the second crisis year (i.e. 2023) when comparing ROA between pre-crisis and during economic crisis periods.

The z stat. is calculated as follows.

$$Z - stat_{pre,a}^{mean} = \frac{\mu_{pre} - \mu_a}{\sqrt{\sigma_{pre}^2/n_{pre} + \sigma_a^2/n_a}} \quad (1)$$

where, μ_{pre} is the mean ROA of pre-crisis; μ_a takes the mean ROA during Covid-19 period (from 2020 to 2021), 2020 and 2021 individually; and the mean ROA during Crisis (from 2022 to 2023), 2022 and 2023 individually; n_{pre} and σ_{pre}^2 are the number

of observations and variance of the pre-crisis sample; n_a and σ_a^2 are the number of observations and variance of the Covid-19 and economic crisis samples.

Model Estimation – Controlling for other effects

The following regression equation is used to identify the impact of Covid-19 with bank profitability after controlling for other effects.

$$ROA_{it} = \alpha + \beta_1 COVID_{it} + \beta_2 CRISIS_{it} + \beta_3 SIZE_{it} + \beta_4 CAPITAL_{it} + \beta_5 DEPOSIT_{it} + \beta_6 GDP_{it} + \beta_7 INF_{it} + \varepsilon_{it} \quad (2)$$

Where α is the constant term, β_1 to β_7 are the coefficients of independent variables and

control variables. ROA_{it} is the Return on Assets for bank i at time t ; $COVID_{it}$ is the Covid-19 pandemic as a dummy variable; $CRISIS_{it}$ is the Economic crisis as a dummy variable; $SIZE_{it}$ is the Size of bank i at time t ; $CAPITAL_{it}$ is the Capital Ratio of bank i at time t ; $DEPOSIT_{it}$ is the Deposit ratio of bank i at time t ; GDP_{it} is the Real GDP growth at time t ; INF_{it} is the Inflation rate at time t ; ε_{it} is the Error term.

The section below presents the results of the tests and models explained above.

IV. Findings and Discussion

Descriptive statistics

Table 2. Summary Statistics

	ROA	Ln(Size)	Capital Ratio	Deposit Ratio	Real GDP Growth	Inflation
Mean	0.011796	26.70739	0.095933	0.757769	0.030698	0.090829
Median	0.012000	26.84686	0.088671	0.766936	0.036390	0.064355
Maximum	0.026000	29.11529	0.341877	0.879976	0.091450	0.504000
Minimum	0.001000	23.40131	0.033449	0.530276	-0.078000	0.021350
Std. Dev.	0.005387	1.330189	0.044341	0.061313	0.046555	0.131533
Skewness	-0.040648	-0.335827	2.037815	-1.056709	-1.114252	2.898679
Kurtosis	2.473793	2.300067	10.08225	4.861471	3.822813	9.675796
Jarque-Bera	1.535640	5.097227	361.6653	42.96291	2.821624	39.08781
Probability	0.464024	0.078190	0.000000	0.000000	0.243945	0.000000
Observations	130	130	130	130	13	13

Source: Authors Compiled

Table 2 demonstrates the Summary Statistics. Accordingly, all the variables, except ROA, Size and real GDP growth are not normally distributed. The Return on Assets (ROA) has a mean value of 1.17%. The lowest ROA is 0.1%, recorded in 2011 and 2016 by Amana Bank. The highest ROA ratio is recorded at 2.6% in 2013 by the Nations Trust Bank. The ROA is normally distributed with insignificant Jarque-Bera statistic. Further, Table 2 shows that the

bank size, capital ratio and deposit ratio have mean values of 26.70 (Rs. 397 Bn), 9.59% and 75.77%, respectively. The maximum value of bank size is recorded at 29.11 (Rs. 4.4 Tn) for Bank of Ceylon in 2023; the maximum capital ratio is 34.18% for Union Bank of Colombo in 2014 and the maximum deposit ratio is 87.99% for Bank of Ceylon in 2023. Further, the minimum bank size is recorded at 23.40 (14.55 Bn) for Amana Bank in 2011; the minimum capital ratio is 3.34% for People's Bank in 2012 and

the minimum deposit ratio is 53.02% for Union Bank of Colombo in 2015. Moreover, the bank size is normally distributed.

Concerning the Macroeconomic variables, the real GDP growth and inflation rate have mean values of 3.06% and 9.08%,

respectively. The highest values of these two variables are recorded at 9.14% in 2012 (real GDP growth) and 50.4% in 2022 (Inflation rate). The lowest values of real GDP growth and Inflation rate are recorded at -7.8% in 2022 and 2.13% in 2018, respectively.

Comparing Banks' Performance (ROA) between pre-Crisis and during Covid-19 periods

Table 3. Z-test – Comparing the Impact of Covid-19 on ROA

	Pre-Crisis (2011-2019) Vs. During Covid (2020-2021)	Pre-Crisis (2011-2019) Vs. First Covid Year (2020)	Pre-Crisis (2011-2019) Vs. Second Covid Year (2021)	
Z Stat	2.1581**	3.1238***	0.5649	
P(Z<=z) one-tail	0.0155	0.0009	0.2860	
z Critical one-tail	1.6448	1.6448	1.6448	
P(Z<=z) two-tail	0.0309	0.0018	0.5721	
z Critical two-tail	1.9599	1.9599	1.9599	
	Pre-Crisis (2011-2019)	During Covid (2020-2021)	Covid First Year (2020)	Covid Second Year (2021)
Mean ROA	1.25%	1.03%	0.89%	1.17%
ROA Variance	0.000031	0.000014	0.0000101	0.0000154
Obs.	90	20	10	10

Source: Authors Compiled

Table 4. Z-test – Comparing the Impact of Economic Crisis on ROA

	Pre-Crisis (2011-2019) Vs. During Crisis (2022-2023)	Pre-Crisis (2011-2019) Vs. First Crisis Year (2022)	Pre-Crisis (2011-2019) Vs. Second Crisis Year (2023)	
Z Stat	2.1709**	2.7645***	0.9594	
P(Z<=z) one-tail	0.0149	0.0028	0.1686	
z Critical one-tail	1.6448	1.6448	1.6448	
P(Z<=z) two-tail	0.0299	0.0057	0.3373	
z Critical two-tail	1.9599	1.9599	1.9599	
	Pre-Crisis (2011-2019)	During Crisis (2022-2023)	Crisis First Year (2022)	Crisis Second Year (2023)
Mean ROA	1.25%	0.98%	0.90%	1.05%
ROA Variance	0.000031	0.000026	0.000013	0.000041
Obs.	90	20	10	10

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Authors Compiled

Table 5. Z-test – Comparing ROA between Covid and Economic Crisis Periods

Covid (2020-2021) Vs. Crisis (2022-2023)		
Z Stat		0.1973
P(Z<=z) one-tail		0.4217
z Critical one-tail		1.6448
P(Z<=z) two-tail		0.8435
z Critical two-tail		1.9599
	Covid (2020- 2021)	Crisis (2022-2023)
Mean ROA	1.03%	0.98%
ROA Variance	0.000014	0.000026
Obs.	20	20

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Authors Compiled

We report pre-crisis and during Covid-19 comparison results in Table 3. The results show that the mean ROA is higher during the pre-crisis period (1.25%) than in Covid periods (i.e. 1.03% during 2020-2021; 0.89% in 2021; 1.17% in 2022). Further, the bank performance gap between pre-crisis and during Covid-19 period is different from zero and significant at a 5% level. Therefore, the findings support the H1 of this study. Additionally, the banks' performance gap between pre-crisis and the first Covid year is larger and significant at a 1% level. However, the performance difference between pre-crisis and the second Covid-19 year is not significant. Therefore, our findings show that the banks' performance has largely negatively impacted during the first Covid year. Further, these findings indicate that ROA recovered during the second Covid-19 year, equaling the banks' performance to the pre-crisis ROA. These results are confirmed by El-Chaarani et al. (2022) who show that conventional banks are least impacted by the pandemic due to better crisis management strategies.

We report bank ROA comparison results between pre-crisis and during economic crisis periods in Table 4. The results indicate that the mean ROA is lower during the

economic crisis periods (i.e. 0.98% from 2022-2023; 0.90% in 2022; 1.05% in 2023) than pre-crisis period (1.25%). Further, the bank performance gap between pre-crisis and during the economic crisis is different from zero and significant at a 5% level. Therefore, the findings support the H2 of this study. Additionally, the difference in ROA between pre-crisis and the first economic crisis year is larger and significant at 1% level. Further, ROA in the first economic crisis year is lower than what experienced during the first Covid year. However, the performance difference between pre-crisis and the second economic crisis year is insignificant. Therefore, these results show that banks' performance has largely impacted during the first economic crisis year. Further, the results indicate that the negative performance gap in ROA has recovered by the second economic crisis year. The measures taken by the Central Bank of Sri Lanka to secure the financial system stability during the economic crisis period can be pointed out as a major contributor behind the stabilized profitability of the commercial banks in Sri Lanka.

According to the additional analysis reported in Table 5, the performance gap in ROA between Covid-19 and the economic crisis

period is not statistically different from zero. Therefore, the impacts of Covid and the Economic Crisis do not become superior to each other. In other words, the banks' primary profitability has not become worse or better when the crisis transformed from Covid-19 to the post-Covid economic crisis. This finding indicates that domestic commercial banks in Sri Lanka have become resilient and managed the negative impact of the crisis on the financial performance effectively with the support of the Central Bank of Sri Lanka and with internal risk mitigation strategies.

Model Estimation – Controlling for other effects

Before running the panel regression, we analyze the correlation among variables as a preliminary check. We report the correlation matrix in Table. Accordingly, ROA has a negative correlation with the Covid-19 variable and the economic crisis dummy. Moreover, the correlations among the control variables are relatively low, apart from the correlation between crisis and inflation.

Table 6. Correlation Matrix

	COVID	CRISIS	CR	DEPOSITS	GDP	INF	ROA
COVID	1.0000						
CRISIS	-0.1818	1.0000					
CR	-0.0167	0.0003	1.0000				
DEPOSITS	0.08572	0.1771	-0.38928	1.0000			
GDP	-0.2447	-0.7278	0.02911	-0.1797	1.0000		
INF	-0.1070	0.8276	-0.00540	0.1533	-0.7180	1.0000	
ROA	-0.1343	-0.1565	-0.51446	-0.02432	0.3303	-0.1446	1.0000

Source: Authors Compiled

To clarify the doubts of multicollinearity, we run the VIF test. The VIF values for each variable in the model are shown in Table 7, and they range from 1.28 to 4.42.

Accordingly, the regression model has no multicollinearity issues since the VIF of all variables is less than 5.

Table 7. VIF Test Result

Variable	VIF	1/VIF
COVID	1.57	0.637768
CRISIS	4.42	0.226170
INF	3.60	0.277414
GDP	3.57	0.280397
CR	2.11	0.473075
SIZE	2.07	0.482701
DEPOSITS	1.28	0.782241
Mean VIF	2.66	

Source: Authors Compiled

Next, we run both random and fixed effect models and perform the Hausman Test to identify which model is preferred. The result of the Hausman Test is provided in Table 8.

Table 8. Hausman Test Result

Chi2	3.97
Prob> Chi2	0.7827

Source: Authors Compiled

The Hausman Test probability value is greater than 5%, indicating that the random effect model is preferred. Next, we run the Wooldridge test for autocorrelation in panel data and the Homoscedasticity Wald Test as diagnostic tests. The results indicate the presence of autocorrelation and heteroscedasticity because the p-values of both tests reject than 5%, and it rejects the

null hypothesis that there is no first-order autocorrelation and homoscedasticity, respectively. Therefore, we run the cluster random effect model for estimation. The results of the diagnostic tests are shown in Table 9. Further, the Breusch and Pagan LM Test rejects the null hypothesis and indicates that the Random effect model is more appropriate than the Pooled OLS model.

Table 9. Diagnostic Tests

Diagnostics Test	Statistic	P-Value
Wooldridge test for autocorrelation (H0: No first-order autocorrelation)	163.341	0.0000
Homoscedasticity Wald Test (H0: Panel Homoscedasticity)	2.06e+04	0.0000

Source: Authors Compiled

We report on the panel regression results in Table 10.

Table 10. Fixed Effect (FE) and Random Effect (RE) Regression Results

	FE		RE (Cluster)	
	Model 01	Model 02	Model 01	Model 02
Covid-19	-0.002505*** (0.00092)	0.0004329 (0.0011)	-0.002505** (0.0011208)	0.0001123 (0.0012935)
Crisis	-0.002784*** (0.00092)	0.0017005 (0.0018939)	-0.002784 (0.0019247)	0.0010663 (0.0026554)
Bank Size	-	0.0005088 (0.0010584)	-	0.0015181*** (0.0004067)
Capital Ratio	-	-0.020634 (0.0138365)	-	-0.027683*** (0.0085947)
Deposit Ratio	-	-0.0092937 (0.0079858)	-	-0.0093777 (0.012909)
Real GDP Growth	-	0.0670423*** (0.0152983)	-	0.0765591*** (0.0113797)
Inflation rate	-	0.0071104 (0.0050337)	-	0.0091763* (0.0047998)
Cons	0.01261*** (0.0003923)	0.0044341 (0.0309417)	0.01261*** (0.0015614)	-0.0220888 (0.0162824)
Overall R ²	0.05	0.41	0.05	0.50
Observations	130	130	130	130
Dependent Variable	ROA			

<i>Breusch and Pagan LM Test for Random Effect</i>	Chibar2 19.63	P-Value 0.000
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Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors Compiled

Table 10 shows that the R^2 value is 50% in the random effect model. Further, Model 01 considers the Covid-19 variable and Economic Crisis in isolation. Accordingly, the Model 01 results show that the Covid-19 impact is negative and significant, and the impact of the Economic Crisis is also negative but not significant under the random effect model. Conversely, Model 02 considers Covid-19 and the Economic Crisis variables with bank-specific and economic control variables. Accordingly, the random effect results show that Bank Size, Capital ratio, and Real GDP Growth are significant. However, the Covid-19 and Economic Crisis variables become insignificant after controlling bank-specific and macroeconomic variables. This result indicates that the differential effects on ROA due to Covid-19 and the Economic Crisis disappear when controlled for the bank-specific and economic conditions. Therefore, the H3 and H4 of this study do not receive statistical support. Additionally, the results show that bank size and GDP growth are positively associated with ROA. Further, Xie et al. (2021) confirms the same taking evidence from emerging Asian economies.

Accordingly, the negative impact of both Covid and the Economic Crisis are weak, although they achieve an acceptable significant level under comparison tests. Jaques (2007) shows that better crisis incident management strategies such as damage mitigation, stakeholder management, and media response are essential in managing the crisis. The Central Bank of Sri Lanka followed similar strategies during the crisis period, defending the banking system. Further responsive strategies followed by banks effectively managed the crisis incident. These collective

efforts have made the domestic commercial banks in Sri Lanka resilient, driving the challenges of Covid-19 and the post-covid economic crisis while securing their primary profitability.

V. Conclusion

We examined whether the Covid-19 pandemic and post pandemic economic crisis impacted the Banks' performance. In this study, we tested four hypotheses. The first two hypotheses test whether there is a statistical difference in bank performance between pre-Crisis and during Covid-19 and economic crisis periods. The last two hypotheses test whether the impacts of Covid-19 and economic crisis are significant after controlling for firm-specific and macroeconomic factors. Accordingly, our comparison test results show that ROA is lower during the Covid-19 pandemic and economic crisis periods than in the pre-crisis period. The reported negative impact is dominant in the first year of both Covid-19 and the economic crisis. Further, the impact of Covid-19 and the Economic Crisis are not superior to each other, indicating that the banks' primary profitability has not become worse or better when the crisis transformed from Covid-19 to the post-Covid economic crisis. However, the negative differential effect of Covid-19 and the Economic Crisis on ROA disappeared after controlling for firm-specific and macroeconomic factors. Therefore, we conclude that the domestic commercial banks in Sri Lanka stand resilient in terms of their primary profitability during health and economic crisis periods. Strong risk management (El-Chaarani et al., 2022) and the Central Bank's support remain as the key reasons behind this success. This research shows that efficient crisis incident management using

strategies such as damage mitigation, stakeholder management, and media response helps various nations and firms manage the issues arising from the crisis. In this context, Sri Lanka is emerging as a good example to policy and decision makers as a nation that defended the banking system from the crisis. Future research can investigate whether the banks have managed post-crisis recovery and modification, facilitating them to grow in the banking business.

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