Student Conference in Finance 2021

Proceedings

Department of Finance
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura

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Message from the Vice-chancellor

It is with great pleasure that I forward this message to the *Fourth Student Conference in Finance 2021* organized by the Department of Finance, Faculty of Management Studies and Commerce of the University of Sri Jayewardenepura.

University of Sri Jayewardenepura creates and transmits knowledge through teaching, scholarship and research in an environment which values creativity, equal opportunity, freedom of intellectual thought and expression, fairness and professional growth. Research is an integral part in higher education since it provides an opportunity to apply the learnt knowledge to inspire new developments. Identifying this, the University of Sri Jayewardenepura has provided an academic environment which is conducive for maintaining quality teaching and learning together with innovative research in multiple disciplines.

The Department of Finance from its inception has been active in research and development by encouraging students and scholars. The number of students focusing on research under the supervision and guidance of the academic staff are increasing day by day. This conference creates a platform for academics, research scholars and students to discuss and disseminate knowledge on finance related developments. With the COVID-19 pandemic and the shifting of education to an online platform, the Department of Finance has moved their Student Conference in Finance to an online platform.

I congratulate all staff and students of the Department of Finance for continuing this valuable forum for the fourth consecutive year. I am convinced that this will motivate our students to involve and venture into groundbreaking research which will result in initiatives to strengthen the economy of our country in the future. Thus, I look forward to what this fourth Student Conference in Finance would bring forth and wish the very best for all students who would present their valuable research ideas and findings and receive constructive feedback from their fellow colleagues and academics.

Senior Professor Sudantha Liyanage
BSc (Hons) (USJ), PhD (Cardiff), C Chem, FRSC, FIChem C, FPRISL
Vice-chancellor
University of Sri Jayewardenepura

Message from the Dean
Faculty of Management Studies and Commerce

As the Dean of the Faculty, it is a privilege to pen down a few words for the Student's Research Conference organized by the Department of Finance of the Faculty of Management Studies and Commerce (FMSC), University of Sri Jayewardenepura. Research and development activities in the discipline of Finance has global significance given the current issues and challenges faced by the developing nations and Sri Lanka is no exception. Our country requires valuable intellectual inputs from finance in understanding dynamic forces and in formulating appropriate policies to steer the growth and development. The student research conference offers a tremendous opportunity for the young researchers who are engaged in finance to present their research findings and share knowledge with others. As the Dean of the Faculty, I am very proud to say that we have played a significant role in encouraging, supporting and promoting a research culture among undergraduates of the Faculty.

The Faculty of Management Studies and Commerce has been able to produce high quality professionals, administrators, managers, academics and researchers who have taken leadership in both local and global spheres throughout the years; and in doing so, the research culture nurtured at the faculty together with its prominent international orientation has played a massive role in shaping us in becoming who we are today. The FMSC's research culture has helped us connect and evolve with academics, professionals, practitioners as well as student bodies both here and overseas who constantly support our journey of staying relevant through learning and development. I am confident activities of this nature would definietely enhance the research capacity of our graduates and that would add utmost value to improve the quality of both their private and corporate life.

I congratulate the Head of the Department, Conference coordinator as well as the organizing committee for organizing this conference in this scale, even amdist a gobal pandemic. I firmly believe that this confernce would be a great platform for young graduates to improve their research skills and thereby contribute to sustainable development.

Prof. P D Nimal
Dean
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura

Message from the Head of the Department

As the Head of the Department of Finance, it is with great pleasure that I write this congratulatory message to the Fourth Student Conference in Finance which is a significant event organized yearly by the Department of Finance, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura. Student Conference in Finance is one of the principal academic events organized by the department with the prodigious intention of promoting research culture among the undergraduates of the department. The Department of Finance from its inception has been active in research and has setup an environment which supports its students and research scholars to engage in high quality innovative research in the field of Finance.

The department's endeavour is to contribute to national development by providing a balanced education which blends the finest in theory and practice and by forging interactions between the university and the society. In this scenario, I believe the Student Conference in Finance is one of the greatest contributory attempts towards this honourable achievement.

The Student Conference creates a platform for the students to disseminate their findings on contemporary trends and innovations in finance in front of academicians, research scholars and fellow students. The constructive comments and suggestions from the audience will be a valuable opportunity for the young researchers to develop their research interests and will nurture research culture among the fellow students.

The department has been organizing this event physically at the university premises every year. But with the outbreak of the COVID-19 pandemic, the Fourth Student Conference in Finance is organized virtually adapting to the new normal conditions. I appreciate the dedication and untiring efforts made by the Conference Chair and the organizing committee of the Student Conference in Finance – 2021 in making this event a reality.

On behalf of the Department of Finance, I would like to congratulate the presenters of the Student Conference in Finance – 2021, who have successfully completed and presented their final year Research Study. On the same note, I wish you will incorporate the comments and will publish your research work in local or international journals.
I wish the conference a great success!!!

Dr. (Ms.) P A N S Anuradha
Head
Department of Finance
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura

Message from the Conference Chairperson/ Coordinator

As the coordinator of undergraduate research of the Department of Finance I am honored to chair/ coordinate the Student Conference in Finance (SCF), organized by the department for the fourth consecutive year. Research work by students in every field of Finance is encouraged and recognized at the department.

The department of Finance has always been utilizing research at undergraduate level as a tool for building knowledge and facilitating learning. Every possible measure is taken to encourage and motivate students to engage in research. This annual event of the department the SCF is one important way of encouraging students, as it provides the opportunity to all Finance undergraduates who have conducted research studies under the guidance of senior academics of the department, to exchange ideas, improve their communication skills and make their work known among the industry experts. By organizing a platform for them to present their work the department of Finance is contributing towards facilitating the creation of new knowledge and improving research skills of finance students. Fifteen students who have conducted research studies in 2019 and 2020 are presenting their findings at this year's SCF.

COVID-19 has made a dramatic effect on the way global education is delivered. Many educational institutions have been closed, moving into an online platform resulting in a historic change in education. This sudden shift away from classrooms in many parts of the globe, universities had to rapidly shift to virtual and digital strategies converting the online learning environment which existed mainly as a virtual filing cabinet before the pandemic to a revitalized online space, for it to be engaging, enriching and accessible. Falling in line, we at the department of Finance, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, has also moved its academic activities to an online platform, thus, the fourth SCF will be conducted via an online platform.

This event would not have been possible, if not for the support of the Head: Department of Finance, The Dean: Faculty of Management Studies and Commerce and the Vice chancellor: University of Sri Jayewardenepura for whom I owe a great debt of gratitude. My sincere thanks are also extended to, keynote Speaker of the fourth SCF, Senior Professor D B P H Disabandara for accepting our invitation, the reviewers of the conference papers for their dedicated efforts, the Director AHEAD project for funding this event and the researchers who make presentations at the today's conference. Further, I'm very much grateful to the support of the conference organizing team and the technical support staff of the Faculty of Management Studies and Commerce for their untiring support in making this event a success.

Prof. R P C R Rajapakse
Conference Chairperson/ Coordinator
Department of Finance
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura

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An Empirical Study of Relationships between Economic Growth, FDI and Environmental Pollution in Sri Lanka

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Keywords: Economic Growth, FDI, Environment, ARDL Approach, Granger Causality

Introduction

FDI is important in economic growth in developing countries and it stimulates manufacturing sector and has long lasting effects. The portion of FDI to developing economies increased to 52% in 2013 from 17% in 1990 out of world's total FDI (UNCTAD, 2013). Governments of developing economies prefer to attract FDI for growth purpose (Rajapakse, 2016). Promoting export, access to market, transferring technology, capital and skill are benefits of FDI (Kathuria, 2000; Acharyya, 2009). FDI increases production and employment while poverty declines (Rajapakse, 2016). These promote growth in host economy. Degradation of the environment is the most concerned cost of FDI. This study addresses sustainable development of Sri Lanka.

Literature Review

FDI can be considered as an engine for growth (Lee, 2009). FDI is crucial and act as fuel for sharp growth (Shan, 2002; Kottaridi, 2005; Le and Suruga, 2005; Yao, 2006). Host economies' absorptive capability is the key element on that the impact of FDI on growth depends (Durham, 2004; Kathuria, 2002). Bengoa and Sanchez-Robles, 2003 illustrated a positive relationship between FDI and growth only if the host country has economic stability, liberalized market and human capital. In recent studies, researchers identified a bidirectional relationship between FDI, and growth. One is FDI stimulating growth. Second is economies with rapid growth attracting FDI, enhanced growth assisted economies in attracting more FDI (UNCTAD, 2003; Liu et al., 2002). Some empiricists showed an inverse association (Aitken and Harrison, 1999; Damijan et al., 2001).

Economies having lax environmental laws tend to attract more FDI (Keller and Levinson, 2002; Acharyya, 2009). Zarsky (1999) and Goldenman (1998) concluded FDI benefiting environment. Developing economies underestimate the importance of environment and set low standards to attract FDI. FDI creates composition, scale and technique effect from short run to medium. The net effect from the given effects is a question. In scale effect, foreign companies are giants depending on economies of scale so FDI to host countries lead to pollution and diminution of local resources by growth activities. In technique effect, host economies can gain access to cleaner production techniques improving the environment. In composition effect, the proportion of dirty goods of national product changes due to price change so it favors production and income enhancement might also have an advantageous impact on environment since the demand for cleaner products increases (Dean, 1999).

EKC is an inverted U-shaped association between income level and environmental quality. First is pollution tending to go up when income level grows to a threshold level (Regime 1). Thereafter pollution will decline in a further increment of income (Regime 2). Emission is an inevitable input in the creation of the income. Emission is considered as the cause while income becomes the effect (Coondoo and Dinda, 2002). In regime 2, Economies switch to less emission intensive industries and society demands for cleaner products.

Balamurali and Bogahawatte (2004) showed FDI as a main factor in determining growth in Sri Lanka after 1977, provided evidence for a bidirectional Granger causality and in general, FDI has a supportive impact on growth. Samantha and Haiyun (2017) indicated FDI positively weakly impact on growth in the long run but it alone is not important for stimulating the growth. Mustafa and Santhirasegaram (2013) identified FDI have a positive impact on growth in Sri Lanka. Rajapakse

(2016), identified no cointegration between GDP and FDI, and a unidirectional Granger causality of GDP on FDI in short term. Growth impact led by FDI cannot be found in Sri Lanka. Vijayanathan et al. (2014) found that FDI doesn't have a positive, independent impact on growth in Sri Lanka. The results provided evidence for a unidirectional causation from the growth to FDI. Konara and Wei (2017) found direct positive impacts of FDI even if negative "spillover effects" on local firms in Sri Lanka. Sriyalatha (2019), showed a unidirectional causality to CO_2 from growth in Sri Lanka.

Statement of the Problem

Existing literature shows mixed relationships across various countries. No specific relationships can be generalized for every country. Literature of Sri Lankan studies do not show the whole concept taking all variables together, thus there is a research gap. Problem statement of this study is "what are the relationships among the growth, FDI inflows and environment in Sri Lanka?"

Research Objective

The research objective is to establish empirical relationships among economic growth, FDI inflows and environment in Sri Lanka.

Research Methodology

ARDL is used, since it possesses "better small sample properties" and greater reliable "Estimators for long term coefficients". "Bounds test facilitates to check relationships disregarding all regressors are purely I (1), purely I (0) and mutually cointegrated" (Pesaran et al., 2001).

Secondary and quantitative data were employed. Per capita GDP at constant prices as the proxy for growth, per capita FDI inflows and CO_2 metric tons per capita as the proxy for environmental quality were selected. The study uses an annual time series data set of 39 years beginning from 1978 to 2016. FDI data from UNCTAD, CO_2 data from EDGAR and GDP data from world development indicators were collected.

All variables are stationary at first difference [I (1)]. Wald statistic or the joint F-statistic provides the basis for testing cointegration and bounds test is used to check the null hypothesis of no cointegration.

$$\Delta GDP_t = a_0 + \sum_{i=1}^{n} a_{Gi} \Delta GDP_{t-i} + \sum_{i=1}^{n} a_{Fi} \Delta FDI_{t-i} + a_1 GDP_{t-1} + a_2 FDI_{t-1} + \varepsilon_{1t} \quad (1)$$

$$\Delta FDI_t = c_0 + \sum_{i=1}^{n} c_{Fi} \Delta FDI_{t-i} + \sum_{i=1}^{n} c_{Gi} \Delta GDP_{t-i} + c_1 FDI_{t-1} + c_2 GDP_{t-1} + \varepsilon_{3t} \quad (3)$$

a_0 and c_0	=	The drift component
a_G, a_F, c_F and c_G	=	The error correction dynamics
a_1, a_2, c_1 and c_2	=	Correspondence to the long-term relationship
ε_{1t} and ε_{3t}	=	The white noise

The null hypothesis of no cointegration have to be tested against the alternative hypothesis (H_1). (Pesaran et al., 2001) provided critical value bounds (The lower bound for I (0) regressors and the upper bound for I (1) regressors) at given significance levels. If F-statistic is greater than upper bound, H_0 can be rejected. Error correction model (ECM) is employed to find long-term relationships if bounds test results in rejecting H_0.

$$\Delta GDP_t = a_0 + \sum_{i=1}^{n} a_{Gi} \Delta GDP_{t-i} + \sum_{i=1}^{n} a_{Fi} \Delta FDI_{t-i} + \lambda_a ECT_{t-1} + \varepsilon_{1t} \quad (7)$$

$$\Delta FDI_t = c_0 + \sum_{i=1}^{n} c_{Fi} \Delta FDI_{t-i} + \sum_{i=1}^{n} c_{Gi} \Delta GDP_{t-i} + \lambda_c ECT_{t-1} + \varepsilon_{3t} \quad (8)$$

The speed of adjustment to long run equilibrium is represented by error correction term (ECT_{t-1}) if it has a statistically significant coefficient with negative sign. H_0 for each equation is shown in Table 4.1, column 3. Breusch-Godfrey Serial Correlation LM Test was employed to check serial correlation (In Table 4.1, column 4).

Results

Number of lags is selected where it has the minimum Schwarz Information Criterion (SIC). Lags for each equation was given in the Table 4.1, column 2. The results of the test indicated no serial correlation for every equation.

F test depicts cointegration in equation 1 and 3, and suggests long term relationships between FDI and GDP when both FDI and GDP separately became explained variables.

Table 4.1 – The Results of the Bounds test for Cointegration

Equation	Number of lags (n)	H_0	LM test (prob. Chi-Square)	F-statistic
(1)	1	$a_1 = a_2 = 0$	0.3713	7.26587*
(2)	1	$b_1 = b_2 = 0$	0.9380	4.85654
(3)	2	$c_1 = c_2 = 0$	0.0510	15.8654**
(4)	1	$d_1 = d_2 = 0$	0.7818	2.631955
(5)	1	$e_1 = e_2 = 0$	0.3904	3.795954
(6)	2	$f_1 = f_2 = 0$	0.4327	1.546487

Statistically significant denoted by * and ** at 5% and 1% levels respectively. Critical value bounds by (Pesaran et al., 2001) in Table CI (iii). LM test to check serial correlation with 5% significance level.
Source: Compiled by the Author

Equation 1 and 3 were remodeled to absorb cointegration as in equation 7 and 8. $\hat{E}_{t-1}$ replaces ECT_{t-1} because ECT_{t-1} can't be observed. Table 4.2 shows the results. Lags in equation 7 and 8 are identical as in table 4.1, column 2. Equation 3 has the statistically significant coefficient of lagged ECT with the negative sign. The study provides evidence for a long-term relationship from GDP to FDI.

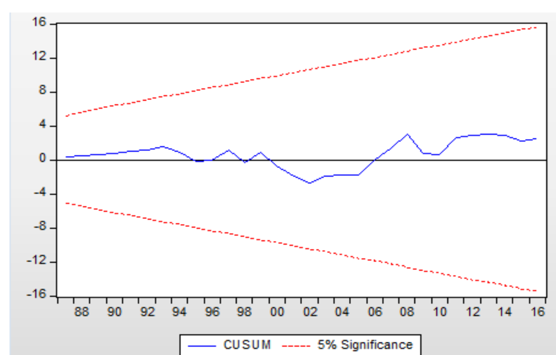
Table 4.2 – The Results of Granger's Causality test: Long term

Equation	ECT	The coefficient of ECT_{t-1}	P - value
(7)	$\hat{E}_t = GDP_t - 1052.747 - 53.30752*FDI$	0.073387	0.0188*
(8)	$\hat{E}_t = FDI_t + 14.89125 - 0.016104*GDP$	-0.777522	0.0002**

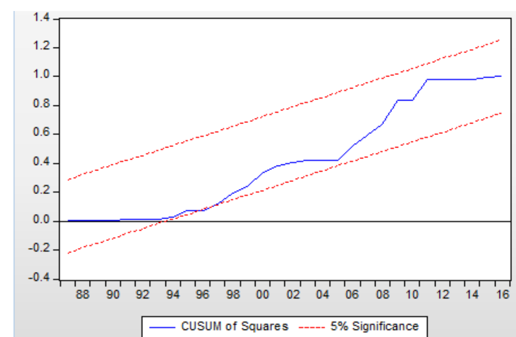
Statistically significant coefficients of ECT_{t-1} are denoted by * and ** at 5% and 1% levels respectively by considering the P - value.
Source: Compiled by the Author

Figure 4.1 - Stability Test by employing CUSUM and CUSUMSQ tests (For equation 3)

Plot of cumulative sum of recursive residuals



Plot of cumulative sum of squares of recursive residuals



Critical boundaries at 5% level of significance are represented by the straight lines.

Conclusion

The study shows only a long run relationship from GDP to FDI. The results confirm findings of Vijayanathan and Arul, (2014) and findings of Rajapakse (2016), partially. Important resources to promote growth are not brought by FDI in Sri Lanka.

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Impact of Bank Capital on Risk in Sri Lankan Banking

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Keywords: Bank, Bank Capital, Bank Risk, Sri Lanka, Basel

Introduction

Banks play a vital role in maintaining stability of the financial system and for the economic development of a country like Sri Lanka as it falls under bank based financial system. Thus, bank failures can pose serious threats to both financial stability and economic activities of a country. As a result of global financial crisis (GFC) of 2008, international banks became insolvent and collapsed and in turn affected the global economy. Even though Sri Lanka's financial market is not well integrated with global market, Sri Lanka too faced the consequences of GFC as it is a developing nation. Basel Committee on Banking Supervision (BCBS) was formed in order to regulate and supervise banks globally. It has prescribed risk-based capital (RBC) standards as a means to absorb potential losses and to reduce the probability of bank failures. Despite of being a non-member country of BCBS, Sri Lankan banks have adopted Basel III framework from 2017 onwards in order to reap its benefits.

However, the effectiveness of RBC standards in reducing the bank risk are questionable as prior researches showed mixed findings. Further, some researchers argued that simple leverage ratio (equity to total assets ratio) is effective than RBC standards in reducing bank risk. Moreover, the presence of deposit insurance scheme (DIS) which is an aspect of regulatory safety net affects the risk-taking behavior of banks. Based on this backdrop, it is vital to investigate the impact of risk-based capital on its risk level.

Literature Review

Banks have to comply with minimum capital requirements and they need to hold capital in proportion to their risk-weighted assets to absorb the potential losses as per the Basel accord. This theory is named as regulatory (cost) hypothesis. Koehn and Santomero (1980) utilized mean-variance framework and found that higher capital regulations could lead to increase in portfolio risk, against the result intended (decrease in portfolio risk) by regulators. This shows that there is a positive relationship between bank capital and risk. On the other hand, thinly capitalized banks have moral hazard incentives and increases its portfolio risk and thus the probability of failure increases. This kind of bank behavior shows a negative relationship between bank capital and risk gap.

The relationship between bank capital and risk was empirically analysed by many researchers and it resulted in mixed findings. Some of the studies (Altunbas et al., 2007; Macit, 2012; Ghosh, 2015) showed bank capital has a positive impact on risk level while some studies (Maji and De, 2015; Dhar and Bhaski, 2015; Kumar, 2018) showed that impact of bank capital on risk level is negative. Further, a study done by Khan et al. (2020) showed capital did not have any impact on risk-taking behaviour of banks. In Sri Lanka, less focus has been given in investigating the impact of bank capital on bank risk. Therefore, this study is expected to fill the gap by empirically analysing the impact of bank capital on bank risk.

Problem Statement and Research Questions

The study is mainly focused on analyzing *to what extent the bank capital has an impact on risk level of Licensed banks in Sri Lankan banking industry.*

Based on the problem statement following research questions are formulated and are expected to be addressed throughout this study.

- To what extent equity ratio can impact the risk level of licensed banks in Sri Lanka?

- What are the other significant factors that can affect risk level of licensed banks in Sri Lanka?

Objectives

The general objective of this research is to examine the impact of risk-based capital on risk level of licensed banks in Sri Lanka.

Specific objectives of this study are as follows;

- To examine the impact of equity ratio on risk level of licensed banks in Sri Lanka.
- To identify significant factors that can affect the risk level of licensed banks in Sri Lanka.

Research Methodology

The required data has been collected from secondary data sources such as audited interim reports of banks which are available in online platforms, research articles from online journal databases, books, policy working papers, CBSL reports and from other published reports. A sample of 13 banks which are being regulated by CBSL have been selected based on data availability. The study covers the time period of 34 quarters from Q1 2012 to Q2 2020. The study has employed quantitative techniques such as descriptive statistics, correlation analysis and panel regression analysis to establish relationship between variables with the use of EViews 8 software.

In order to measure the bank risk (dependent variable), non-performing loans (NPL) ratio was utilized as the proxy due to reasons such as it is linked to bank failures and a major risk component as per Basel framework. Turning to the bank capital, capital adequacy ratio (CAR) and equity to total assets ratio (equity ratio) were used to measure bank capital. Further, control variables such as profitability, bank size, credit quality and credit growth were also considered.

In order to evaluate the impact of bank capital on bank risk in the presence of control variables, following two linear models were formulated.

Model I: $NPLR_{it} = \alpha_0 + \alpha_1 CAR_{it} + \alpha_2 ROA_{it} + \alpha_3 LNTA_{it} + \alpha_4 LLPR_{it} + \alpha_5 LTAR_{it} + \varepsilon_{it}$

Model II: $NPLR_{it} = \beta_0 + \beta_1 ETAR_{it} + \beta_2 ROA_{it} + \beta_3 LNTA_{it} + \beta_4 LLPR_{it} + \beta_5 LTAR_{it} + \mu_{it}$

The list of variables, its proxies and description are shown in Table 1.

Table 1: Description of variables

Variables	Proxy	Description
Bank risk	NPL ratio $(NPLR_{it})$	Ratio of non-performing loans to total loans
Bank capital	Capital Adequacy Ratio (CAR_{it})	Sum of Tier I and Tier II capital as a percentage of risk-weighted assets
	Equity to total assets ratio $(ETAR_{it})$	Ratio of total shareholders' equity to total assets
Profitability	Return on assets (ROA_{it})	Ratio of profit before tax to total assets
Bank size	Total assets $(LNTA_{it})$	Natural logarithm of total assets
Asset quality	Loan loss provision ratio $(LLPR_{it})$	Loan loss provision as a fraction of total loans
Credit growth	Loans to assets ratio $(LTAR_{it})$	Ratio of total loans to total assets

Source: Compiled by the Author

As the first step in this empirical analysis, panel unit root tests such as Levin et al. (2002); Im et al. (2003) test were conducted in order to come into a conclusion about stationarity of variables. Then, Hausman test was performed for the purpose of identifying the suitable model in between fixed

effects model and random effects model that would give consistent estimators. Finally, panel regression analysis was conducted to yield the results.

Findings and Conclusion

Based on the results of both panel unit root tests, variables such as CAR, ETAR, LLPR and LTAR became stationary at level as their probability value is less than 5% level of significance. And, other variables such as NPLR, ROA and LNTA became stationary at first difference. As per Hausman test, probability value of model I and model II were 0.0168 and 0.0098 respectively and these values are less than 5% significance level. Thus, it can be concluded that fixed effects model is appropriate for both models.

Results of panel regression analysis are shown in Table 2.

Table 2: Panel Regression analysis

Variable	Model I CAR and NPLR	Model II ETAR and NPLR
Constant	0.0009 (0.0056)	0.0028 (0.0055)
CAR	-0.0501** (0.0118)	
ETAR		-0.0427** (0.0127)
ROA	-0.3302** (0.1012)	-0.3419** (0.0775)
LNTA	-0.0187** (0.0043)	-0.0198** (0.0061)
LLPR	0.7942** (0.2383)	0.6564** (0.3805)
LTAR	0.0124 (0.0078)	0.0115 (0.0078)
Adjusted R-squared	0.2124	0.2236
F-statistic	6.5206**	6.9633**
P-value of F-statistic	0.0000	0.0000
Total observations	429	429
DW statistic	1.8891	1.9611

Notes: Standard errors are reported in parentheses.
* *, *indicates significance at 1% and 5% respectively for two-tailed distribution

The results of Model I show that a decrease in CAR by 1% increases the NPL ratio by 0.05%. It suggests that undercapitalized banks have incentives for excessive risk-taking by increasing the portfolio risk and thereby increase the possibility of loan default in future. The plausible explanation is bank manager of undercapitalized bank do not exercise adequate control to limit the incentives for excessive risk-taking in the form of increasing loan portfolio risk. The presence of DIS incentivizes banks with lower capital ratios to take excess risks. Because, when bank becomes insolvent due to high default loans, they could reap benefits from deposit insurance subsidy. This finding reflects moral hazard behavior of undercapitalized banks.

The outcome of Model II shows that decrease in equity ratio by 1% will increase the NPL ratio by 0.028%. This outcome reflects the moral hazard incentives of undercapitalized banks which engages in providing high risky loans that could increase the credit risk. So, this study found that equity ratio negatively and significantly impacts the risk level of licensed banks in Sri Lanka.

Turning to control variables in both models, profitability and bank size showed a significant negative relationship with bank risk. Further, loan loss provision ratio depicted a positive and significant

relationship with bank risk. However, loan to asset ratio became an insignificant factor in reducing the bank risk.

Based on these findings, this study recommends bank supervisors to effectively undertake regulatory and supervisory actions such as prompt corrective actions and periodic examinations to reduce moral hazard incentives of undercapitalized banks. Further, monitoring by shareholders and depositors on bank's activities will be more effective in case if legislative framework regarding market disclosures, accounting and auditing standards are designed in a way to support private monitoring mechanism.

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The Impact of the Global Financial Crisis on Stock Markets: A Systematic Literature Review

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Keywords: Global Financial Crisis, Stock Market, Systematic Literature Review

Introduction

A crisis is an event which creates uncertainty, and it not only has negative impact to an individual but also to the whole society. Among the past crisis incidences that have occurred the global financial crisis (GFC) was considered as a major financial fiasco that led the world to a great recession. The GFC was initiated in USA in 2008 with the housing bubble burst and the credit crunch.

The first signs of the GFC were visible through the collapse of the US stock market however the US stock market downturn was not limited to them as it also led to the slowdown of the developed economies and the growth prospects of the emerging economies with the contagion effect (Bekaert, et al., 2014).

Since a crisis is a recurring phenomenon and the GFC is a turning point of finance which restructured the global financial system, this study focuses on identifying the current knowledge of the literature on the key concepts of the impact of the GFC on stock markets. The findings can be utilized by the policy makers, financial institutes and the investors in their decision making.

The literature has a less representation of a systematic literature review on the impact of the GFC on stock markets. Hence this study employed the systematic literature review (SLR) method following a qualitative content analysis to uncover the gaps in literature on the GFC and its impact on stock markets.

Problem Statement and Research Questions

It is evident that an extensive amount of empirical literature is available on the impact of the GFC on stock markets however, less attention was given to review the content of the existing literature.

Based on the conflicting findings of literature we focused on the following research questions,

What is the nature and the background of existing literature on the GFC?
What is the current knowledge on the impact of the GFC on stock markets?

Objectives

The main objective of this study is to identify the impact of the GFC on stock markets based on a systematic literature review.

Research Methodology

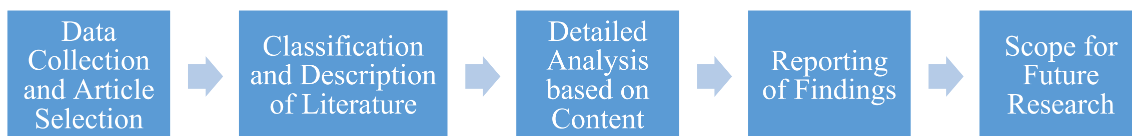
SLR method is employed to review the articles in this study which was inspired by (Kayani et al., 2019). According to Tranfield, SLR is a type of literature review that uses systematic methods to identify and critically evaluate the existing literature.

The study analyzed refereed journal publications collected from 4 main databases: Emerald, Elsevier, ScienceDirect and Google Scholar from 2008 to 2020. Initially 120 articles were collected however,

after an extensive screening process, final sample of 100 articles were selected to extract the GFC related information.

There after the study followed a five-step process to classify the articles and to report the findings to identify the limitations and future research avenues related to the GFC based on the SLR method. The adopted review process for this study is depicted in Figure 1. Then the summarized information from the selected articles were categorized into multiple contexts such as published year, published journal, methodology, geography, citation, and content to extract the most important and relevant information from the literature to synthesize the composed information.

Figure 1: SLR Process



Finally, a qualitative content analysis was carried out to get an insight on the impact of the GFC on stock markets. The qualitative content analysis reveals the concepts related to the field of the GFC based on four main categories; causes and reforms of the GFC, the early warning indicators of the GFC, the theoretical aspects related to the GFC, and the impact of the GFC on stock markets.

Findings

The key findings consist of two sections and the first section provides the summary findings of the SLR and the second section illustrates the summary findings of the qualitative content analysis.

Systematic Literature Review

Table **3** provides a summary of the findings from the SLR based on five classifications.

Table 3: Summary findings of SLR

Category	Findings
Publication Year	Most of the articles were published in 2010. Further, there is an increasing trend of literature which studied on the GFC in 2020.
Research Methodology	Dominance of empirical research method and a lower attention on conceptual and survey methods.
Journal of Publication	Most of the articles were published in the journal of *Research in International Business and Finance* and the study selected articles based on ABDC journal ranking system.
Geographical Analysis	Most of the articles examined the impact on developed countries paying a lower attention to the impact of the GFC on the emerging countries. Moreover, a lower number of articles were on multi-country settings which highlights the lack of comparative findings across different contexts, cultures, and practices.
Citation Analysis	Out of ninety-two cited articles thirty articles were cited less than ten times indicate that these articles were published recently.

Content Analysis

The content analysis provides an in-depth understanding on the important themes covered by the literature which helps to identify the knowledge and the gaps in the current literature related to the

GFC. These findings can be utilized by the policy makers and the financial institutions to reform their strategies and to survive a crisis in future.

The selected articles were categorized under four main themes based on the important concepts reviewed by the scholars as illustrated in Table **4.**

Table 4: Summary findings of Content Analysis

Category	Findings
Causes and reforms of the GFC	The most likely cause of the crisis was the burst of the housing bubble and the credit crunch. Hence, establishing proper regulation and supervision in the financial system is important.
Early warning indicators of GFC	The most significant early warning indicators of the GFC were credit growth and the real exchange rate. However, major attention of the studies was directed more toward the macro-economic variables rather than the financial variables.
Theoretical aspects	‘Theory of flight to quality’ and ‘Too big to fail theory’ can be identified as important theories representing the behavior of investors and financial institutions during the 2008 GFC. Cao et al. (2017) examined the behavior of institutional investors when there is good news and how their behavior change when there is bad news in the market using the ‘Institutional Theory’.
Impact of GFC on stock markets	Studies have analyzed the impact of the GFC on both the developed and emerging stock markets (Abduh, 2020) however, analysis on developed countries dominate the literature. In addition to that, even though the impact of the GFC on emerging Asian stock markets were higher compared to other stock markets with their interdependency with the global economic giant USA, the literature provides mixed results in terms of many Asian economies (Gulzar et al., 2019).

Conclusion

The study adopts the SLR method to identify and analyze the main concepts of the GFC literature followed by a qualitative content analysis to obtain an in-depth understanding of the impact of the GFC on stock markets. Even though 120 articles were collected from various databases at the preliminary search only 100 articles were selected as the final sample to study the period 2008 to 2020. The main focus of this study was on identifying the impact of the GFC on stock markets.

The detailed content analysis highlights a gap in literature with fewer studies examining the emerging stock markets compare to the developed stock markets and the literature provides mixed results on the impact of the GFC on the emerging Asian stock markets. This paper provides future research avenues where the future studies can focus on the multi-country comparison on the impact of the GFC rather than focusing on the impact to an individual country. This expands the scope of future research on emerging markets which have not been explored on a larger scale especially in the context of multicounty settings.

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Impact of Bank-Specific and Macroeconomic Factors on the Profitability of Commercial Banks in Sri Lanka

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Keywords: Commercial Banks, Profitability, Macroeconomic Factors

Introduction

Purpose of this study is to examine the impact of bank-specific and macroeconomic factors on the profitability of commercial banks in Sri Lanka. Research sample consists of the annual data of ten local commercial banks. And the data is collected for 13 years which covers data from 2006 to 2018. Data is analyzed by using STATA 14.2 version. Study deploys ROA and ROE as the proxy for banks profitability which are the dependent variables within the study and Exchange rate, GDP growth rate, Inflation, Lending Interest rate, Unemployment, balance of payments, Central Government Debt, Operating Margin, Deposits, Loans to asset ratio, Debt to equity, Capital Adequacy, Loans to deposit ratio and asset size are deployed as the independent variables. Study uses two separate regression models with the collected panel data.

This study will be of value to different stakeholders including: scholars and academicians, managers of commercial banks, employees, customers, suppliers, regulatory bodies including central bank of Sri Lanka, policy makers, government and ultimately the society. To scholars and academicians, this study will increase body of knowledge on the impact of bank specific and macroeconomic variables on the profitability of the commercial banks in Sri Lanka.

This study will be worthy to the government and the policy makers since it's recognize the direction and magnitude of each bank specific and macro level variables. As macro economy is subjected to rapid variations this study will be worthy to implement suitable policies according to each economic scenario such as growth and recessions. This study will also be important for the government especially the ministry of finance and the central bank of Sri Lanka for formulating strategies and making policy decision in order to achieve the objectives of Economic and Price stability and the Financial systems' stability as well.

Literature Review

Many scholars have carried out research studies on the banks profitability. Those studies can be mainly categorized into two groups such as Single country studies and Cross country studies. But in most of such studies have emphasized only on Bank specific factors or macroeconomic factors. Few have emphasized on both but they also haven't emphasized much on macroeconomic factors. Therefore, in this study researcher has given equal weight for both Bank-specific internal profitability determinants as well as macroeconomic factors which is common for any business unit.

Athanasoglou (2005) carried out a research study to examine the effect of bank specific, industry specific and macroeconomic determinants of bank profitability, using an empirical framework that incorporates the traditional Structure conduct performance theory (SCP) hypothesis, to account for profit persistence. They have used GMM estimator in the Arellano and bond paradigm technique to a panel of Greek Banks that covers the period 1985-2001. They have found that, interest rate, capital adequacy, inflation rate and labour productivity were positively correlated with bank's profitability. However, operating efficiency and ownership status, concentration found negative and insignificant

with the banks' profitability and bank size was found to be insignificant with the banks' profitability. An important finding in this study is that the business cycle significantly affects banks' profits, even after controlling for the effects of other determinants which have strong correlation with the business cycle. But in this study they haven't found any evidence to support the Structure Conduct Performance hypothesis (SCPH). This study focused on the bank specific, industry specific and Macroeconomic variables in a brief manner not in depth analysis has been done in coming up with findings.

Also in the research study conducted by the Omar and Mutairi (2008); they have investigated on the bank specific determinants of profitability in Kuwait. Authors have taken the data from 1993 to 2005 of seven National commercial banks in Kuwait for the study purposes. They have taken five bank specific variables in order to find out its impact on the banks' profitability by using seemingly unrelated regression technique. Return on asset was taken as the dependent variable as a measure of bank profitability and equity to asset ratio, loans to asset ratio, operating cost to asset ratio, non interest earning assets to total asset ratio and the bank size were chosen as independent variables in the study. Natural logarithm of total assets used as proxy for reflecting the bank size in their study. This study found that, equity to assets, loans to assets, operating cost to asset and the asset size were positively correlated with the Return on assets. Non- interest earning asset to total asset ratio was negatively correlated with the ROA. Except for loans to asset and the operating cost to asset ratios, rest of the independent variables were found significant with ROA in the above study. Result of the study stress the importance of increasing the capital adequacy and reducing non interest assets to improve the banks' profitability. However, this study has focused only on the Bank specific internal determinants and it has not focused on the external broader determinants of profitability.

Harbi (2018) also examined the determinants of conventional banks profitability in relation to developing and underdeveloped countries in organization of Islamic cooperation (OIC). 52 countries were included in the study by collecting data over period from 1969 to 2008 covering 686 banks. Data has been analyzed using fixed effect regression model as suggested by Hausman Test. Author employed ROA and NIM as dependent variables as proxy for the banks' profitability while using equity, loans, deposits, overhead expenses, other operating income, foreign ownership (dummy variable), GDP per capita, GDP growth, oil shock, tax, reserves of banking system, market capitalization, and banks assets as independent variables. Study findings revealed that; Equity to assets was positively correlated with both ROA and NIM models. Loans were negatively correlated with ROA while it was positively correlated with the NIM across models. Deposits found a weak negative correlation with the banks' profitability across both models. Overhead and other operating income found a positive and negative impact with the profitability respectively across both models.

Problem Statement and Research Questions

Every business organization operates within the macro environment, which is the broad environmental factor that exists outside the organization and have the potential of affecting the organizations 'operations. Like any other business entity banking industry also operates within the macro environment. Therefore, banks' performance depends not only on bank specific factors but also on the macroeconomic factors. Many researchers have carried out many research studies regarding the bank's profitability determinants around the globe. But their research studies were mostly focused on either bank specific determinants or macroeconomic profitability determinants. Therefore, this study aims at fulfilling this existing gap.

Research Objective

To establish a statistical relationship between the bank specific and macroeconomic factors, and the financial performance of the commercial banks in Sri Lanka.

Research Methodology

As this is a quantitative research study, secondary data was collected for 9 local banks for 13 years. Exchange rate, GDP growth rate, Inflation, Lending Interest rate, Unemployment, balance of payments, Central Government Debts, Operating Margin, Deposits, Loans to asset ratio, Debt to equity, Capital Adequacy, Loans to deposit ratio and asset size were independent variables and ROE and ROA were used as dependent variables in order to develop two regression models with balance panel data regression approach. And data were analyzed by using STATA software.

Model 01: (ROA)

ROA = 1.006269 – 56.04365 Ex rate **-0.0209712**GDP growth + **0.0478864**Inflation **-0.17816**Lending – **0.3614382**Unemployment + **0.0001119**BOP + **0.0226985**CGD + **0.5979026**OPI - **0.0076039**Deposits + **0.0023037**Loans + **0.0564472**DE + **0.0241068**CA + **0.1673617**LD + **1.501316**Log_A + $\mu_{nt.}$

Model 02: (ROE)

ROE = -5.072428 + **958.1673**Ex rate + **1.03331**GDP growth + **0.0056283**Inflation - **0.5315962**Lending - **1.744689**Unemployment + **0.0006909**BOP + **0.171878**CGD + **2.243183**OPI - **0.1012004**Deposits + **0.2255025**Loans + **0.8785433**DE + **0.2536969**CA - **1.832856**LD + **3.200385**Log_A + $\mu_{nt.}$

Findings and Conclusions

The study found that both the Macroeconomic and bank specific variables jointly influence the financial performance of the commercial banks in Sri Lanka. Most of the study findings are in line with the other related literature while some variables revealed converse relationship with the general theory. The regression models can be summarized as follows.

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COVID-19 Outbreak and Stock Market Performance: Evidence from Sri Lanka

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Keywords: COVID-19, Industry Group, Impact, Event Study

Introduction

Moving along the history, it can be identified that the human race has experienced many types of challenges which did have the capacity to decide the human existence or extinction from the beginning. Some of these challenges were created by humans by themselves like world wars and some were created by natural forces like natural disasters and deadly viruses. When talking about deadly diseases in the world's history, there are many diseases like Malaria, Smallpox, Ebola, Zika and SARS-Cov-1 which some of these diseases has created global emergencies from time to time. Recently COVID-19 has taken place as a rapid spreading virus by causing more than two million deaths and more than 95 million cases around the world as being the sixth global pandemic in the world. When considering the COVID-19, it has also caused for a huge negative impact on the world economy and development as the previous pandemics, according to recent studies such as (He et al., 2020) and (Ru et al., 2020). However, according to some researches like "COVID-19's Impact on Stock Prices Across Different Sectors' by Pinglin He and others, it has been identified that some sectors of China has been affected positively and some sectors has not shown a significant reaction to the Pandemic. Likewise, as those researches suggested, there can be differences in different industries while those reactions can be differed depending on the country and this has led the path to undertake a study based on the Sri Lankan context regarding the impact of COVID-19 on the stock market performance. So, this research intends to study the impact of COVID- 19 by considering industries in Sri Lanka in a standard manner according to the Global Industry Classification Standards (GICS) focusing on each industry separately expecting to identify industries which are positively affected and negatively affected while having a comparison among Sri Lankan industries. As this study intends to identify safe industries and riskier industries in an epidemic situation based on the COVID-19 pandemic, this study will be very important to investors to recognize what are the safe industries and profitable industries in a pandemic situation while recognizing negatively affected industries in Sri Lanka. And also, by referring this study it will be able to enhance the knowledge of Global Industry Classification Standards providing a way for investment diversification in Sri Lanka. As the first sub heading this paper carries the introduction followed by the literature review and the methodology is discussed next. Finally, it carries the findings and the conclusion.

Literature review

As the COVID-19 pandemic is a new and still ongoing pandemic, many recent studies can be found regarding the impact of COVID-19. When it comes to the impact of COVID-19 on industries there are many studies focusing on different industries such as agricultural industry, fishery industry, poultry industry, banking industry, insurance industry, energy industry, tourism industry etc. For example, Raul Siche (Siche, 2020) talks about the impact of COVID-19 on the agricultural industry which has been identified as a negative impact where the same impact can also be seen in the Canadian agricultural industry (Deaton and Deaton, 2020) and the poultry industry (McEwan et al., 2020). However, when it comes to the fishery industry in the British context it has identified this pandemic situation as a useful condition to develop their fishery industry (Kemp et al., 2020) which is contrary to the behavior of other agricultural and poultry industries. Talking about the insurance industry, it has also negatively impacted by the COVID-19 in China (Wang et al., 2020) and Ethiopia (Worku and Mersha, 2020) while it can be observed a positive impact on the insurance industry in India (Ramasamy, 2020). When it comes to stock markets performances as a response for the COVID-19 pandemic, researchers have adopted different methods like regression analysis (Pavlyshenko, 2020) event studies (Ru et al., 2020), text based methods (Phan and Narayan, 2020), Fourier Cointegration tests (Senol and Zeren, 2020) etc. by using different indices like the volatility index, S&P composite

index and S&P 1200 Global index etc. and they have focused on the entire stock market as a whole. When it comes to analyzing industry wise stock market performance, Pinglin He and others have done an event study focusing on different industries in China and they have found that transportation, mining, and electricity industries have been significantly negatively influenced by the COVID-19, where manufacturing, education and technology industries have been flexible to the pandemic based on their stock prices. And also, it has been found that food and staples retailers has gain the advantage while consumer services reported a decline in the stock market too (Ramelli and Wagner, 2020). However, when it comes to the Sri Lankan context, there are several studies done on different industries such as apparel industry (Bolonne, 2020), tourism industry (Sivesan, 2020) and education industry etc. which discuss challenges and solutions of the COVID-19 pandemic and there are less studies done on stock market performance industry wise. Likewise, by analyzing the literature it can be identified that different industries have responded to the COVID-19 pandemic in different manner and those responses can be changed among different countries. As there are few studies in Sri Lanka focusing on industry wise stock market performances, in this research study intends to fill that gap by carrying out a study which analyses the stock market responses for the COVID-19 pandemic in Sri Lankan industries while adding knowledge of Global Industry Classification Standards (GICS) to the reader.

Problem Statement and Research Question

The COVID-19 pandemic has made a huge impact on world's economy and development causing many deaths and continuously reporting patients. When it comes to different economic industries this impact made by the pandemic has been different from industry to industry and among countries where one industry seems to be negatively impacted while the same industry impacted positively in another country. Because of that in the Sri Lankan context as a developing country, those observations suggested by the literature cannot be generalized and what are the positively impacted industries, negatively impacted industries and what are the less impacted industries from the COVID-19 in Sri Lanka has to be identified. Accordingly, the research question of this study is as follows.

"What is the impact of COVID-19 on different industries in Sri Lanka?"

Objectives

- Identify whether there is a significant impact from COVID-19 to stock markets
- Identify industries which have been positively impacted by COVID - 19
- Identify industries which have been negatively impacted by COVID – 19

Research Methodology

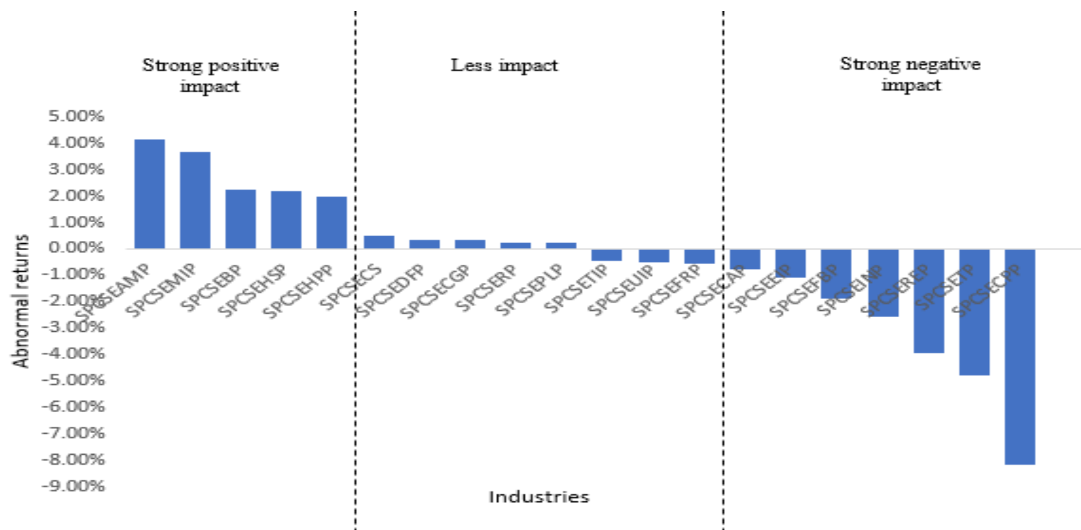
The Event Study Methodology has been used to analyze the impact of COVID-19 in Sri Lankan industries using two event days which can be recognized as the date of reporting the first COVID-19 patient in Sri Lanka on 27th January 2020 and the date of reporting the first local positive COVID-19 patient on 10th March 2020. Cumulative abnormal returns (CAR), Abnormal returns (AR) and Normal returns (R) are the variables those have been considered in this study of which returns are calculated by using industry group indices according to the Global Industry Classification Standards. So, the data of this study consist with returns of 20 industry groups such as energy, automobiles, materials, health care, household and personal products, transportation, insurance, consumer durables and textiles, diversified financial, commercial and professional services, consumer services, capital goods, retailing, telecommunication, pharmaceutical, biotechnology and life industry group, utilities, food and staples retailing, banks, real estate and food, beverage and tobacco industry. Thus, it represents all the listed companies in the Colombo Stock Exchange as the population of this study and the data were collected from the Colombo Stock Exchange database.

Findings and Conclusions

Findings of this study mainly emphasize that "Event 1" has not done a significant impact on any industry in Sri Lanka where it has recorded a significant impact made by "Event 2" in Sri Lankan

industries in the early stage of COVID-19. The impact made by COVID-19 on Sri Lankan industries based on "Event 2" can be identified as strong negative impact, strong positive impact and less significant impact depending on the industry type as follows.

Figure 2- Behavior of abnormal returns on the "Event 2" and categorization



According to the results of the study the belief of COVID-19 has only created a negative impact for every industry has to be discarded. Referring to stock markets' performance at the initial stage of the pandemic, it can be said that the pandemic has created a positive impact for stock prices which are related to automobiles, materials, health care, household and personal care while making a significant negative impact for stock prices which belong to transportation, insurance, consumer durables, textiles, diversified financials, commercial and professional service industries. Even though COVID-19 has made such impact to those industries there are about 8 industries such as the consumer services industry, diversified financials industry group, capital goods, retailing industry group, telecommunication industry group, pharmaceutical , biotechnology and life industry group, utility industry group, food and staples retailing industry group in Sri Lanka which were not significantly affected and these industries can be considered as safe industries during a pandemic period for investors. Finally, according to above results it has led the conclusion that the COVID-19 pandemic has created both positive and negative influences on Sri Lankan industries significantly at its initial stage of the pandemic while making less impact to some industries which can be considered as safe industries in a pandemic condition.

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The Impact of Capital Structure on Performance of Manufacturing Companies Listed in Colombo Stock Exchange

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Keywords: Capital Structure, Financial Performance, Panel Data

Introduction

This study examines the relationship between the capital structure and firm performance of the listed manufacturing companies in Sri Lanka using panel data analysis covering the sample period from 2012 to year 2018. Findings of the study are important in several ways: first, it is helpful for businesses to determine the ways and means to improve their performance. Then, the study covering one of emerging markets provides a guidance for future researchers who are willing to explore in other countries in emerging market segment. Finally, capital structure is one of a critical decision that a company involves in order to have a smooth flow of funds within its investment projects. Consequently, this study provides some insight into optimal level of debt and equity based on the nature of the organization.

Literature Review

Capital structure is a critical area of research among scholars (Baker and Martin, 2011; Iqbal et.al, 2012). It is worth looking at how this area has been addressed in previous studies.

Irrelevancy theory of capital structure was originally developed by Modigliani and Miller in 1958 based on a number of assumptions and it was believed in a perfect capital market where there are no restrictions, then they came up with the well-known concept of "capital structure irrelevance". This says that the value of a firm is affected by any of the capital structure decision that the firm would make.

There are two major theories of capital structure which form the basis of the paper. The first one is trade off theory and the second one is pecking order theory. Trade-Off Theory which forms the model on taxes and agency cost (Jensen and Meckling, 1976; DeAngelo and Masulis, 1980) provided evidence that having a trade-off between debt tax shield and the agency cost of debt of a firm.

Myers and Majluf (1984) were the scholars who came up with this theory. They stated the idea of asymmetric information in determining the optimum capital structure. They focused on the information asymmetries between firm insiders and outsiders. Further it was anticipated that managers take decisions in order to increase the wealth of current shareholders. As per the pecking order theory, that firms will firstly finance their financial requirements through internally generated funds. i.e. retained earnings, because of not having information asymmetry. Then capital requirements will be funded by short term and long-term debt sources.

Resource-based theory: this theory is focused on the resource base of the firm. It explains that competitive advantage for a firm lies on the possession of tangible and intangible resources. Advantage can be achieved when other firms cannot afford to possess such level of recourse. In order to sustain the firm's competitive advantage these resources must be valuable, rare, inimitable, and not substitutable (Barney, 1991).

According to trade-off theory the greater the profitability of firms the greater the income to shield and thus should borrow more to take tax advantages (i.e. increase the level of leverage). This will lead to an expectation of, a positive relationship between debt level and firm's performance. Ample number of studies provide empirical evidence supporting this positive relationship between debt level and firm's performance (Taub, 1975; Roden and Lewellen, 1995; Champion, 1999; Ghosh, 2000; Hadlock

and James, 2002; Berger and Patti, 2006; Thayaparan et al., 2012). Similarly, negative relationship could also be anticipated from level of debts and financial performance of firms. There are sufficient number of studies contributed to provide empirical evidence supporting this negative relationship between debt level and firm's performance (Kester, 1986; Friend and Lang, 1988; Titman and Wessels, 1988; Rajan and Zingales, 1995; Wald, 1999; Booth et al., 2001; Fama and French, 2002).

Niranjani and Priya (2013) conducted a research study within the same area using a sample of listed trading companies in Sri Lanka for the period of 2006-2010. Similar with that the study uses the variables Debt equity ratio, Debt asset ratio and Long-term debt ratio, Gross profit margin, net profit margin, ROCE, ROE and ROA as variables to the study. It employs correlation and regression analysis.

Manawaduge et al. (2011) carried out an empirical analysis of the impact of capital structure on firm performance in the context of an emerging market of Sri Lanka. Leverage ratios, growth of sales, risk, total sales, and tangibility were used as proxies of the study variables and the sample was 155 listed companies in Colombo stock exchange. The results indicated that use of debt capital is negatively affected on the performance of the firms in Sri Lanka and it is mainly in high cost short term debt as the major source of finance of the company. This results in consistent with previous findings that Sri Lankan firms use more short-term debts against long term debts (Weerakoon, 2014). This would be due to the lack of development in Sri Lankan long term debt market. Further it emphasized that, depending on short term debt more than the equity would be an indicator of company which is at a financial distress. Therefore, they are in the belief that policy makers should design policies and regulations to develop sound long term debt market and other ways to maximize the utilization of non-current assets in the company.

In view of the above reviews, it revealed that how much important the capital structure and its related attributes throughout the history of the corporate finance world. Findings obtained through studies conducted based on emerging markets also have shown mixed results towards the relationship between capital structure and the performance of the firm. Therefore, it is quite impossible to generalize the idea on how to make decisions that can guide for best results for the company.

Problem Statement

Results of previous studies are mixed in nature. This may be due to following unitary perspectives. The problem is that even though there are many studies and findings are available for developed countries, still there are very few studies that are specifically related to the Sri Lankan context. Therefore, the above relationship should be explored sufficiently in order to apply the said concepts efficiently to the Sri Lankan context.

Research Question

What is the impact of capital structure on firm's performance?

Research Objective

The objective of the study is to examine the impact of capital structure on the performance of the companies listed in Colombo stock exchange. In order to achieve this objective an econometric model is designed with the help of appropriate variables by considering the selected sample period of time.

Research Methodology

Sample

This study involves identifying the impact of capital structure on the performance of companies listed in the Colombo stock exchange, Sri Lanka. Since this is a quantitative study, data has been collected from the audited Financial statements published by respective companies from year 2012 to year 2018. Among the 38 firms in manufacturing sector, 21 companies have been selected as the sample for the study by considering the data availability within the period of the study and 147 observations

have been used in the analysis. Since the sample represents one sector, results generated in relation to only the manufacturing sector.

Variable Identification

Following variables are used to construct the model for the study.

Dependent Variables: Gross profit margin, Net profit margin, Return on asset, Return on Equity
*Explanatory variables***:** Debt to Equity ratio, Total debt to total asset, Short term debt to total asset, Long term debt to total asset.
Control Variable: size

Regression Model

Panel data regression along with correlation analysis was conducted in order to analyze the collected series of data. A mathematical model of the basic equation was designed, which then converted to an econometric model for the purpose of the analysis. Following are the models designed to analyze data.

$$\text{Performance (t)} = \beta_0 + \beta_1 \text{ DE}_{It} + \beta_2 \text{ control}_{Ijt} + U_{It}$$

$$\text{Performance (t)} = \beta_0 + \beta_1 \text{ DA}_{It} + \beta_2 \text{ control}_{Ijt} + U_{It}$$

$$\text{Performance (t)} = \beta_0 + \beta_1 \text{ STDA}_{It} + \beta_2 \text{ control}_{Ijt} + U_{It}$$

$$\text{Performance (t)} = \beta_0 + \beta_1 \text{ LTDA}_{It} + \beta_2 \text{ control}_{Ijt} + U_{It}$$

Where,

$\text{Performance}_{(I, t)}$ = Performance of company I at year t

β_0 = When other values are constant, performance of the firm

$UI_{I, t}$ = error term of company I at year t

In the process of analysis, it was tested whether there was any significant relationship between performance and the capital structure using e views as the analyses software and used corresponding observations for the purpose. Following are the correlation and regression results obtained;

Table 1: Correlation structure

Variable	Total debt to asset	Total debt to Equity	Long term loan to asset	Short term loan to asset	Size variable
ROA	(0.99)	(0.10)	(0.99)	(0.99)	Positive
ROE	(0.03)	0.48	(0.03)	(0.03)	Positive
GPM	(0.05)	(0.06)	(0.05)	(0.05)	Negative
NPM	(0.02)	(0.00)	(0.01)	(0.02)	Positive

Throughout the analysis it was constantly proved that there is a significant impact from the capital structure and the control variable “size” to the financial performance of the selected sample of 21 companies. However, the exact nature of the relationship is quite different from one dependent variable to another. Therefore, the results obtained from regression analysis are mixed in nature. The appropriate solution is to agree with correlation analysis which clearly stated that the significant relationship is nothing but an adverse impact to the financial performance of the industry and on the other hand control variable has a positive impact to the performance.

Conclusion and Recommendations

Results of the detailed analysis drawn to the conclusion that there is a significant negative relationship between financial performance of selected manufacturing companies and the capital structure. This means that, higher the debt level of the company lower will be the financial performance. This means that companies should focus on financing options other than debt financing as their first preference. If there is no other way but to obtain grants, short-term debt financing is healthier as it is the general tendency in the market.

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Credit Risk and Corporate Distress Prediction: A Hybrid Model for Sri Lankan Listed Firms

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Keywords: Financial Distress Prediction, Altman's Z Score Model, Multiple Discriminant Analysis

Introduction

Financial distress is an early signal that a firm has the potential to go bankrupt and default its debt in the future unless the firm positively responds to the current situation that it faces. Evidence can be found on financially distressed companies in different previous studies. Accordingly, Nanayakkara and Azeez (2014) identified 67 Sri Lankan listed financially distressed firms during the 2002 – 2011 period. Wijekoon and Azeez (2015) found a total of 70 listed distressed firms for the period 2002 – 2010 period. Further, Lakshan and Wijekoon (2012) recognized another 70 listed distress firms for the period 2002 – 2008. On average these numbers accounts for about 30% - 35% of listed companies in the Colombo Stock Exchange (CSE). This indicates how seriously Sri Lankan firms are suffering from financial distress. This urges the researchers to investigate the potential default probabilities of these firms.

This study would contribute to a wide range of parties like, banks, financial institutions and lenders, recovery/accounts receivable divisions of firms, investment managers, investment advisors, analysts and auditors etc.

Literature Review

Distress prediction models evolved over time with different variables and different techniques of prediction. The first even known attempt to predict financial distress of firms was made by Bureau of Business Research in 1930 using some financial ratios to discriminate the distress and healthy firms. Afterwards many researchers in this field used financial ratios and different statistical techniques to develop models of distress prediction. A summary of such models can be outlined as follows,

- Univariate (Accounting/Market Measures)
- Multivariate (Accounting/Market Measures)
    - Discriminant, Logit, Probit Models (Linear, Quadratic)
- Discriminant and Logit Models
    - Z-Score—Manufacturing
    - Private Firm Models (e.g., Risk Calc [Moody's], Z″-Score)
- Artificial Intelligence Systems
    - Expert Systems
    - Neural Networks (e.g., Credit Model [S&P], Central die Balance [CBI], Italy)
- Option/Contingent Claims Models
    - KMV Credit Monitor Model
- Blended Ratio/Market Value Models
    - Moody's Risk Calc

(Altman and Hotchkiss, 2005)

The most prominent distress prediction model was developed by Edward Altman in 1968 which is known as the Z score model. Altman used five different accrual based financial ratios in developing this model. This model showed an accuracy of 95% in classifying the firms as distressed and healthy.

Rather relying on the financial ratios, later the researchers started to use some other variables in these prediction models like,

1. Financial ratios
2. Corporate governance ratios
3. Market variables
4. Cash flow variables

Problem Statement and Research Questions

In Sri Lankan context studies on corporate distress prediction are rare and most of the available studies also have focused on Multiple Discriminant Analysis (MDA) using financial variables. Existing literature shows that the other types of variables mentioned above also can be used to predict financial distress. Hence in Sri Lankan context there is a need of a hybrid model to predict financial distress of companies.

This research at the end of the study would answer the following questions,

1. Whether the traditional financial ratios have a predictive power in discriminating the distressed and healthy firms
2. What other variables are suitable in predicting the financial distress of Sri Lankan listed firms
3. What function best discriminates the distressed and healthy firms

Objectives

Main Objective:

To develop a model that incorporates financial ratios, cash flow variables, governance variables and market information to predict corporate financial distress one year and two years in advance to distress.

Sub Objectives:

1. To evaluate the discriminating power, the financial ratios, have in discriminating the distressed and healthy firms.
2. To identify other corporate governance, market and cash flow-based variables that have a discriminating power in discriminating the firms as distressed or healthy.
3. To evaluate the discriminative power of governance, cash flow and market variables.

Research Methodology

In doing the research study, listed firms in Colombo Stock Exchange during the period 2011 – 2020 were chosen as the sample from which 59 companies were selected as financially distressed firms under the following criteria,

1. A firm which recorded a negative retained earnings value (revenue reserve value) or recorded a negative net assets value consecutively for three years in their balance sheets consecutively for three years during 2011 – 2020, or
2. A firm which earned negative net profits consecutively for three years during the period or
3. If any concern about the company's ability to going concern is emphasized in the audit opinion or
4. A firms whose net operating cash flows or net cash movement is negative consecutively for four years

If a company satisfied at least any one of the above criteria it was considered as a financially distressed firm and the latest year such condition was satisfied, was considered as the year in which such company became financially distressed. A matched sample of 59 companies were selected considering the total asset size, industry and major business activities. The final sample consisted 59 distressed firms and 59 matched healthy firms (118 companies).

MDA and independent sample t-tests were used for the analysis and to develop the discriminant function. The variables used in the analysis were,

- Corporate governance variables – Board size (BODSIZE), Percentage of independent directors (IND), Separation of CEO and chairman roles (CEODU), Availability of an Audit Committee (AUDCOM) and Remuneration of the BOD (REMU / SA)
- Accrual based financial ratios – ROA, ROE, Net margin (NI/SA), Interest to sales ratio (I/SA), Current ratio (CA/CL), Working capital ratio (WC/TA), Assets turnover (SA/TA), EBIT to total assets (EBIT/TA), Fixed assets turnover (SA/FA), Debt ratio (TD/TA), Current liabilities to total assets (CL/TL), Firm size (ln SA), Debt to equity ratio (D/E), Retained earnings to total assets ratio (RE/TA) and Interest cover ratio (INTCOV)
- Cash flow variables – Cash flows from operations to total debt (CFO/TD), Operating cash flows to current liabilities (CFO/CL) and Cash flows to liabilities (CFO/TL)
- Market variables – Public share ownership ratio (PUB)

Findings and Conclusions

The results of the independent sample t-tests indicated that variables BODSIZE, CEODU, NI/TA, NI/TE, WC/TA, EBIT/TA, NI/SA, EBIT/TA, CL/TA, SA/TA, TD/TA, CL/TA, ln TA, D/E, RE/TA, CFO/CL, and INTCOV have a discriminant power between the distressed and healthy firms.

And the MDA analysis developed the following discriminant functions for one year before and two years before distress respectively,

$$
\begin{aligned}
\textit{Discriminant Score}_{t-1} &= -6.022 + 0.702CEODU - 17.441NI/TA + 2.780NI/TE - 0.178WC/TA + 16.377zEBIT/TA \\
&+ 0.807SA/TA - 0.922TD/TA - 2.601CL/TA + 0.258\ln TA - 0.009zD/E + 0.215RE/TA + 0.058CFO/CL \\
&+ 0.000INTCOV
\end{aligned}
$$

$$
\begin{aligned}
\textit{Discriminant Score}_{t-2} &= -5.020 + 0.050BODSIZE + 0.593CEODU + 3.500NI/TA + 1.375NI/TE - 0.029NI/SA + 3.636EBIT/TA \\
&+ 0.656SA/TA - 2.533CL/TA + 0.198\ln TA - 0.357D/E + 0.192RE/TA + 0.023CFO/CL
\end{aligned}
$$

Year one model classified 46 out of 59 distressed companies correctly with an accuracy of 78% while the year two model classified 47 out of 59 with an accuracy of 79.7%. Type I and type II errors of model one was 22% and 16.9% respectively while for year two model the errors were 20.3% and 18.6% respectively.

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The Effect of Interest Rate on Commercial Bank's Stock Returns in Colombo Stock Exchange

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Keywords: Interest Rates, Central Bank, Commercial Banks, Stock Return, Colombo Stock Exchange

Introduction

The stock market's performance is the best measure of the country's economic health. All industries and areas of the economy are covered by stock market. Stock exchanges allow businesses to be traded publicly and raise funds. Raising cash allows companies to expand their operations, grow their businesses, and create jobs in the economy. Stock returns arise from capital gains and dividends. A stock's price will rise or fall over time. Shareholders can choose to sell their shares at a profit if the stock price rises. When the stock price rises, the stock is performing well. A decline in price, on the other hand, indicates a poor performance. Investors avoid stocks during a bear market. As a result of the decline in the demand, stock prices automatically fall. A rising stock market usually corresponds to an expanding economy and boosts investor confidence. People who invest in the stock market gain riches when the stock market rises. If a stock market is performing well, a corporation may be more willing to issue additional shares in the belief that they would be able to raise more funds at a better price. The performance of the stock market has an impact on a company's cost of capital. Positive stock price gains have the potential to inspire new interest in a company or sector. This might potentially boost sales revenue or attract investment. In Sri Lanka research has been conducted to examine the impact of changes in the central bank's interest rate on the stock returns of publicly traded commercial banks. Policymakers and other stakeholders with an interest in commercial banks in the financial markets must understand the relationship between commercial bank stock returns and interest rates. Interest rate is the cost of a loan to the borrower as well as the lender's return on investment. Individual's decisions on whether to spend more or save more are influenced by interest rates. It also has an effect on corporate decisions such as whether or not to grow operations or invest in the capital market. Commercial banks, on the other hand, play an important role in the transmission of monetary policy across the financial system. Furthermore, commercial banks have interest-sensitive assets and liabilities, and their stock returns are thought to be particularly sensitive to shifts in the central bank's base lending rates. For regulatory agencies, bank managers, academic communities, and investors, determining the impact of monetary policy on stock return is critical. Therefore, the researcher examines the dynamic relationship between stock returns of commercial banks and interest rate with special reference to Colombo stock exchange.

Literature review

This study includes a summary of the literature, which includes existing theories, concepts, and arguments from previous research on the factors included in the study. Interest rates, commercial bank stock returns, and the stock exchange market are all part of it. The Capital Asset Pricing Model (CAPM), which includes the risk components as one of the criteria for evaluating stock returns, is also one of the finest stock return indication for listed corporations, such as commercial banks (Lumby and Jones, 2015). Flannery and James (1984) investigated the underline reason for the sensitivity of the stock returns to interest rates, whether short-term or long-term, in order to better understand the characteristics of banks that caused this sensitivity. Interest rate is commonly defined as the cost of credit, expressed as a percentage of credit, and is thus influenced by credit supply and demand (Lumby and Jones, 2015). In the Capital Asset Pricing Model (CAPM), Sharpe (1964) and Lintner (1965) provided us with a framework for understanding returns and the systematic risk of a company as calculated by its relative exposure to market factors. They argued that the combination of assets and maturities of liabilities was the key factor in understanding stock return vulnerability to interest

rate changes. Within the area of alternative investments in the stock market, the banking industry has played a critical role. According to Joseph (1954, pp.69-70) an investor has attempted to evaluate shares of commercial banks because some special factors used in evaluating process of commercial bank than other securities. The study also discusses the importance of diversification of possible loans, the loan-to-deposit ratio, and management of variables as specific elements in the bank review process. According to the foregoing rationale, an investor's investments in commercial bank stocks are more secure than those in other securities.

There aren't many reports on the effects of interest rates and commercial bank stock returns in Sri Lanka. According to Piyadasa (2007, pp. 45-46) "financial market in Sri Lanka needs to go further to improve their efficiencies to bring them up to the standard of international financial markets." Given the importance of interest rates in determining commercial bank stock return, this study aims to fill a void in the current literature by empirically investigating the relationship between interest rate and commercial bank stock return in Sri Lanka.

Problem Statement and Research Questions

The researcher investigates the complex relationship between commercial bank stock returns and interest rates, with a focus on the Colombo Stock Exchange. "What is the effect of interest rate on commercial bank's stock returns in Colombo Stock Exchange?"

Objectives

The research objective is one of the most important aspects of any analysis.

Main objective:
The study is to identify the effects of interest rate on commercial bank's stock returns in Colombo stock exchange.

Sub-objectives:
1) To find whether there is a relation between interest rate and stock return
2) To give practical implications.

Research Methodology

Stock prices of commercial banks and Central Bank of Sri Lanka(CBSL) interest rates have been used for the study. Stock prices reflect the stock returns. The stock return data includes monthly share price for each commercial banks. Stock prices are based on the All-Share Price Index (ASPI) of the Colombo Stock Exchange, while interest rates are based on statistics issued by the CBSL. Secondary data was used in the analysis to calculate individual stock market returns as well as the relationship between changes in the central bank rate and commercial bank stock returns. Only 12 commercial banks were listed in Colombo Stock Exchange. As a result, for a five-year period, from 2012 to 2019, this study examined the sensitivity of central bank interest rate changes on stock returns of listed commercial banks in Sri Lanka on a monthly basis. The Central bank rate collected from CBSL official web site and the stock return data were collected from Colombo Stock Exchange.

The data used inthis study was analyzedusing MS Excel, maps, tables and basic statistical methods, su ch as financial ratios.
In addition to the Descriptive statistics, Pearson correlation and Panel regression process was used. The descriptive analysis method was used to determine the pattern of Central Bank interest rates and to assess the extent of stock returns of Sri Lanka's listed commercial banks utilizing monthly data from 2012 t0 2019.

The capital asset pricing model was also used to perform a regression study (CAPM). This research therefore applied the CAPM model given below to calculate the individual monthly stock returns over the study period for listed commercial banks.

$$E(R_j) = R_f + (R_m - R_f) B_j \quad \text{......1}$$

$$B_j = \frac{Cov(j, m)}{\delta^2 m} \quad \text{......2}$$

$$R_{it} = \alpha + \gamma_m . R_{mt} + \gamma_u . \Delta I_{ut} + \varepsilon_t \quad \text{......3}$$

The t-test was used at 95% confidence levels to determine the significance of individual variables in the regression model. In addition, Microsoft Excel was used to analyze the data. In addition, the acquired data was analyzed using descriptive statistics, person correlation, and the panel regression methodology with the help of STATA software. The data collection will have a normal distribution if the skew and kurtosis values are both equal to 0.

Findings and Conclusions

The main objective of the study was to investigate the sensitivity of central bank interest rate changes on stock returns of listed commercial banks in Sri Lanka for seven-year period, from 2012 to 2019. And then to find whether there is a relation between interest rate and stock return. Stock returns are negatively linked to shifts in the interest rates of the central bank, which are consiste nt with previous empirical literature.

The study showed that commercial banks have assets and liabilities that are sensitive to interest rates, so the stock returns of commercial banks are believed to be especially responsive to changes in the int erest rates of central banks.

As a sub-objective of the study was to find whether there is a relation between interest rate and stock return and give practical implications has also been investigated. Accordingly, it has been identified as a negative relationship between interest rate and stock return and practical implication through empirical review of the study.

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Investor Demographics and Investment Decision: Behavioral Bias in Colombo Stock Market

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Keywords: Demographics, Investor Behavior, Investment

Introduction

Be it rational or irrational decision process, financial judgments and choice made by individual economic agents are motivated by their self-interests. Investors respond heightened market volatility by being irrational, these changes in market positions and resultant shifts in investor sentiment calls the adaptability of market participants. The decision-making process could be intervened most importantly by behavioral factors. Investment behavior can be identified as the way an investor observes, forecast, analyze, and judge the strategies for decision making. Demographic characteristics are certain qualities of a given population that can be used to categorize them into subgroups. These characteristics lead to identifying similar attributes within the same subset. Analyzing the relationship between demographic variety and investor behavior would allow individual investors to enhance the quality of their investment decisions while enabling them to achieve higher returns from the buying and selling decisions. Therefore, it is noteworthy to identify the role of demographic factors on individual investor behavior as it may assist individual investors to make proper decisions and also financial service providers to specify their services. The outcome of this study would provide an understanding not only within the Sri Lankan context but also can extend up to the South Asian region since the cultural and behavioral aspects of people within South Asia depicts a moderate level of similarity other than Western and European regions.

Literature Review

Investments also can be categorized based on characteristics, benefits, and risk associated. Prior researches reveal shreds of evidence on main factors that could draw an impact on stock selection decisions. (Gunathilaka, 2014) had identified that investor behavior is influenced by recent past data on stock performance and risk level associated. Additionally, investors' market awareness, expectations on political stability, economic condition, and firms' stability are key players that mold the investor choice. (Mak and Ip, 2017) to sum up that after the financial crisis investors in Hong Kong and Mainland China have become more cautious towards investments and especially regarding high-risk financial products. Moreover, they found out that age, income level, educational level, gender, marital status, and investment experience are the main attributes that impact investor behavior and preference. Additionally, the researcher has suggested financial service providers utilize the findings for the design and promote various financial products that meet the significant attributes of investors in terms of demographical, psychological, and sociological basis. (Mwaka, 2013) had disclosed several interesting findings on how the demographic variables impact individual investment behavior. For an instance, male investors are overconfident and less affected by herding bias instead female investors are heavily affected by herding behavior plus they are less confident and more loss averse. Moreover, younger investors are relatively mostly affected by herding behavior because most likely they tend to follow the market trend when making decisions and also prefer to go after what friends are doing. When considering educational level (Mwaka, 2013) claimed that education level builds investors' confidence over their decisions. Investors with a low level of education are more prone to herding since they blindly follow what others are doing. Conventional financial theories exaggerate that investment behavior is based on complex financial models to maximize wealth which is considered the key objective of an investor. These models are based on the assumption that the investors are rational and markets are efficient. But people cannot be expected to be rational or markets to be always efficient. Behavioral biases define a repeatable pattern in inaccurate judgments or illogical decisions of investors since they let emotions and fate overrule rationality.

Problem and Objectives

In the frontier stock market of Sri Lanka, to the best of our knowledge, this is one of the first studies attempting to test the existence of cognitive bias, providing empirical evidence on impact of human psychology behavior. Thus, this paper has been designed to serve two main purposes: First, it examines the impact of searching information, self-attribution, and overconfidence biases on rational/irrational decision processes. The study focusses on investor demographic factors and investment behavior, therefore we expect to identify the significance of demographic factors on individual investment behavior.

Methods

The population of the study considered all the individual stock investors in Sri Lanka. The researcher chose a sample of 304 investors from CSE. The study relied on primary data and the data collection tool used here was a questionnaire. The research study includes one dependent variable and six independent variables. Independent variables demonstrate demographic factors and dependent variable indicate the individual investment behavior. We consider gender, marital Status, education, age, occupation, and monthly Income of the sample respondents. The researcher conveniently collected data from individual stock investors by sharing a Google form via email. The reliability, validity, and descriptive statistics were obtained using SPSS. Detailed descriptive analysis has been performed in order to find out the significance of each demographic factor on investor behavior and furthermore, one-way ANOVA test and the Independent sample t-test have been undertaken for hypothesis testing.

Findings and Conclusions

It has been observed that individual investor behavior is affected by the demographic characteristics of each investor. Investors with different demographic attributes engage in different decision-making patterns. Not all investors are driven by rational thinking when it comes to decision making. When we focus on gender, male investors seem to be more overconfident and more heuristic, in contrast, female investors are more towards the disposition effect. Both are equally impacted by the confirmation bias. The age of the investors does not seem to affect a lot differently in investor behavior. In terms of education, when regarding the investors with school and other level education, they are more into disposition effect but apparently when the investor s' educational level increases the impact of the disposition reduces. Investors with professional and higher education are more towards heuristic also, they are more confident in their decisions than investors with school and other education are. In the account of marital status, it does not signify a considerable impact on individual investor s' behavior. Monthly income can be counted as a significant demographic characteristic that draws an impact on individual investor behavior. The researcher has found that investors with low and moderate-income are more heuristic where high-income level investors are not. Higher-income level investors are more driven by overconfidence bias but investors with lower income are relatively not. Instead, lower-income investors are relatively impacted by confirmation bias than others. It seems like the disposition effect is not impacted by the monthly income of the investor. In the case of the occupation, investors engage in fixed income employment and other employment are much heuristic. Apparently, businessmen are more confident in their decision making than others. Through the hypothesis testing, it has been recognized that out of the six independent variables used in the study only gender, education, occupation, and monthly income are the demographic variables that are affecting the individual investor behavior in Sri Lanka.

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COVID 19 Impact on the Performance of SMES in Sri Lanka

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Keywords: COVID 19, Sales Performance, Small and Medium Enterprises (SMEs), Sri Lanka

Introduction

Today nature has given a break to every human being due to unpredicted and uncontrollable COVID 19 pandemic. Corona virus severely affect not mere the health aspect of the world population but also multiple aspects including social, political, economic, educational, communication, entertainment etc. It brings uncertainty and threat to human existence, policy making, and economies; although everyone has to work continuously towards achieving their desired goals. Thereby most economies collapsed due to high unemployment, reduction of GDP, interruption to demand and supply chains, decrease labor productivity and efficiency, stock markets collapses etc. COVID 19 has threatened all businesses including Small and Medium Enterprises.

SMEs are most vulnerable to the effects of covid-19 (Malik, et al., 2020). Hence SMEs dependent on the velocity of money from merchandise sales, market demand, raw material supply. The implementation of social distancing makes people limit activities outside their home, consequently demand and sales turnover decreases. Currently they face problems from COVID 19 to their repayment ability, reduction of turnover, decline of productivity, additional expenses to maintain health-care requirements, unable to serve customers, unable to pay salary to employees and be in compliance to commitment with suppliers. SMEs still face these challenges in reopening business, reopening permits, lockdown, health regulations, broken supply chain and logistics etc. COVID 19 also brings positive effects to the SMEs. Today's environment brings in new business opportunities like sanitary products, face masks, seeds and fertilizer, online education, cultivation, plantation and work from home etc. On the other hand, there are massive innovations coming to the field. It reshapes innovative thinking and enhance innovative products in SMEs context. Covid-19 pandemic has become the right moment for SMEs to improve the quality of their products or services and to develop various strategies for offering goods or services based on business concern.

To date, most of the studies on SMEs are based on women's empowerment, impact on poverty; economic and rural development; social well-being. COVID 19 pandemic has impacted each and every aspect of the society, it has already impacted the business sector. Hence SME are one of the significant players of the business sector, it is important to investigate COVID19 impact to SMEs. There are many empirical studies going on the COVID 19 impact on SMEs (China, Malaysia, Indonesia, USA, UK, and Pakistan etc.). Therefore, this empirical study focuses on identifying COVID 19 impact on SMEs in Sri Lanka.

Problem Statement and Research Questions

Today COVID 19 health pandemic has led to an economic crisis in the entire world. Based on concurrent arguments and debate going on the COVID 19 and SMEs, it's important to investigate **"How COVID 19 impact on the performances of SMEs in Sri Lanka?''.** Hence Sri Lanka is still a developing country and our SMEs are mostly affected by COVID 19.

Literature Review

It is important to investigate the current debate and existing evidence from the literature of the impact from COVID 19 on SMEs. Many empirical studies have emerged and also still ongoing based on COVID 19 impact on SMEs. COVID 19 has affected almost every corner of the world, ignoring the country's development status. Now the global economy is in the worst downturn since the great depression of the 1930s.Therefore development status link with the magnitude of COVID 19. Developed countries also face many challenges from this pandemic like developing countries. COVID 19 brings lot of uncertainty to the world due to its tremendous speed of spread. It has led to increase in unemployment rate, increase the stock market volatility, uncertain GDP growth; trade; industrial production and other measures. USA, UK, Eurozone and Japan are experiencing contractions.

Role of SMEs and its contribution to the economy is already identified proved. Based on the literature, SMEs have the potential to quickly seek and seize the market opportunities even in a turbulent time (Syriopoulos and Konstantinos, 2020). SMEs as the engine of the economy, they play a vital role in economic growth; contribute for national employment; new market opportunities; GDP; tax collections; create employment; spur innovations and alleviate poverty, ultimately leading to economic development. Since SMEs is the major role player of MF borrower, it's worthwhile to investigate what kind of impact is brought by the COVID 19 to MF sector. There are also many empirical investigations to identify the impact. Malik, et al. (2020) introduce framework for identifying and assessing crisis response of MF and MF services, hence informal workers, SMEs face severe financial stress based on social distancing and lockdown measures. It suggested to prioritize relief to MF clients, enable MFI to stay operating safety, provide increased access to liquidity. Women vulnerabilities hugely effect on women empowerment in SMEs context. Women encounter triple burden in productivity, reproductivity and community work. Further this COVID 19 outbreak increased women's workload and reduced women's ability. Mclaren, et al. (2020) reveals discrimination towards women health workers, women's responsibility for children, pressure of cultural traditions in society and lock down has brought in huge challenges.

SMEs are the lifeblood of Sri Lankan economy. It accounts for a large portion of Sri Lanka's Economy with over one million of SMEs. (Approximately 75% of all business). SMEs appear in almost all the sectors of the economy. It contributes approximately 45% to employment. MSMEs contribute 52% to the GDP, accounts 90% of total enterprises in non-agricultural sector. Whereas MSMEs undergo many hardships. Even though SMEs face problems in normal time as well. Due to weak business environment, inadequate infrastructure, inadequate access to finance, low technology capacities, lack of mechanism for protection, lack of recognition and lack of drive for innovation, creativity. As per the survey of International Trade Centre (2020), Sri Lankan SMEs get affected by this pandemic. Thereby Micro (62%), Small (71%) and Large (71%) enterprises undergo many hardships and challenges. Although Medium sized enterprises are more resilient than others. 64% of enterprises are strongly affected by this COVID 19 pandemic. Significant challenges to business were reduced sales (72%), difficulties of sourcing inputs (69%), reduce logistics availability (53%), cash flow stress (52%), temporary shutdown business (45%), drop of new investment (34%), while 9% enterprises increase sales.

There should be proper and sustainable mechanisms for SMEs to recover. Thus, many SMEs get support from financial institutions, few SMEs used new digital technology. These are recommending to increase the access to working capital and other loans, increased capacity building and other

business services, support transition to digital channels. MTI Consultants (2020) introduce a response model for COVID 19. PWC (2020), suggest strategies for Short term, Mid-term and Long term. They suggest funding based initiatives (Enterprises financial facility, business disruption funding scheme), tax or grant based initiatives, Re- assess business investment portfolio as short term strategies. It is ideal to encourage investment and capital flows as medium term strategies. For long term, it is important to accelerate up scaling of employees, invest in technology to enhance process, evaluate the business model to expand new sales channels and access new markets.

Institute for global environment and sustainability (2020), introduce potential solutions for these challenges. In short term medical waste, Air Quality, Sustainability life styles are the challenges while addressing urgent concerns as a solution. Green new deal is the key challenge in the medium term, thus it is ideal to paving the way for post crisis green recovery. Integrated approach, sustainable cities, climate adaptation planning and management of global risk are the challenges in the long term, thus it is worthwhile to create a resilient and sustainable society. Success or the failure of policies depends on whether those policies induce socially desirable patterns of behavior among citizens, future expectations of policies and how people respond those policies. [According to Chang and Velasco as cited by Di Mauro (2020)].

Objectives

Main Objectives:

- To prepare a conceptual review on the impact of COVID 19 on SMEs in the world.
- To explore the impact of COVID 19 on SMEs in Sri Lanka

Research Methodology

This study used deductive approach which mainly focuses on identifying the impact of COVID 19 on SMEs' performances and mixed approach was used to carry out this study. This involves conceptual review (qualitative approach) from available literature (Secondary data) to build a conceptual review and Primary data collection and analysis (quantitative approach) to identify the impact of COVID 19 on SMEs in Sri Lanka, then applying statistical tests to analyze those collected primary data. Primary data (Demographic details of SMEs owners including gender, age, marital status, experience, industry, etc. and average sales turnover before and after COVID 19), were directly collected from the owners of SMEs through questionnaire based on face to face meetings and telephone conversations. Secondary data were collected through journal articles, reports related to ongoing debate of COVID 19 impact to SMEs in the world and Sri Lanka. Descriptive statistics was used for analyze the primary data. Those descriptive data supported in getting an overall understanding regarding the data set collected for this study. In order to prepare the data, the IBM SPSS Statistics software version 23 was used. Conceptual literature review method used for analyzing secondary data to get insights of Overall COVID 19 impact, COVID 19 economic impact, COVID 19 impact on SMEs, COVID 19 impact to SMEs in developing countries, developed countries and Sri Lanka.

Findings and Conclusions

SMEs are the backbone of any economy. Since SMEs are most vulnerable sector even at normal times, SMEs are in a big struggle due to COVID 19 pandemic. It brings both pros and cons to SMEs. There are numerous problems from COVID 19 to the SMEs context as; including short term, mid-term and long term basis. COVID 19 brings issues in Cash flow; maintain staff; finding seed finance; drop of demand and revenue; supply chain interruptions; stop operation; bankruptcy, unable to pay creditors, wages, utility bills, loans etc.

It also creates opportunities. It encourages health care products, cultivation, agriculture, Work from home (WFH), online education; communication. It leads to arrive many innovations in health care sector, education sector, communication field. Now people tend to have a healthier life cycle, WFH, social disruption which brings many opportunities but still those are hidden. SMEs should be smart enough to grab the positive aspects while forcing obstacles of COVID 19.

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Share Price Reaction to the Rights Issue Announcements: Evidence from Colombo Stock Exchange

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Keywords: Share Price, Rights issue Announcement, Price Movement, Price Behavior, Colombo Stock Exchange

Introduction

The price of a share is determined through supply and demand for shares in the capital market. Share prices vary with different incidents such as economic conditions, interest rates, inflation rate, stock splits, bonus issues, or rights issues. Rights Issue gives entitlement for existing shareholders to purchase further shares at a discounted price in proportionate to the current shareholding of them. The announcement regarding the Rights Issue is a significant corporate information of the company. Announcement of Rights Issue affects share prices, as it signals an increase in the supply of shares. However, when companies are unable to borrow further money from outside, the funds received from Rights Issue can be used to settle down the debt. Moreover, to ensure all Rights being exercised, companies can have their Rights Issues underwritten by an investment bank. The research study is carried out to identify how share price reacts as a result of the Rights Issue Announcements made by companies listed on the Colombo Stock Exchange. All prior researches conducted, cover the time before 2013. Therefore, no research has been undertaken in recent times assessing the improvements in the trend of share price reaction to the Rights Issue announcements. Hence it is vital to investigate the improvements in the trend and current efficiency level of the CSE.

Literature Review

Most of the researches conducted during the 20th century reveal that there is a negative impact on the share price by the Rights Issue announcement. Asquith and Mullins (1986), White and Lusztig (1980), Marsh (1979), Hansen (1988) and Kalay and Shimrat (1986) reveal that there is a strong negative relationship between share price and Rights Issue Announcement. Hansman, et al. (1971) and Levy, et al. (1971) reveal that no systematic abnormal returns were obtained by investors. Hence, they supported the no price effect argument. There is a clear-cut difference between the findings of researches conducted in developed markets and developing markets. Salamudin, et al. (1999) reveal that price reaction to the rights issue announcements differs based on economic condition. Kit (1990) reveals that the Rights Issue Announcement has a temporary negative impact on the share price.

Most of the studies conducted in 21st century (Marsden, 2000; Martino and Busatto, 2018; Kabir and Roosenberg, 2002) also reveal that there is a strong negative relationship between share price and the Rights Issue Announcement. Bolognesi and Gallo (2013) reveal that there are statistically significant positive abnormal returns around the Announcement Date. Ariff, et al. (2007) reveal that Rights issues typically result in significantly large positive CARs during periods of economic growth but small positive, insignificant CARs during economic downturns. Tan, et al. (2002) found a positive impact on price from seasoned equity issues in Singapore. Marisetty, et al. (2008) reveal price reaction to rights issue announcements is positive but statistically insignificant. Researchers conducted on the Colombo Stock Exchange. Bandara (1997) reveals Sri Lankan Stock Market is inefficient in the semi-strong sense. Further, some studies indicate that Cumulative Average Abnormal Returns are positive during the pre-event window and remain negative until the end of the post-event window (Edirisinghe and Nimal, 2015; Weerakoon Banda Y.K., Safeena, G. 2005). Ramesh and Rajumesh (2014) point out that shareholders earn positive Average Abnormal Returns (AARs) on the Rights Issue Announcement date. Dharmarathna and Amarasekara (2016) reveal market reacts negatively to information after the rights issue of announcements in the Colombo Stock Exchange.

Research Questions

- How does share price react to the Rights Issue Announcements of listed companies in CSE?
- Is Colombo Stock Exchange in its Semi-Strong form efficiency?

Objectives

- To examine how the stock price reacts to the changes in Rights Issue announcement.
- To examine the magnitude effect of share price movement followed by the Rights Issue.

Research Methodology

Cross-sectional secondary data has been collected from the Colombo Stock Exchange. The mono method is followed in analyzing data using Experiment strategy. The deductive approach is utilized to test the hypothesis, considering the nature of the research study. Positivism philosophy is adopted because the study is external, objective, independent of social factors, and quantitative as share price reaction to the rights issue announcements is measured through average abnormal returns. As a sample period, 2014 January to 2019 June is selected. Secondary data published by the Colombo Stock Exchange which is the CSE's data library CD is used. The availability of data is a key factor when selecting the sample period. The database contains data only up to the second quarter of 2019. All events that took place during the sample period and qualified for the following criteria were used for the study to improve the validity of the research. Whether other corporate announcements were taken place along with the rights issue announcement on the same date, Monthly average trading days, Availability of event date share price or immediate prior date share price were considered. According to the other selection criterion the events are selected where monthly average trading days are greater than or equal to 15. The standard Event Study methodology is utilized to estimate the announcement effect of rights issue announcements. Mean Adjusted Return Model (MAR), Market Adjusted Return Model, and Market Model are identified as alternative Models for forecasting Expected Return.

Findings and conclusion

The study found a significant market reaction on the rights issue announcement day. The signaling provided by the rights issue announcement was absorbed by the market on the event day. Event day (Day '0') average abnormal returns are statistically significant at a 5% level across all models. Shareholders experienced negative average abnormal returns of -2.91%, -3.03%, and -2.64% for the day '0' according to the results of Mean Adjusted Return, Market Adjusted Return, and Market Models respectively. It suggests that shareholders will experience negative AARs for most of the days around the event day. Therefore, there is evidence of a negative anticipatory effect. The Cumulative Average Abnormal Returns for the (0, +10) period are -6.74%, -6.88%, and -2.68% for Mean Adjusted Return, Market Adjusted Return, and Market Models respectively. The efficiency level of the Colombo Stock Exchange has not improved even in the recent past. Management of companies should make attempts to communicate important information to the market on a timely and regular basis. However, the behavior and interpretation for rights issue announcements by the investor in emerging markets appear to be not similar to the developed markets. The authors will suggest regulatory authorities to take measures to improve the efficiency level of the Colombo Stock Exchange, semi-strong form the information should be more publicly available and more publicly accessible, and the SEC of Sri Lanka could increase its monitoring activities on the stock market.

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Corporate Governance and Firm Performance of Sri Lankan Listed Companies: Evidence from Colombo Stock Exchange

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Keywords: Corporate Governance, Firm Performance

Introduction

Corporate governance has become a popular and evolving discussion area due to corporate failures, scandals and frauds happened all over the world. The policies, procedures and principles of corporate governance assure good returns to all types of stakeholders of a corporation (Shleifer, 1997). Corporate governance deals with suppliers of finance assuring and getting them good returns on their investment. It should provide the structure for implementing, monitoring, and achieving the goals and objectives while ensuring accountability to all the stakeholders of a firm. The significance of introducing a corporate governance system, is to promote and enhance good governance in the companies, improve investor confidence and to promote economic development of the company. Better governance mechanisms are most beneficial when finding greatest needs for financing in the future in order to expand potential and growth opportunities since it gives signals about the firm's ability to serve the rights and obligations of shareholders (Himmelberg, 2002).

Much attention has been generated to activate corporate governance practices globally also because of various scenarios which caused to scandals, collapses and existence of firms in this turbulent corporate world. It is important to understand how CG practices influence on firm performance in relation to strengthen the business sector. It will also benefit decision makers, researchers as well as policy makers to introduce new best practices and developed standards. This study aims to focus on identifying the relationship between internal corporate governance variables and firm performance in Sri Lankan context.

Literature Review

"The system by which the company is controlled and directed" is the most common definition about corporate governance (Cadbury, 1999). Corporate governance is concerned more about who is empowered to take decisions, whose interest is to be given priority when taking decisions and, whether contextual factors like social, political, economic and legal institutions are impacting the decision-making process (Kapil, 2017). It coordinates different types of stakeholders, manages, directors, creditors, customers, employees, and the rest of the society to enhance the corporate performance and wellbeing as a common goal. The policies, procedures and principles of corporate governance assure good returns to all types of stakeholders of a corporation. CG deals with suppliers of finance assuring and getting them good returns on their investment (Andrei Shleifer, 1997). Better governance mechanisms are most beneficial when finding greatest needs for financing in the future in order to expand potential and growth opportunities since it gives signals about the firm's ability to serve the rights and obligations of shareholders (Himmelberg, 2002). CG system should be covered with the principles of accountability, transparency, reliability, and fairness in order to create a smooth business environment for corporations and all the participants (Yildirim, 2015).

Abor and Biekpe (2007) found that board size has significant positive impact on profitability. A large volume of research has been conducted to understand the ideal board size that inspire the ability of the board to perform the best and maximize the shareholders' wealth (Jensen, 1993) and the importance of non-executive directors in a firm. Agency theory advocates that higher percentage of independent directors on the board causes to improve firm performance. Fosberg (1989) found that there was no significant difference in indicatives of the firm financial performance between firms whose BOD were comprised more from outside directors and not. Previous literature has witnessed that managerial ownership in the company is a vital factor that reduces agency conflicts and promotes company

performance (Al-Khouri, 2006). Many studies reveal that ownership concentration affects to a certain limit on firm performance and then it is not directly affected. Stewardship theory views as CEO duality of a firm should lead to gain higher performance. Some researchers are identified CEO duality as an effective device which promotes productiveness because it enables a clear and powerful leadership structure. Agency theory accepts the board independence is increased by the diversity among directors. Some argued that more gender-diverse board may be unsuccessful in well-governed firms due to excess monitoring process (Adams, 2009).

Through the review of literature, it can be identified that board characteristics in governing companies is most important as it significantly affects to firm profitability and performance. Majority of studies aimed at CG and firm performance have studied in developed economies making conflicting results. This study tries to see the influence of board gender diversity which is not yet broadly considered board characteristic in existing literature, on its performance and generate a sound understanding about complying CG practices to every firm in Sri Lanka without limiting to listed companies in CSE. The research gap can be identified in the area of internal CG attributes which broadly discussed through code of best practices on CG, especially in the Sri Lankan context.

Problem Statement and Research Questions

Sri Lankan CG practices are predominantly derived from the British practices and largely recommended though voluntary codes. As a result, managers of the public listed companies in Sri Lanka have considerable direction in deciding the types and the extent of CG practices implemented in their companies. Most of listed firms in Sri Lanka adhere the code of best practices on corporate governance since it is mandatory legal requirement instead of realizing its significance to their business context. It is important that business firms get to know the significance of applying and implementing CG practices in a better way to reach their ultimate goal by increasing the performance. Therefore, this quest aims to quantify the contribution of internal CG practices on the firm performance.

This study aims to gain answers to the following research questions.

1. Is there a relationship between corporate governance practices and firm performance and how it affects to improve the firm value?
2. Is there a correlation between corporate governance mechanisms and firm performance?
3. Is the relationship between the CG and firm performance positive or negative and how firms efficiently use CG practices?

Objectives

1. To identify whether there is a relationship between corporate governance practices and firm performance.
2. To measure the relationship between corporate governance and firm performance
3. To understand how to improve the efficiency in the firm performance through the best corporate governance practices

Research Methodology

The study makes use of five governance mechanisms which are board size, board independence, board ownership concentration, CEO duality and board gender diversity as independent variables. Corporate performance is calculated using ROE, ROA, EPS, and Tobin's Q as dependent variables to represent both financial and market performance. Out of non-financial companies (219) in Sri Lanka, 70 listed companies were selected for the present study and data gathered from 2014/15 to 2018/19. Listed firms in Sri Lanka have been classified into 20 industrial sectors by the Colombo Stock Exchange (CSE) based on the nature of the core business activities of the firms. Every listed company is bound to prepare its financial statements in accordance with the approved accounting standards as applicable in Sri Lanka. The sample of the study which can be identified as a short-balanced panel constitute data for 70 listed companies for the period of 5 years with a total of 350 observations. The

data about the internal CG attributes of the listed companies were obtained through the corporate governance report provided in each annual report and data for dependent variable measurements were collected through the financial statements of each annual report. The study used panel data methodology because the sample consisted of data across the firms and over time. Multiple regression models are used to interpret the relationship between CG and firm performance while considering correlation analysis, which is a method of statistical evaluation was carried out to find out the relationship between determinants of CG and the measures of firm performance and descriptive analysis which provide simple summaries about the sample. The effect of CG mechanisms on firm performance is examined by using fixed effect model considering the heterogeneity in the sample.

Findings and Conclusions

This study investigated the influence of internal corporate governance attributes on firm performance measures in listed firms in Sri Lanka. Theoretically, the effectiveness of board of directors and their attributes are expected to be positively related to corporate governance quality leading the firms to high performance. The size of the board is eight members on average in Sri Lankan context, as recommended and argued by the US studies. From the study, it can be said that board ownership seems not to be statistically important, and it does not influence the profitability of Sri Lankan listed companies whereas board size, board independence, CEO duality and board gender diversity are important variables for determining the profitability (ROE, ROA, EPS) and market performance (Tobin's Q) of Sri Lankan listed companies. The study found that CEO duality of a firm has emerged as an important determinant of firm's performance, but the interesting part is that it is negatively related with firm performance. Another one is board size which is statistically significant and positively associated with all four performance measures. The effectiveness of board of directors and their attributes are expected to be positively related to corporate performance. Separate individuals for the positions of CEO and the chairman supports to enhance the firm performance according to the regression results. The number of female representatives in the board has a positive relationship with the market performance measure but it is insignificant.

It is important to understand that only board size has statistically significant relationship as well as positive correlation with both of financial and market performance according to the regression results. It is the only corporate governance attribute which is statistically significant with market performance. Other variables do not have statistically significant relationship with market performance. Moreover, it is observed that board ownership concentration is not statistically significant with any performance measure revealing it has no significant relationship with both financial and market performance. It is the only variable which is not having a statistically significant relationship with dependent variable the study is used. Other three variables namely board independence, CEO duality and board gender diversity have statistically significant relationship with at least one of financial performance measure but not with market performance. It is concluded that only board size significantly, and board gender diversity insignificantly influence on both aspects of firm performance. Sri Lankan listed companies appear to be give more concern to enhance the board size and number of independent non- executive directors according to the results the study is carried out. When considering the board gender diversity, the study argues the female representation of an organization has an impact on firm performance in listed companies in Sri Lanka

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Back Testing Trading Strategies; Evidence from Malaysian Commodity Future Market

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Introduction

Ever since, assets trading evolves, investors have desperately searched for measures that can guide them towards more profitable venues. Through this, investors expect to create and maximize their wealth. However, investors are facing enormous potential risk of losing their wealth when they attempt to trade on a particular asset. As well as they earn profits and accumulate wealth with accurate predictions, investors would face extensive losses in the invested capital with inaccurate predictions, unless a quick move is made to leave the unfavorable position at the earliest opportunity (Vezeris, et al., 2018). In making accurate investment decisions investors use both fundamental analysis (FA) and technical analysis (TA). TA studies the historical price patterns or trends that provide signals regarding future price movements. This act is rather short term than long term in contrast to FA. Over past few decades specially with the technological improvements and convenience the popularity of TA has grown rapidly among the investors (Chong and Ng, 2008).

The Efficient Market Hypothesis, which assumes that the market prices at any given time reflect historical, public and all the available data contradicts with fundamentals of TA. Fama (1970) presented that the past prices could not be used to predict future price movements. This was further proven by the results presented by Allen and Karjalainen (1999) as well Tanaka-Yamawaki and Tokuoka (2007) where mainly focused on commonly used technical indicators which are Moving Average Convergence Divergence (MACD) and Relative Strength Indicator (RSI). However, the results are far from conclusive since there are number of studies that presents with positive results in favor of specifically on MACD and RSI alongside other TA indicators as well. A study conducted by Papadamou and Tsopoglou (2001) reveal specifically that the TA could generate considerably higher returns in contrast to buy and hold strategies based on eight years of two currency pair data. Further, into the background, Chong and Ip (2009) revealed that the momentum based technical strategies showed a significant success in the emerging currency markets. Chong, et al. (2014) studied different stock markets from five Organization for Economic Co-operation and Development (OECD) countries and results of the study revealed that MACD (12,26,0) and RSI (21,50) were generating extreme returns under Milan Commit General and the S&P/TSX Composite Indexes. The study concludes that the main reason for this may be the stock market in Italy is inefficient compared to other stock markets taken to the consideration as it is relatively less developed than stock markets of other OECD countries leaving the conclusions that TA methods are more suitable for the inefficient less developed markets.

Literature review

The objective of the TA is to forecast financial data. Traders often use this methodology in predicting future price movements. Therefore, this is based on a fundamental assumption. That is there are patterns and trends distinguishable in the past price data and those will repeat in the future themselves (Kampouridis and Otero, 2017). Further, the same study insists on the fact that it is worthy to exploit those trends and patterns to anticipate future movements and be in better position to make profits. As such, number of studies have focused on building out trading strategies using TA signals, little focus has given towards identification of theoretical basis of TA. Behavioral Finance, which attempts to explain the behavioral aspect of the investors through psychological and other behavioral theories has

identified this gap and laid the foundation and become the theoretical basis for TA (Chong, et al., 2014).

Having laid the theoretical background, number of studies been undertaken to assess the reliability and profitability of the TA strategies. Chong, et al. (2010) has attempted to calculate and compare the effectiveness of basic TA indicators for the BRIC countries. As per their results Russia records the highest profit level over other countries studied. Further it revealed that open market of Brazil as the most efficient market among the countries studied. However, this study had not incorporated the buy and sell transaction cost when trading within the open market. Further, the results of this study supported the view that the financial markets evolve and become efficient over its maturity. Age of a particular financial market has a direct impact on extent of efficiency of the market and TA indicators could not outperform other strategies continuously such efficient market. As an alternative approach, Bettman, et al. (2009) suggested a proper combination of TA and FA could result in better profitable results rather entirely depending on a single method.

Problem Statement and Research Questions

Along the previous literature various academics attempted to find out a robust and better if not the best trading strategies that generate overall profitable results with regards to various markets and various assets. However, it is notable that there is less attention was given towards derivative markets in fact ones in the emerging markets. Therefore, problems arise that whether the existing technical trading models are still usable in such markets? How to back test trading strategies using available data and TA indicators? And how such strategy could have performed through the changing and uncertain derivative prices in an emerging market like Malaysian Crude Palm Oil Futures Market?

Research Questions:

- Can strategies based on TA indicators generate better results that exceeds FA continuously in emerging markets?
- Which TA indicators suit most for the forecasts in emerging derivatives market like Malaysian Crude Palm Oil Futures Market?

Objectives

- To identify whether technical trading strategies that clearly and simply signals out when to buy, sell or hold the assets even to the investors could outperform FA strategies.
- To back test sample technical strategies in order to clarify the results with regards to one of the most efficient derivatives markets in emerging markets; Malaysian Crude Palm Oil futures market.
- To identify which technical indicator-based strategies have the best potential to make a profitable trading strategy in Malaysian Crude Palm Oil futures market.

Research Methodology

Malaysian Crude Palm oil futures (FCPO) market index will be used as the primary data set to assess the profitability of the Moving Average, MACD and RSI based technical indicators and generalize on emerging derivative markets. In order to achieve the objectives of this study, we have developed models using spreadsheet software, and it would simulate the strategy under given parameters. Separate models have been designed to test separate TA tool-based strategy. It is assumed 1,000 units of local currency been invested at the beginning of each investment strategy and no other additional capital introduction is made during the period.

Apart from the descriptive analysis done for each individual indicator results, to draw formal conclusions about the analysis we tested following hypothesis.

H0a: There are no significant difference between mean value of daily profits from profitable trades and mean losses value from losing trades.

H1a: Difference between mean value of daily profits from profitable trades and mean losses value from losing trades are significant.

H0b: Mean returns from technical indicator-based strategies are significantly lesser or equal to mean results from Following the Market strategy.

H1b: Mean returns from technical indicator-based strategies are significantly higher than mean results from Following the Market strategy.

Findings and Conclusions

According to the independent sample t test, results at 5% significance level all other tested strategies except RSI shows significant mean profits from profit trades than the mean amount incurred in loss trades. However, the test ignores the volume of profit or loss trades hence does not provide a clear idea regarding overall profitability of the strategies.

Therefore, we undertook the second t test to further asses the profitability of each strategy and tested against the Following the Market strategy that represent the FA techniques. One sample t-test was completed to determine whether the corresponding strategy mean return is statistically different from the Following the Market strategy. The test results suggested that MACD, RSI and Buy above 7-day Exponential Moving Average strategies out of the nine strategies we tested show positive results at the 5% significance level.

Therefore, the results from the above techniques strongly in favor of the Behavioral Finance Theories that reject the assumption of well informed, rational behavior of finance. In Traditional Finance under Efficient Market (EMH) model it assumes there is no chance of continuous significant returns from TA techniques that employee study of past price movements and trends. However, the results should be tested more in different markets since, historically these techniques resulted in vague outcomes as well as some of the other techniques we tested also failed to provide positive results alone. Apart from that the study did not account for the transaction cost which could be significant given the high volume of transactions provided by a TA strategy.

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The Determinants of Integrated Reporting Quality of Sri Lanka

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Keywords: International Integrated Reporting Framework, Integrated Reporting Quality, Voluntary Disclosures, Content Analysis, Sri Lanka

Introduction

Integrated thinking was introduced by the International Integrated Reporting Council (IIRC) to meet the variety of information necessities demanded by various stakeholders in this rapidly changing business world, and developed a framework for preparing integrated annual reports instead of conventional annual reports which are only comprised in audited financial statements. However, currently, only a limited number of listed companies in Sri Lanka are practicing this framework resourcefully while the majority are lacking the awareness of the purpose of this framework. So this study was designed to assess the quality of their integrated annual reports and the factors affecting their level of quality. And as to the best of my knowledge, this is the first study to investigate Integrated Reporting Quality in the context of Sri Lanka. So the results of this study will help compare the organizational determinants of IR practice in Sri Lanka with other economies around the world. Also, this paper develops a comprehensive checklist to evaluate the Sri Lankan company's level of compliance with the International IR Framework in preparing an integrated report which will be helpful to get an idea about the level of adoption of IR in Sri Lanka by the year 2020.

Literature review

Many researchers have studied on the topics related to the integrated reporting and sustainability reporting. But there had been limited studies were taken place related to the topic of determinants of integrated reporting quality and currently, there are no any local studies related to this topic. Kilic and Kuzey (2018) have studied on the topic of Assessing current company reports according to the IIRC integrated reporting framework in the Turkish Stock Exchange. They have considered the annual reports of 64 listed companies in Turkish Stock Exchange and constructed a disclosure index based on the content elements of the IIRC reporting framework and then measured the integrated reporting disclosure score (IRS) of each company through a manual content analysis of its annual reports and stand-alone sustainability reports. To test the hypotheses, the authors performed several statistical analyses such as descriptive statistics, univariate statistical analysis, and multivariate statistical analysis. The results of the study showed that the IRS is significantly and positively associated with sustainability reporting, Global Reporting Initiative (GRI) adoption, sustainability index listing, and the presence of a sustainability committee. Iredele (2019) has studied on the topic of examining the association between the quality of integrated reports and corporate characteristics of listed companies in South Africa. This study was based on the data gathered from a sample comprising 100 firm-year observations of 20 companies in the Johannesburg Stock Exchange over the period (2013–2017) using the non-survey method via published annual reports. The research methodology used here were descriptive statistics, spearman rank correlation analysis, and Kruskal-Wallis H test. The results conclude that there was a significant relationship between the quality and length of integrated reports. And also found that firms vary in the level of quality of their integrated reports on the account of differences in profitability, the board size, gender, and firm size. And no significant relationship was found between the quality of integrated reports and leverage. The result of this study indicates that the length of the integrated report signals the level of quality of such report, which may be necessary for disclosing all material matters to satisfy the needs of a wide range of stakeholders.

Vitolla (2020) has studied on the topic of determinants of integrated reporting quality in financial institutions. This study was based on the integrated annual reports of 87 financial institutions including banks, insurance companies, and financial service offering companies in 20 different countries excluding South African financial institutions due to the mandatory nature of integrated

reporting for their listed companies. They have developed the integrated reporting (IR)-quality scoreboard was used to measure report quality and used the cross-sectional analysis, descriptive statistics, correlation matrix, and multivariate analysis as their research methodology. The results of the study indicated that Integrated Reporting quality was significantly and positively influenced by profitability, size, financial leverage, and the civil law system of a particular country. And they have concluded the practical implications of their study as the managers of large, profitable financial institutions which make greater use of financial leverage and that are localized in non-civil law countries, should increase transparency by expanding the content and quality of the information contained in the integrated reports.

And when it comes to the Sri Lankan context of research studies related to the integrated reporting practices, several researchers have studied the adoption level (Herath et al., 2020), diffusion of IR (Gunarathne and Senaratne, 2017; Senaratne et al., 2015) and implications of IR. But there were no any prior studies conducted to analyze the determinants of integrated reporting quality in Sri Lankan listed firms as per the best of my knowledge. So this study "Determinants of Integrated Reporting Quality in Sri Lanka" will address the research gap of identifying the organizational level determinants of integrated reporting practice and the significant relationships between the determinants variables of integrated reporting quality and level of integrated reporting quality in Sri Lanka.

Problem Statement and Research Questions

Even though all the listed companies in Sri Lanka started to follow IR at the same time, still, there's a huge gap in their way of reporting and alignment with the International Integrated Reporting Council (IIRC) framework. There may be some factors that influence the level of quality of Integrated Reporting by Listed Companies in Sri Lanka. Accordingly following research questions were addressed by this study.

1. What are the financial and organizational level determinants of integrated reporting quality in Sri Lanka?
2. What are the determinants that significantly affect the integrated reporting quality in Sri Lanka?
3. What is the nature of the relationship of those factors with integrated reporting quality in Sri Lanka?

Objectives

The objectives of this study are;

1. To identify the financial and organizational level determinants of integrated reporting quality in Sri Lanka
2. To examine how those factors are affecting the quality of Integrated Reporting.

Research Methodology

The required secondary data was collected through the 239 annual reports representing 19 industries which were available in the Colombo Stock Exchange (CSE) website. Profitability, Firm size, leverage, age of firm, the board size, female representation, and a number of pages of annual report have been considered as the organizational and financial determinants of integrated reporting quality. The level of integrated reporting quality is considered as the dependent variable of the model which was collected through content analysis. As per the methodology techniques such as descriptive analysis, correlation analysis, and regression analysis have been used to analyze the data to arrive at conclusions.

Findings and Conclusions

The results of the study showed that there is a positive and significant relationship between profitability, leverage, firm size, and board size with the integrated reporting quality. It was also

revealed that there is a negative relationship with the age of the firm (from the quoted date in CSE) and the integrated reporting quality which indicating that the older companies still using the conventional accounting practices while recently quoted companies are more looking forward to the integrated thinking which enables the good integrated reporting practices. The findings of this research will contribute to come up with encouraging strategies to boost up the integrated thinking and reporting practices in Sri Lanka and for the further studies which will be carried related to the integrated reporting practices in Sri Lanka.

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The Impact of Macro Economic Factors on the Capital Structure Decisions of Listed Manufacturing Companies in Sri Lanka

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Keywords: Equity and Debts, GPD, Interest Rate and Inflation Rate

Introduction

The success of financial decision of a company is mainly depended on its capital structure. Mostly the decisions are affected by firm specific factors, industry specific factor, Institutional factors, macro-economic factors etc. and macro-economic factors bring significant impact on capital structure decisions of companies. There is theoretical background of selecting the most optimal debt equity mixture. After the seminal paper of Modigliani and Miller (1958) emphasize that Bankruptcy risk of chosen financing mix is offset by the tax benefit of the debt. Apart from the Modigliani and miller theory, there are some more conditional theories; Trade off theory, Information asymmetry theory & timing theory (S.Myers, 2001). However, none of the theories has not universally accepted on capital structure decisions. As well as, the research contributes towards the firms and countries, especially for the corporate managers, governments, legislators, and policymakers in Sri Lankan context.

Literature review

Previous empirical literature has proven that macroeconomic conditions have a direct impact on capital structure decisions of companies with low viability and financial constraints on the target debt ratio. Some studies have revealed the international determinants of capital structure for leverage as firm size, tangibility, industry leverage, profits, and inflation factors (Öztekin, 2015). Study reveals that companies with more profits have less debt and less profitable companies have more debt (Lemma, T. T. and Negash, M., 2012).

Some findings suggest that the companies in countries with a better legal environment and a more stable and healthy economy do not tend to obtain more debt. (De Jong et al., 2008). The researcher has concentrated several theories; Modigliani-Miller Theorem, trade-off theory, agency costs theory, pecking order theory, and market timing theory and co-investment theory to find out the possible constructs relevant to identify the impact of macro-economic factors on capital structure.

There are number of studies which investigate the impact of macro-economic factors on capital structure but unlike prior empirical studies, this study focuses on the Sri Lankan context. Within the literature It is hard to find such study related to the Sri Lankan Context. Hence, the study would be a great support to determine the impact of macro-economic factors towards the capital structure decisions. Moreover, the output of the study pay attention on the stability of the overall macroeconomic environment and as the most recent data are used for the study, this gives a great contribution for the literature.

Problem Statement and Research Questions

The researcher can state the problem statement as;

Impact of Macro Economic Factors on the Capital Structure Decision of Listed Manufacturing companies in Sri Lanka

Based on the main research problem, researcher has identified research questions as;

1. How would the GDP per capita impact on the capital structure decisions of listed manufacturing companies in Sri Lanka?
2. How would the inflation rate impact on the capital structure decisions of listed manufacturing companies in Sri Lanka?

3. What is the impact of interest rate on capital structure decisions of listed manufacturing companies in Sri Lanka?

Objectives

Addressing the above questions of the study, the objective of the study is to investigate the impact of economic factors (GDP per capita, inflation rate and interest rate) on the capital structure decisions of listed manufacturing companies in Sri Lanka.

Research Methodology

The research is conducted with the special aim of identifying the impact of macro-economic changes on Capital Structure Decision of Listed Manufacturing Firms of Sri Lanka. To proceed with the study, the researcher has designed the conceptual framework based on the previous literature and identified the variables and their dimensions. The macro-economic changes have been identified as the independent variable and as its dimensions GDP per capita, inflation rate and interest rate are being investigated with the dependent variable of capital structure decision.

The population of this study is the listed manufacturing companies in Sri Lanka. The study has used convenient sampling techniques for the convenience of the researcher. Convenience sampling refers to the collection of information from members of the population who are conveniently available to provide it. As the sample of the research, 40 manufacturing companies were selected from listed manufacturing companies, on the basis of availability of audited financial statements from 2009/10 to 2018/19.

The methods used to gather the data for the study is secondary data sources which are financial statements, statistical data from annual reports and other related documents of chosen 40 listed manufacturing companies from 2010 – 2019.

The data analysis method used for this study is computer based statistical data analysis package, SPSS, version 23.0 for validity, reliability, and relationship testing and basically spread sheet application (M.S. Excel) is used for the basic extraction of information.

Findings and Conclusions

The R square value of 0.542 showed that 54.2% of total variations on capital structure decision (equity and debts financing) were attributed to the three variables. Once the negative power is adjusted to R square, it is referred to as Adjusted R square and it is 61.7% between variables. According to the regression analysis of the study, it indicates that GDP per capita, interest rate and inflation significantly affect the capital structure decision (equity and debts financing ratio) because the p – values of GPD, interest rates and inflation rates ratio are less than the 0.05. Hence, the model can be estimated as;

DER [ii]= 118.647 + 5.659(GDP) – 6.335(Interest Rates) -3.529(Inflation Rates)

Concluding results of regression analysis are interest rates and inflation rates have negative relationship and GDP per capita has positive relationship with capital structure decisions (equity and debts financing) and it significantly affects the capital structure decision. All the three alternative hypotheses of the study are accepted.

Accordingly, the creator further proposes that further examination on the impact of macroeconomic conditions on the expense of capital should be executed to get a comprehensive view on how macroeconomic conditions influence firms' financing choices and in this way the estimations of the firms.

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