# Student Conference in Finance 2022

## Proceedings

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

# Student Conference in Finance 2022

## Proceedings

**Department of Finance**
**Faculty of Management Studies and Commerce**
**University of Sri Jayewardenepura**
**Nugegoda**
**Sri Lanka**

# Student Conference in Finance 2022

# Proceedings

**Department of Finance**
**Faculty of Management Studies and Commerce**
**University of Sri Jayewardenepura**
**Nugegoda**
**Sri Lanka**
**15th July 2022**

Proceedings of the Student Conference in Finance
Department of Finance
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura
Sri Lanka

ISSN: ISSN 2659 – 2304



Edited by: Prof. R P C R Rajapakse

Cover Design by: Prof A G C Gunathilaka

Print by: Cybergate, Wijerama

Published by:

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

Tel: 0112801118 Email: finance@sjp.ac.lk

## Panel of Reviewers

Senior Prof. D B P H Dissabandara

Prof. Y K Weerakoon Banda

Prof. A G C Gunathilaka

Prof. K L W Perera

Prof. R P C R Rajapakse

Dr. P A N S Anuradha

Dr. N S N Nanayakkara

## Conference Chairperson/Coordinator

Prof. R P C R Rajapakse

## Coordinating Committee

Prof. R P C R Rajapakse (Chairperson/ Coordinator)

Prof. A G C Gunathilaka (Head: Department of Finance)

Ms. Miyuki Peiris

Mr. Ruwanga Wijesooriya

Ms. Priyanwada Palihawadana

Ms. Ruwangi Mahanamahewa

## Message from the Vice-chancellor

As the Vice Chancellor of the University of Sri Jayewardenepura, it is with great pleasure that I forward this message to the Fifth Student Conference in Finance (SCF) 2022 organized by the Department of Finance, Faculty of Management Studies and Commerce of the University of Sri Jayewardenepura.

Research is essential and crucial in academics and the impactful research outcomes are useful for decision makers to make effective decisions that will lead towards national and global development. Hence, the University of Sri Jayewardenepura provides an environment that imparts knowledge through teaching together with innovative research across multiple academic disciplines.

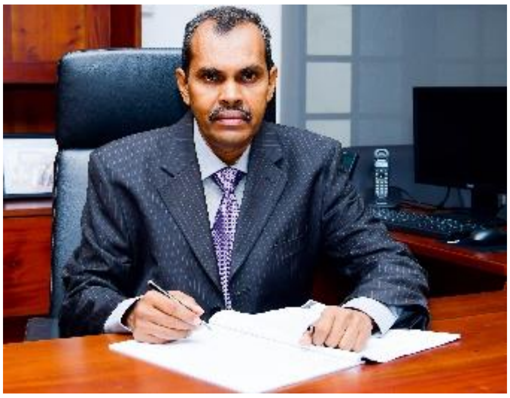
The Department of Finance from its inception has been keen on strengthening research and development by encouraging undergraduates to engage more in research and scholarly discussion. Despite facing multiple challenges posed by the Covid-19 pandemic and the economic crisis, the Department continues with the Student Conference by adopting digital technology while overcoming the setbacks in field-based data collection. This Conference creates a platform for academics, research scholars and undergraduates to discuss and develop new ideas and networks in the field of finance.

I am indeed happy to see the enthusiasm and continued commitment of all the staff and undergraduate students of the Department of Finance in their endeavour to engage in research and come up with new initiatives which will lead towards the development of our country. I congratulate all the undergraduates who are presenting their valuable research ideas and findings. I wish the Fifth Student Conference in Finance a great success!

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

## Message from the Dean

### Faculty of Management Studies and Commerce



It brings me a great pleasure to write a message for the Undergraduate Research Symposium of the Department of Finance, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura. First and foremost, I would like to applaud the Department for organizing this event with the intention of giving a forum for students to present and discuss their research findings in order to enhance the research skills of our graduates.

This exercise will unquestionably train students to recognize problems, collect relevant data, and analyze the data scientifically to generate more unique and creative solutions to many of the problems and challenges faced by businesses and society. The research component of our Degree Programmes is a unique feature that provides students with a competitive advantage to compete with other professionals in the job market, and it will undoubtedly assist them in investigating the environment more rationally so that they can effectively contribute to the sustainable development of organizations and the country as a whole.

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

## Message from the Head of the Department

The success of the business is not about shareholder value alone, firms are demanded to show their positive societal impact today. These evolving challenges are the directions for higher education in business. As the pioneers in finance education in Sri Lanka, we need to develop future leaders with socially conscious mindsets. Hence, we need to make positive changes in the community through teaching, research, and outreach.

Consistent with this mission, we train our undergraduates to be adaptive and explore possibilities of creating knowledge for a positive impact on society. It is in this process that the student conference has been organized and the stage is made for young researchers. It is a pleasure to be with you today, and I congratulate the organizing team, young researchers, and stakeholders of this conference.

**Prof. A G C Gunathilaka**
Head
Department of Finance
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura
Sri Lanka

## Message from the Conference Chairperson/ Coordinator

I consider it a responsibility as well as a privilege to chair/ coordinate the Student Conference in Finance (SCF), as the coordinator of the research study/ project of the Department of Finance. SCF is organized by the department for the fifth consecutive year.

The Department of Finance is completing twenty years this year. From the time it was established the department has been using undergraduate research as a tool for building knowledge and facilitating learning. This annual event of the department 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.

A large amount of research is being done at universities at different levels, which hardly find their way to the hands of the policy makers, instead they are hidden inside academic journals kept in libraries. This conference would help the world outside university be conscious about the new knowledge created in universities and utilize them in building a better future. Twenty students who have conducted research studies in 2021 are presenting their findings at this year's SCF.

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 of University of Sri Jayewardenepura for whom I owe a great debt of gratitude. My sincere thanks are also extended to, the keynote Speaker of the fifth SCF, Professor A G C Gunathilaka 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
Sri Lanka

# Contents

# An Empirical Study on the Performance of Equity IPOs in the Colombo Bourse

T.F.O.V. Perera, Y.K. Weerakoon Banda
*pereravindula@gmail.com, weerakon@sjp.ac.lk*

**Keywords**: Initial Public Offerings, IPO Underpricing, IPO Underperformance

## Introduction

An Initial Public Offering (IPO) refers to the phenomenon where a Business, for the first time, issues its shares to the general public, thereby raising funds from public investors. The study undertaken focuses on 50 Equity IPOs (offer for subscription and offer for sale) in the Colombo Stock Exchange from January 2011 to February 2022. The time horizon of the study started and ended with noteworthy hot IPO markets and had a fairly extended cold IPO market in between. It was also a period where regulators took steps to increase the transparency with respect to IPOs. Among such measures was the CSE, making mandatory, the disclosure of the basis of the Offer Price of fresh offerings as an Annexure in the prospectus in 2015, making it possible for the subscribers to understand the fair value of the share via the lessening of the information asymmetry between the issuer and the subscribers.

IPO underpricing refers to the first day upside an IPO investor enjoys, whereby it's posited that the share is underpriced (in the event a first-day upside exists). Post-IPO underperformance on the other hand refers to the anomaly of abnormal long-run or medium-run negative returns of the IPO share.

This study is the first of its kind when it comes to the analysis of IPOs which took place in 2021 in Sri Lanka, and also the first which deals with gauging the impact of the disclosure of the basis of offer price determination on the first day upside. It also uses unique blend of independent variables in testing for the determination of the first day upside of IPOs.

## Literature review

Ibbotson (1975) studied the newly issued common stocks in the 1960s (in the US) and found that the average initial performance is positive 11.4%. The phenomenon of initial returns was not limited to developed western exchanges, but it was prevalent in emerging markets in Asia as well, in varying degrees. When it comes to Sri Lanka, Samarakoon (2010) found that IPOs in Sri Lanka were underpriced by 34%. He carried out his study on 105 IPOs listed in the CSE from 1987 to 2008. Samarakoon and Perera (2018) carried out a study with an added impetus on corporate governance, whereby 44 fixed priced IPOs from 2003 to 2015 were underpriced by an average of 30%.

Theories such as the winner's curse (compensating the uninformed investor for their fund misallocation), ex ante uncertainty (higher the firm risk, higher the expected underpricing), signaling theory (intentional underpricing of the share to benefit from subsequent Seasoned Offerings, Allen and Faulhaber (1989)) and lawsuit avoidance (underpricing in order to reduce the risk of subsequent litigation) theories were put forth to explain the IPO underpricing phenomena.

Ritter (1991) brought forth the long-run IPO underperformance phenomenon as the third IPO-related anomaly upon the analysis of returns of 1,526 IPOs that were listed from 1975 to 1984. He observed that the IPO firms underperformed (34.47%) in comparison to a set of comparable firms (61.86%), at the third anniversary after going public.

The earnings management, divergence of opinion and fads hypotheses were postulated in order to explain the long-run IPO underperformance phenomenon.

## Research Objectives

To understand the nature of the IPO market trends during the study period, especially during 2021
To understand the nature of the IPO underpricing (first-day upside) phenomenon and the nature of the short and medium-term IPO performance of equity IPOs in the CSE in the study period
To identify the nature of the relationship between Offer Price, Size of the Issue, Listing Delay, AWPLR, Market Turnover, first day oversubscription, Return on Equity, disclosure of the basis of determination, and the first day upside
To identify whether the availability of the base of determination of the offer price to the public, had a bearing on the first day upside and to analyze the voluntary underpricing phenomenon

## Research Questions

- What were the noteworthy IPO market trends in the study period, especially during 2021?
- Were the IPOs under study underpriced, and if so, to what extent? [in other words, “Was there a first day upside?”]
- What is the extent of the short and medium-term IPO underperformance for the first 7 days, 1 month, 3 months and 1 year? What are the returns gained by investors during the said periods?
- What is the relationship between Offer Price, Size of the Issue, Listing Delay, AWPLR, Market Turnover, first day oversubscription, Return on Equity, disclosure of the basis of determination and the first day upside, and its significance?
- Is there a significant difference between the mean values of first day upsides of the firms which disclosed the basis of offer and firms that didn’t? To what degree has the market captured the intrinsic value at the first day close?

## Research Methodology

A qualitative approach was employed to gauge the first objective. For the second research question, Market Adjusted Abnormal Returns (MAAR) and a two-sample t-test was used to determine whether the Abnormal IPO underpricing existed. The holding period return methodology was used in ascertaining the IPO underperformance in the short and medium run. The ASPI was used as the benchmark market portfolio. An OLS regression (after testing for the CLRM assumptions) was carried out to understand the impact of the selected variables on the first day upside. A two-sample t-test along with some other tailormade equations were used to answer the fifth research question.

Most data were sourced via the prospectuses which were available in the CSE website. Share price and ASPI related data were also sourced from the CSE data library and investing.com.

## Key Findings and Conclusions

It was found that 2021 was an exceptional year in terms of the volume of Issues and money left on the table as well as IPO underpricing. Tax concessions targeted towards new listing companies, the digitization of the IPO subscription process, the uptick in the CSE due to the low interest rate environment were identified as related factors driving this phenomenon.

Presence of IPO underpricing was found. First day MAAR was found to be 26.32% and through the two-sample t-test, the abnormality was ascertained to be significant. This is consistent with Samarakoon’s (2010) findings which also concluded that there was IPO underpricing in the Sri Lankan market. High levels of underpricing were attributable to 2021.

The IPO performance had a declining trend over the time-horizons considered. The seven-day, one month, three month and one year market-adjusted average holding period returns were 25.2%, 20.0%, 1.8% and -10.8%, respectively, making it undesirable for an investor to hold on to the IPO share for a long-time span. These findings are in line with prevalent literature on the topic.

Thereby, could gain abnormal returns via investing in IPOs, however, the longer the IPO portfolio is held on to, the more diminished will be the returns.

The regression analysis found the issue size and the offer price to be significant and negatively associated, and the ROE to be significant and positively associated with the initial returns. This falls in line with the ex-ante uncertainty principle, as well as the notion that well performing firms deliver greater first day returns. The coefficient directions of the other insignificant variables were as expected.

The two-sample t-test carried out suggested that there were no special effects impact in the disclosure of the basis for the offer price on initial returns. Further, the mean value of *disclosed* firms' initial returns was higher than the *undisclosed* firms, which contradicts the information asymmetry theory. It was further found that on average, the voluntary underpricing by the issuer and investment bank has allowed the subscriber to gain an upside of 21.9% on average and that the investment banks were not 'way off' in their calculation of the IPO firm's intrinsic value, as IPOs on average, overperforms in comparison to the intrinsic value set by the investment banks, by around 11%.

## References

Ritter, J. R. (1991). The Long-Run Performance of Initial Public Offerings. *The Journal of Finance,* 46(1), 3–27. https://doi.org/10.2307/2328687

Ibbotson, R. G. (1975). Price performance of common stock new issues. *Journal of financial economics*, 2(3), 235-272.

Samarakoon, L. P. (2010). The short-run underpricing of initial public offerings in the Sri Lankan stock market. *Journal of Multinational Financial Management*, 20(4-5), 197-213.

Samarakoon, S. M. R. K., & Perera, K. L. W. (2018). Short-Run Price Performance of IPOS and Corporate Governance Practices Evidence from A Frontier Market.

Allen, F., & Faulhaber, G. R. (1989). Signaling by underpricing in the IPO market. *Journal of financial Economics*, 23(2), 303-323

# Gender Diversity of Corporate Board on Financial Performance; Evidence from Sri Lanka

E.A.S. Kularathna, P.A.N.S. Anuradha, I.G.S.M. Illubethanne
*sewwandilanka1998@gmail.com, anuradha@sjp.ac.lk, samyaigsm@sjp.ac.lk*

**Keywords:** Gender Diversity, Financial Performance, Blau Index, Corporate Governance, Board of Directors

## Introduction

The board of directors (BODs) are one of the important mechanisms in a company and holds the responsibility for directing and leading a firm, as well as safeguarding the interest of the company's shareholders. The increment of board gender diversity has been enacted mainly because of lately enacted guidelines and mandatory laws with the aim of upgrading the presence of women on the boards. The main aim of these regulatory interventions is to eradicate the labour and social grievances that women have traditionally experienced. Therefore, it is necessary to enhance the potential advantage of gender diversity on corporate boards from both ethical and economic points of view. Further, the female labour force has been increasing in both developed and developing countries over the last decade. With the increasing trend of the female entrance to higher education, women have joined to represent now top management and director board. Therefore, it is important to investigate the impact of board gender diversity on a firm's financial performance as the effectiveness of BOD really affects the firm's performance. (Iren, 2016). In the empirical world, there is still no consensus regarding the association between gender diversity and a firm's financial performance. Most of the prior empirical studies have focused predominantly on developed countries (Brahma et.al.,2020). When it comes to the context of Sri Lanka, gender diversity and firm's financial performance does not investigate yet through many studies (Dedunu & Anuradha,2020) The proposed study seeks to address this gap by evaluating the impact of gender diversity on firm's financial performance of listed companies in Sri Lanka.

## Literature Review

Corporate governance has largely been affected by the agency theory (Fama & Jensen,1983), through institutional (Shleifer & Vishny,1997), stakeholder perspectives (Pfeffer, (1972), and Hillman & Dalziel,2003) have been involved to describe various governance phenomena. The study mainly focuses on agency theory. Financial crisis, scandals, and the high failure rate of companies have increased concerns about improving board effectiveness (Reguera-Alvarado et.al.,2015). Board diversity considers as a mechanism to increase the effectiveness of boards. According to the literature, women are becoming an integral part of the workforce that brings potential benefits to the company, and gender diversity is also affecting the composition of the company's BODs. Ethical and economic perspectives are two important considerations when discussing gender composition at the BODs. From an ethical point of view, it is argued that it is unethical to exclude female directors from the top of the business world on the basis of gender alone. Many previous studies showed a positive relationship between gender diversity and firm's financial performance. (Carter et.al.,2003.) These studies suggested that diverse directors can enhance firm's performance and firm value by adding unique abilities and talents to the corporate boards. Further, it demonstrates that diverse board may help to enhance effectiveness of problem-solving abilities. Diverse boards provide strategic resources because of various skills and cultural backgrounds which they employed. Some studies showed that boards with greater female directors have effective attendance rates (Adams & Ferreira,2004). Many studies suggested that companies add more females to the board for maintaining better relationship with their female clients and customers. Gender diversity helps to upgrade innovations by adding new perspectives and backgrounds to the boards. (Torchia et.al.,2011). However, some studies showed negative relationship between gender diversity and firm's performance (Sabri Boubaker et.al.,2014) whereas some showed no relationship (Chapple et.al.,2014). Because of these contradictory results, it is very important to examine the relationship between gender diversity and firm's financial performance in the context of Sri Lanka.

## Methodology

The research followed a quantitative approach. The sample consisted of 246 listed companies in Colombo Stock Exchange (CSE) between the periods 2016 to 2020. Samples were chosen as per the convenient sampling method especially considering the availability of past data for more than five (5) years. The study employed secondary data which has been calculated from the CSE database using annual reports of each company. In addition, data on the board room composition was also collected from the corporate governance reports, chairman's reports, CEO and managing director's massages and relevant other disclosures included in the annual reports. The research study used time series empirical data from a balanced panel. The data were analyzed with STATA software. As suggested by the Hausman Test, fixed effect OLS regression analysis and 2SLS (Two-stage- least square) method were employed in order to obtain quantitative measures of descriptive statistics, regression and correlation. Presence of women on board (PWOMEN) which is a dummy variable, the percentage of women on board (AWOMEN), and blue index (BLAUGENDER) are used as proxies for gender diversity and are the independent variables (Isidro & Ferreira,2009). Instrumental variables are board size (BSIZE), percentage of independent directors on the board (BINDP), firm size (FSIZE), and leverage (LEV) of the firm. Return on Assets (ROA) and Return on Equity (ROE) are the dependent variables. Prior studies widely used ROE (Isidro & Sobral,2014) and ROA (Shradere. et.al.,2015) to measure a firm's financial performance.

## Findings

**Table 1: Regression and Two - Stage Least Square Results**

| | Dependent Variable - ROE | | | | | |
|---|---|---|---|---|---|---|
| | Model 01 | | Model 02 | | Model 03 | |
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| PWOMEN | 0.04 | 0.05** | | | | |
| AWOMEN | | | 0.01 | .168** | | |
| BLAUGEN. | | | | | 0.07 | 0.110** |
| BSIZE | 0.06 | -.038 | 0.06 | -0.029 | .06 | -.027 |
| BINDP | -0.08 | -0.039 | -0.08 | -.039 | -0.08 | -0.038 |
| FSIZE | 0.01 * | 0.027** | 0.01* | 0.027** | 0 .01 * | 0.027** |
| LEV | -0.50 ** | | -0.50 ** | | -0.50** | |
| Constant | -0.13 | -.438 ** | -0.13 | -0.46** | -0.14 | -0.464 |

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

OLS results showed the presence of women on the board had a positive relationship with ROE. And also, OLS analysis results suggested that percentage of women on the board and Blau index had a positive relationship with ROE, but they are not significant at level of 5%. But the results revealed that significant positive correlation between presence of women on the board and ROA. Further, results suggested that ROA and Blau index of gender diversity have a significant positive correlation at 10% level of significance. Further, two-stage least square analysis and the results of 2SLS revealed that presence of women on the board and ROE have a significant positive relationship. Percentage of women on the board and ROE had a significant positive correlation at the level of 5% significance. Overall, results conclude that there is a significant positive relationship between gender diversity of corporate boards and firms' financial performance in Sri Lanka.

The results in line with the previous studies which show a significant positive relationship between gender diversity and firms' financial performance (Carter et.al.,2003). As Carter et.al.,2003, gender-diverse boards help to improve the corporate governance structure of the firm, and diverse boards increased the effectiveness of the process of decision making ultimately building a good corporate image within the competitive industry (Luckerath-Rovers,2013). The findings are contradicted with Adams & Ferreira, (2009)

## Conclusion

It is concluded that gender diversity on corporate boards has a significant positive correlation with financial performance. Therefore, upgrading female representation on the corporate board will help to achieve long-term sustainable goals within the company, responsible governance, and competitiveness in the global marketplace. Further, if a board is serious about gender diversity, it should be reflected by their corporate governance structures, competition, nomination procedures, evaluation processes, recruitment procedures, board dynamics, and succession planning. Further studies require cross countries to consider other aspects of gender diversity such as education level, age, experience, and culture to reach a general conclusion in the field.

## References


Adams, R.B. and Ferreira, D., 2009. Women in the boardroom and their impact on governance and performance. *Journal of financial economics*, *94*(2), pp.291-309.

Brahma, S., Nwafor, C. and Boateng, A., 2021. Board gender diversity and firm performance: The UK evidence. *International Journal of Finance & Economics*, *26*(4), pp.5704-5719.

Carter, D.A., Simkins, B.J. and Simpson, W.G., 2003. Corporate governance, board diversity, and firm value. *Financial review*, *38*(1), pp.33-53.

Chapple, L. and Humphrey, J.E., 2014. Does board gender diversity have a financial impact? Evidence using stock portfolio performance. *Journal of business ethics*, *122*(4), pp.709-723.

Dedunu, H.H. and Anuradha, P.A.N.S., 2020. Impact of board diversity on firm performance: Evidence from listed material companies in Sri Lanka.

Fama, E.F. and Jensen, M.C., 1983. Separation of ownership and control. *The journal of law and Economics*, *26*(2), pp.301-325.

Iren, P., 2016. Gender diversity of boardrooms and firm financial performance. *Risk Governance & Control: Financial Markets & Institutions*, *6*(3).

Isidro, H. and Sobral, M., 2015. The effects of women on corporate boards on firm value, financial performance, and ethical and social compliance. *Journal of Business Ethics*, *132*(1), pp.1-19.

Julizaerma, M.K. and Sori, Z.M., 2012. Gender diversity in the boardroom and firm performance of Malaysian public listed companies. *Procedia-Social and Behavioral Sciences*, *65*, pp.1077-1085.

Lückerath-Rovers, M., 2013. Women on boards and firm performance. *Journal of Management & Governance*, *17*(2), pp.491-509.

Pfeffer, J., 1972. Size and composition of corporate boards of directors: The organization and its environment. *Administrative science quarterly*, pp.218-228.

Sabri, A.S.M.A., Mohamed, A.S. and Sahari, S., 2020. The Effects of Gender Diversity in The Boardroom on Firm Performance among top 50 Listed Companies in Malaysia.

Shleifer, A. and Vishny, R.W., 1997. A survey of corporate governance. *The journal of finance*, *52*(2), pp.737-783.

# Assessing the Dynamic Linkage between Exchange Rates and Stock Prices: Evidence from SAARC Countries

A.P. Tharuka Nayanamini, R.P.C.R. Rajapakse
*nayanatharu@gmail.com, champa@sjp.ac.lk*

**Keywords:** Exchange Rate, Stock Price, Cointegration, VAR, Granger Cause, Machine Learning

## Introduction

Exchange rate and stock price are two of the main key performance indicators of an economy. In avant-garde timeline, the activities in financial markets play salient role in the economy and vice versa which put in a nutshell of, thriving stock market attracts capital from international investors, raising demand for a country's currency. As a result, changes in stock values are linked to exchange rate changes. This relationship upholds for hedging and pricing purposes, currency portfolio optimization, and allocation decisions. Thereby, this study will examine the relationship between exchange rate and the stock market price.

## Literature

Both stock price and exchange rate are decided by based on numerous theories. i.e., The stock price variations can be explained by models CAPM, APT, Efficient market theory and Behavioral Financial theories while the exchange rate are decided upon various macro and micro economic factors. i.e., purchasing power parity. Yet, it is to say that there is still no consensus on the relationship between the stock market and the exchange rate. However, alternative explanations can be made using flow-oriented models and stock-oriented models. According to the flow-oriented model, there is a causal relationship between the exchange rate and stock prices. In other words, stock prices are influenced by exchange rate fluctuations. Theory explains that Exporters will be badly impacted if the exchange rate rises. Their goods and services will be more expensive on the international market as their currency appreciates. Their exports will suffer as a result, as purchasers on the international market will perceive them as too pricey. As a result, they will lose international competitiveness ultimately facing to stock price decline confirming negative relationship. Stock oriented model i.e., Portfolio Balance theory, explains when local currency depreciates and local enterprises become more competitive, this leads to an increase in their exports, there is a positive association between stock prices and exchange rates. Stock prices will eventually rise.

In terms of empirical studies, based on the micro and macro specifications have come up with mixed results. it has been found that a significant positive relationship Mourad Mroua and Lotfi Trabelsi (2019) exists between share prices and exchange rates while on the other hand a strong negative relationship (Dahir et al., 2018) exists between stock prices and exchange rates, it has been shown that, as predicted by economic theory while some other found no relation (Tian and Ma, 2010; Zhao, 2010) between two. In all, at the macro and micro levels, there is neither a theoretical nor an empirical consensus on the relationship between exchange rates and stock prices. Specifically, the causal direction between the two financial price variables is not resolved. Departing to some degree from the previous literature which has attempted to test each of the above reviewed theories in isolation and agreeing with contemporary move, Henceforth, the research gap has prevailed from lesser number of studies conducted on the South Asian countries and research has made little to no attempt in investigating the predicting power of the stock price using the exchange rate, leads to this scrutiny.

## Main Objective

In order to address the identified research gap, main objective of this study is to investigate the relationship between exchange rate and stock price in SAARC countries.

## Sub Objectives

Test the short run, long run relationship and causality between FOREX and stock prices; To investigate the applicability of the results in Sri Lankan context and to make viable policy recommendations.

## Methodology

For the analysis, the sample data, four South Asian country's (Sri Lanka, India, Pakistan and Bangladesh) weekly foreign exchange rates (LKR, INR, PKR, BDT) and main stock index (ASPI, SENSEX, KSE, DSE) prices are considered on the time period 2014-2021 of 7 years. The analysis has been done with descriptive statistics for both variables before being submitted to the unit root test i.e., ADF test ensure stationarity. The Johannsen cointegration test is used to determine the long-term relationship between the variables. Further, the model development was done using VAR model and the essential diagnostics is conducted to determine the model stability. The impulse response and variable decomposition tests how the shock of one variable affect another. Granger Causality test is used to determine the causal relationship between variables. Cconcluding the analysis using machine learning model is developed on identifying the predictability power of exchange rate on stock price This has been built around the RNN model (number of hidden layer units and number of samples in sequence). The optimal model is applied to all selected stocks and the actual stock trades that are reproduced with 70% -90% variance, to ensure the accuracy of different parameter values.

## Findings and Conclusions

Considering the empirical analysis, first the univariate analysis has been done to identify the individual statistical characteristics of the variables. Thereby, with regards to the exchange rates arbitrary comparison can be done as all the values are representing their exchange rate for a dollar. The higher volatility can be seen in LKR as the standard deviation being the higher compared to BDT which shows the lowest standard deviation. As these currencies are based on the dollars this implies that Sri Lanka has the highest local currency depreciation compared to the other South Asian countries. The Pearson Correlation Analysis shows positive correlation between all the variable pairs yet, except India, all the countries showed weak positive correlation between exchange rate and the stock index price.

Antecedent to the descriptive analysis, Stationarity has been checked using ADF test and all the variables are stationary at the first difference. This implies that all the data series in four countries are integrated for order one i.e. I (1) which shows the need of applying cointegration test to check the long-term relationship. On performing Johannsen cointegration test, it reveals that there's no long run equilibrium relationship between exchange rate and stock prices in all four countries. According to the VAR estimations, in Sri Lanka, India and Pakistan, lags of both variables can be used to estimate the endogenous variable i.e., exchange rate or stock price. However, Bangladesh shows no relationship between the variables. Which implies that to predict the lags of the same variable will be the exogenous variables. This has also proven from Granger Causality test statistics.

**Table 1 Analysis summary**

| Country | Variables | Correlation | Cointegration | Granger Causality |
|---|---|---|---|---|
| Sri Lanka | LKR | .1404 | 0.4427 | .0002 |
| | ASPI | | 0.6573 | .0001 |
| India | INR | .4806 | 0.5156 | .0500 |
| | SENSEX | | 0.4286 | .0000 |
| Pakistan | PKR | .2565 | 0.4196 | .0006 |
| | KSE | | 0.3466 | .3535 |
| Bangladesh | BDT | .7339 | 0.7439 | .0747 |
| | DSE | | 0.6696 | .8380 |

Using the VAR estimates, on conducting Impulse responses and the Variance decomposition, is shows that the shocks happen in one variable is creating the positive or negative impact on another, yet the variable will again bounce back to the previous state within the specific period of time. The level of impact that cause to the other variable differs from country to country. However, the impact made from exchange rate on the Stock price index is much higher compared to vice versa. The Granger causality test results depicts that in Sri Lanka and India exchange rate and price index are granger causes each other while Pakistan shows unidirectional relationship where only PKR granger cause KSE not vice versa. Bangladesh do not show grange- cause relationship prove there's no interaction with each other.


**Figure 1 Machine learning on stock price prediction**

Machine learning model which was developed to predict the stock price using the exchange rate, the five samples in the sequence are used to evaluate alternative hidden layer configurations. Figure 1 shows that according to the machine learning prediction, the predicted stock price will vary in the steady price range which depicted in the blue line. However, considering the data input exchange rate is expected to rise. It is concluded that at 70.19% accuracy, exchange rate can be used to predict the stock price. However, the result can subject to change due to the impact of other economic factors.

The finding supports the portfolio balanced theory. Hence, local enterprises could gain advantages through currency depreciation. However, at bidirectional relationship (Sri Lanka) and the correlation showing weak negative correlation implies that, depreciation of the currency rate would not be greatly reflect in the stock price, and as argued by the flow-oriented models when the domestic currency of Sri Lanka countries depreciates, cash flow and the profitability of local firms should deteriorate this will lead to fall in the stock prices. Hence, floating exchange rate depreciation should be handled with care. Further, the shock of a variable will be reflected in the other variable after a certain period of time (lag) which may or may not improve the predictive power of the model. Therefore, it is recommended that policy makers should need to pay proper attention on the "reaction" gap of policy changes in the economy concluding that policy makers shouldn't use exchange rate alone to make policies. However, with well-developed machine learning model, moving forward from the initial attempt of this study, could be used as a good indicator to understand the how the stock price would behave in the future. Further research is encouraged to consider multiple macroeconomic factors and machine learning model can be further developed using more data and more RNN structures.

## References

Mroua, M. & Trabelsi, L., 2020. Causality and dynamic relationships between exchange rate and stock market indices in BRICS countries. Journal of Economics, Finance and Administrative Science, 25(50), pp.395–412.Z.

Iqbal, R. Ilyas, W. Shahzad, Z. Mahmood and J. Anjum, "Efficient Machine Learning Techniques for Stock Market Prediction," Zahid Iqbal et al Int. Journal of Engineering Research and Applications, vol. 3, no. 6, pp. 855-867, 2013.

# Determinants of Non-performing Loans in Sri Lanka – Evidence from Licensed Commercial Banks

B. A. Nelum Sugandini Balasuriya, D.B.P.H. Dissabandara
*balasuriyanelum@gmail.com, dissa@sjp.ac.lk*

**Keywords:** Nonperforming Loans, Microeconomic Variables, Macroeconomic Variables, Licensed Commercial Banks, Credit Risk

## Introduction

The financial sector of Sri Lanka, like most of the other developing countries is dominated by banking enterprise. It comprises 68.8 USD Billion of total assets (as at 31st Dec 2020) which is approximately 58% in the financial system and plays a major role within the economy in provision of liquidity to the entire economy and transforming the risk characteristics of assets. The soundness of banks is important, as it contributes towards maintaining confidence in the financial system, and any failure may have the potential to impact on activities of all other financial and non-financial entities, and finally the economy.

Licensed Commercial Banks are facilitating the financial intermediation process by accepting deposits from surplus units and lending to deficit units. So that, credit risk can be considered as the most significant factor to banking institutions as lending operations from core business. Credit risk or the risk of default is dependent on the quality of assets, and it is reflected through the volume of non-performing loans. (Ekanayake,2018) The International Monetary Fund (2009) considers loans that are 90 days or more past dues or no longer accruing interest as nonperforming if there's high uncertainty surrounding future payments. So that, this definition is used within Sri Lanka as well to identify NPLs.

Although banks can't eliminate NPLs when dealing with the lending process, it is important to manage the NPL level within the financial system. To maintain the NPLs at an acceptable level, it is vital to identify the determinants of these NPLs.

## Literature Review

Literature review analyzes different research conducted in different countries including Sri Lanka, India, Taiwan, Albania, Trinidad and Tobago, Barbados, African Region, Middle East, and Eurozone. So, the review considers most of the countries around the world and most of the regions. Also, literature from 1998 to 2020 has been analyzed to highlight the evaluation of the studies conducted over the determinants of NPLs and to figure out the most appropriate variables to the study.

Makri, Tsagkanos & Bellas (2014) emphasized the factors affecting Nonperforming rate of Eurozone's banking system for the period from 2000-2008 just before the beginning of the recession. So, both macro and micro variables have been concerned to investigate the factors that determine NPL on aggregate level. It is observed that there is a strong correlation between NPL and macro-economic variables including public debt, unemployment, annual percentage growth rate of GDP as well as bank specific determinants such as capital adequacy ratio, rate of NPL in the previous year and return on equity. This research has analyzed both bank specific and macro-economic variables affecting to the banking sector of Eurozone.

Ekanayaka, Azeez (2015), investigated the determinant factors of ex-post credit risk considering NPL as proxy variable in Sri Lankan commercial banking sector considering nine commercial banks from 1999 to 2012. This is the base study for this research. So, the study found out that both macro-economic and bank specific factors affect to the level of NPLs. It revealed that the level of NPL tends to increase with deterioration of bank's efficiency. Size of the bank has inverse relationship with NPLs. The loan to asset ratio and loan loss provision has been used to measure the risk appetite of banks and they indicate a positive correlation with NPLs. However, the high credit growth has reduced the level of problem loans. Hence, banks which are more aggressive in the credit market are likely to incur lower NPLs. Considering the macroeconomic variables, GDP growth and inflation recorded a significant inverse relationship while lending rate record significant positive influence. Thus, this study has been enhanced based on the literature to match with the current context of Sri Lanka and determined to analyze other factors affecting NPLs eliminating insignificant factors from this study.

Kumarasinghe (2017) has conducted research to study the macro-economic determinants of banks' loan quality in Sri Lanka by analyzing secondary data over a period of 1998 – 2014. During that period global financial crisis and subsequent recession in many developed countries have increased households and firms' defaults causing significant losses to the banks. Sri Lanka was also affected with such conditions and changes in the economic conditions have been analyzed to the level of NPLs. So that, six macro-economic determinants including have being considered in this study. GDP growth rate and Export growth were found as significant in determining the level of NPLs within Sri Lanka. But relationship with GDP and NPLs was negative and was not consistent with previous studies. This study is designed based on macro-economic variables to identify the factors affecting NPLs depending over the economic contexts prevailed within that period.

In the study Ekanayake (2018), both macro-economic and bank specific factors have been considered over a period of 10 years from 2004 to 2013. A dummy variable panel regression model has been adopted to study the war effect considering 2009 as the structural year. So, the study has examined the impact of civil war that prevailed within Sri Lanka for 30 years on the ex-post credit risk in the banking sector. The findings revealed that return on assets as a proxy for bank efficiency having a negative influence and non-interest income is positively correlated with NPLs. Both real GDP and lending rates are highly significant in both bank types. However, growth in bank branches indicates a negative correlation. Public banks don't account for higher level of NPLs compared to private banks. The study revealed that bank-specific factors have more control over NPLs. So, it is observable that we can bring out the most appropriate results by incorporating bank specific factors to macro-economic determinants.

It can be observed that there are various types of variables that have been analyzed in local and foreign research. This study has assessed the significant variables identified through the past studies and incorporated them in current Sri Lankan context. So that, through the literature review, this study has identified the determinants of NPLs to be tested through the analysis process to assess their relationship and impact over NPLs.

## Problem Statement and Research Questions

- This research is based on the following problem statement.
- What is the relationship & the impact of Micro & Macro Economic determinants on non-performing loans in relation to Licensed Commercial Banks of Sri Lanka?
- Based on the problem statement, the study is mainly determined to solve the following issues.
- What is the relationship and impact of Micro & Macro Economic determinants and non-performing loans in Licensed Commercial Banks of Sri Lanka?
- What is the impact of Micro & Macro Economic determinants on Non- Performing Loans in Licensed Commercial Banks of Sri Lanka?

## Objectives

To find out the relationship between Micro & Macro Economic determinants and non-performing loans in Sri Lankan banking sector.

To find out the impact of Micro & Macro Economic determinants on non-Performing loans of Sri Lankan banking sector.

## Research Methodology

The NPL ratio is considered as the dependent variable and independent variables include microeconomic factors (Size of the Bank, Loan growth, Return on assets - ROA, Net Interest Margin and Capital adequacy ratio) and macro-economic factors (Interest rate, Export's growth, Gross domestic production, Inflation growth and Unemployment)

The panel data econometric approach is used considering over the period 2011 to 2020. (10 years Convenience sampling method has been incorporated to select the sample. When considering the Licensed Commercial Banks, Foreign Banks have been excluded as well as, 3 locally incorporated banks also have been excluded from the study (DFCC Bank PLC, Amana Bank PLC, Cargills Bank Ltd) due to structural changes within the period considered. So that, 2 State banks and 8 Private banks have been considered to gather data for bank specific determinants. Other macro-economic data have been gathered from Central Bank publications and other resources. Therefore, in this study secondary sources have been considered in the study.

The determinants of NPLs have been examined through descriptive statistics. Such as mean, minimum, maximum value and standard deviation. Apart from that, correlation, regression analysis had been carried out to study the relationship and impact between dependent variable and independent variables by using EViews 8 software.

Following three models have been tested through this study to assess the impact of microeconomic variables, macro-economic variables and overall impact over NPLs.

**Model 1 -** $NPL_{it} = \beta_0 + \beta_1 SZ_{it} + \beta_2 GRL_{it} + \beta_3 ROA_{it} + \beta_4 NIM_{it} + \beta_5 NIM_{it + \varepsilon\, it}$

**Model 2 -** $NPL_{it} = \beta_0 + \beta_1 INTR_t + \beta_2 EXPR_t + \beta_3 GDP_t + \beta_4 INF_t + \beta_5 UNEMP_{t + \varepsilon\, it}$

**Model 3 -** $NPL_{it} = \beta_0 + \beta_1 SZ_{it} + \beta_2 GRL_{it} + \beta_3 ROA_{it} + \beta_4 NIM_{it} + \beta_5 NIM_{it +} \beta_6 INTR_t + \beta_7 EXPR_t + \beta_8 GDP_t + \beta_9 INF_t + \beta_{10} UNEMP_{t + \varepsilon\, it}$

## Findings and Conclusions

Through the correlation analysis, the relationship between NPLs and each variable has been analyzed and through the regression analysis the significant variables that have an impact over NPLs being identified. This research has identified Bank size and return on assets under micro economic variables and Export's growth and Gross domestic production under macro-economic variables are the significant determinants of NPLs in licensed commercial banks of Sri Lanka and other variables such as loan growth, net interest margin, capital adequacy ratio interest rate, inflation growth and unemployment were not significant. Hence, Licensed Commercial banks can pay more attention over Bank size, return on assets, Export's growth and GDP and maintain the NPL ratio at an acceptable level to ensure the stability of banking system.

## References

A.Azeez, E. Ekanayaka, 2015. Determinants of Non-performing Loans in Licensed Commercial Banks: Evidence from Sri Lanka. *Asian Economic and Financial Review.*

Ekanayake, N., 2018. The Impact of Bank-Specific and Macroeconomic Factors on Non-performing Loans in Sri Lankan Commercial Banks. *Journal of Modern Accounting and Auditing.*

P. J.Kumarasinghe., 2017. Determinants of Non Performing Loans: Evidence from Sri Lanka. *International Journal of Management Excellence,* Volume 9.

N.Skinner, A. Wood., 2018. Determinants of non-performing loans: evidence from commercial banks in Barbados. *The Business and Management Review.*

V. Makri, A. Tsagkanos. A. Bellas., 2014. Determinants of Non-Performing Loans: The Case of Eurozone. *PANOECONOMICUS.*

# Impact of Board Diversity on Firm Value: Evidence from Listed Companies in Sri Lanka

Dilujani Fernando, K.L.W. Perera
*dilujani.fdo@gmail.com, wasantha.perera@sjp.ac.lk*

**Keywords:** Board Diversity, Board Size, Percentage of Independent Directors, Firm Value

## Introduction

As a component of corporate governance, the board of directors is responsible for appraising and monitoring the company's worth, but board competency is also an important consideration (King & Zeithaml,2001). Organizational performance may be improved by including more people from a variety of backgrounds on the board of directors (Siciliano,1996). Board diversity is a metric that may be measured in a variety of ways. Gender diversity is often defined as the presence of at least one female director on a board of directors (Abbott et al., 2012). The educational background of members of the Board of Commissioners is one aspect of diversity. They have an educational background and are certified in accounting; therefore, their positions may affect corporate performance and value. The better a company does, the more important it becomes to have independent members on its board of directors. The more members on the board, the better they can oversee and regulate the company's performance for the benefit of the shareholders. Thus, according to agency theory, a bigger board size improves a company's performance by allowing a broader group of individuals to supervise it (Kalsie,2016).

As a result of this study, it will aid industries in making future choices and companies will be able to increase shareholder wealth by better understanding the link between independent factors and company value. It is beneficial to keep the company's skilled and valued directors by examining their academic credentials.

## Literature Review

Over the previous two decades, board diversity has been an increasingly important component of strong corporate governance. As a result of that, numerous studies conducted to examine the relationship between board diversity and firm value. A diverse board structure is desired by many firms; however, the link between board diversity and company success is yet unclear (Hassan & Marimuthu, 2018).

While previous studies have shown conflicting findings, there is currently no agreement on the link between having female board members and business success. Women are seen as having less expertise and knowledge to offer a business than their male counterparts, Al-Mamun et al. (2013) believe that gender diversity has little impact on the value of a corporation. Furthermore, Kusuma (2018) indicates that gender diversity does not have a major impact on company value in Indonesia because of the country's low degree of gender diversity. A previous study by Cheng, Chan, and Leung (2010) shows that the presence of an educated CEO (one with a bachelor's degree or more) will lead to an increase in ROA, EPS, and Market to Book Value. Independent directors, according to Zinkin (2010), should focus on several areas to help the firm develop an effective strategy. According to the research, there was either a positive, negative, or no correlation between board independence and business success. There seems to be no correlation between business success and the percentage of outside directors identified by Hermalin & Weisbach (1991). According to the opposing thinking, greater board sizes are more effective and improve the success of a corporation. Coles et al. (2008) found that bigger boards provide better value to companies that need more assistance.

Few prior studies have been conducted to investigate the influence of board diversity on firm value. In the Sri Lankan context, research on corporate governance on firm value in a specific sector has been conducted. In Sri Lanka, many researchers focus on finding the impact of board diversity on firm performance. It relies heavily on profit projections. As a result, this study focused to examine the impact of board diversity on firm value in listed companies in Sri Lanka. Because the market's performance determines the firm's worth, this study will contribute to closing the gap in the literature. Therefore, this study attempts to fill this persistent knowledge gap by investigating the Sri Lankan listed companies' board diversity and firm value using Tobin's Q index.

## Problem Statement and Research Questions

On this important subject, many have conducted studies outside of Sri Lanka. Furthermore, in the Sri Lankan context, many studies examine the impact of board diversity on firm performance. In the Sri Lankan context, it is rare to find studies that investigate the impact of board diversity on firm value in the Colombo Stock Exchange. However, the purpose of this research is to reveal the truth about how board diversity affects the firm's worth. Because the market's performance determines the firm's worth.

This study will contribute to closing the gap in the literature. Therefore, this study attempts to fill this persistent research gap by investigating the board diversity and firm value using Tobin's Q index in Sri Lanka. The researcher has identified the need to examine the impact of board diversity on firm value in Sri Lanka. The main research question of this study and the sub-research questions are outlined below,

- What is the impact of gender diversity on the firm value of Listed companies in Sri Lanka?
- What is the impact of educational qualification on the firm value of the Listed company in Sri Lanka?
- What is the Impact of the percentage of independent directors on the Firm value of Listed companies in Sri Lanka?
- What is the impact of Board size on the Firm value of Listed companies in Sri Lanka?
- What is the impact of Leverage on the Firm value of Listed companies in Sri Lanka?
- What is the impact of Firm Size on the Firm value of Listed companies in Sri Lanka?

## Objectives

The main objective of the study is,

- To examine the impact of board diversity on the firm value of Listed companies in Sri Lanka.
- The sub-objectives are outlined below,
- To Investigate the impact of gender diversity on the firm value of Listed companies in Sri Lanka.
- To Investigate the impact of educational qualification on the firm value of Listed companies in Sri Lanka.
- To Investigate the Percentage of independent directors on Firm value of Listed companies in Sri Lanka.
- To Investigate the Board size on Firm value of Listed companies in Sri Lanka.
- To Investigate the Leverage on Firm value of Listed companies in Sri Lanka.
- To Investigate the Firm Size on Firm value of Listed companies in Sri Lanka.

## Research Methodology

The researcher is using the study to test existing theories about board diversity and firm value. So, the researcher has followed the deductive approach in outlining the study and employs a quantitative research technique as its research method. The study used the CSE listed companies as the population of the study. The study used the stratified sampling technique as the sampling method of the study. Using that technique author randomly selected 50 companies from five sectors namely, materials, retailing, food, beverage and tobacco, consumer services, and consumer durables and apparel for the study and collected secondary data from the annual reports that covers five years from 2017 to 2021.

Board diversity is considered as an independent variable and operationalized using an equilibrium variable model, including gender diversity measured using Blau's index as well as the presence of women directors as a dummy variable, educational qualifications as a dummy variable and measured using Blau's index, and percentage of independent directors on the board. Firm value is reflected as a dependent variable measured using Tobin's Q. Other variables are reflected as board size, leverage, and firm size. The data analysis included the descriptive statistics, correlation, binary logistic regression model, and multiple regression model and was analyzed by using Statistical Package for Social Science (SPSS) 26.0 version.

## Findings and Conclusion

According to the study findings percentage of independent directors and board, size has a significant impact on the firm value of the listed companies in Sri Lanka. It was found that independent board members had a beneficial influence on company performance by employing knyazeva et al. (2013) as a tool to control the problem of endogeneity. While independent board members have a beneficial influence on company performance, the benefits of other diversity traits are less clear. Board size has a detrimental effect on business value if it exceeds seven or eight, according to Jensen (1993). An eight-director structure has been proposed by Lipton and Lorsch (1992). Empirical studies often show a detrimental influence on corporate boards in publicly traded businesses because of the higher size of these boards.

As per the results of the binary logistic regression model, the value of the Odds ratio is greater than 1 indicating that there is essentially a positive relationship, and this value is going to be associated with a regression coefficient that is also positive. Hence, the percentage of independent directors and board size have a significant positive impact on the target group that is Tobin's Q value greater than 1, theoretically, it indicates that a company is overvalued.

Mainly the organizations can use the findings of the study in modeling the strategies with a focus on the future growth of the organizations. Similar organizations can use the findings of the study to identify the importance and impact of board diversity on the firm value of the listed companies. The main limitation of the study is select main three independent variables of the study to measure board diversity. It is not enough to measure the board diversity impact on the firm value of the listed companies in Sri Lanka. The vast majority of empirical studies are focused only on the impact of board diversity on the value of a company. Therefore, future studies will use corporate governance variables' impact on firm value. Board diversity and non-financial success should be examined in future research.

## References

Duncan M. Wagana, J.D.N., 2016. Corporate Governance, Board Gender Diversity, and Corporate Performance: A Critical Review of Literature. *European Scientific Journal,* 12 (7).

Marimuthu, R.H. a. M., 2016. Corporate Governance, Board diversity, and Firm Value: Examining Large Companies Using Panel Data Approach. 36(3), pp. 1737-1750.

Nguyen, H. d. F. R., 2006. Impact of Board Size and Board Diversity on Firm Value: Australian Evidence. Corporate Ownership & Control. 4(2), pp. 24-32.

Schadewitz, P.A.-M.a.H., 2019. Gender diversity and firm value: evidence from UK financial institutions. *International Journal of Accounting & Information Management*, 27(1), pp.2-26.

# Temperature and Stock Returns: A GARCH Analysis

H.A.S.D Hettiarachchi, Chandana Gunathilaka
*shamaldilshika00@gmail.com, chandana@sjp.ac.lk*

## Introduction

This research study investigated the effect of the weather (temperature) factor, on the returns and volume of the six Asian countries (Sri Lanka, Pakistan, Indonesia, Malaysia, Thailand, and Singapore). This study employed daily data of weather (temperature) and share market variables from 2010 to 2021. Temperature data was collected from the NASA website and share market-related variables were collected from relevant share market reports and websites. This study employed share market data from Colombo Stock Exchange, Karachi Stock Exchange, Thai Stock Exchange, Malaysian Stock Exchange, Indonesian Stock Exchange, and Singapore Stock Exchange. This study was related to behavioral finance, and which was explained how weather factors affect investors' decision-making process and how these are linked with the share market performance. Temperature affected human feelings, moods, emotions, and attitudes and it was directly linked with the decision-making process of humans. There was much research conducted for finance-related research topics and there was few research study conducted by researchers regarding behavioral finance-related topics this study filled this gap. In the Sri Lankan context, there was little research conducted on this research topic and this research filled this contextual gap of the Sri Lankan context. This research created new knowledge for the existing knowledge. This research study outcome can be used by institutional investors, individual investors, Margin providers, Brokerage firms, and future researchers.

## Literature review

This study examined the relationship between temperature and stock market returns and volume. The first study was done by (Saunders Jr., 1993) and this study was linked to the New York stock market and New York weather. The first study found that cloudiness in New York City is lead to lower returns on U.S. stocks. (Nazir et al., 2020) was conducted a research study by using data from the Karachi Stock Exchange and Mumbai Stock Exchange. This study found that statistically significant but inverse relationship between Karachi temperature and KSE-100 index returns for the period of 2 January 2006 to 31 December 2015 and Mumbai temperature has no impact on the BSE-100 index from 2 January 2006 to 31 December 2015. (Kathiravan et al., 2018) was conducted a research study in the Sri Lankan context and found that there is a significant correlation between weather factors and stock market returns in Sri Lanka. According to (Fayyaz et al., 2017) mood proxy variables have an impact on the South Asian capital market. Sometimes Proxy variables influence returns and sometimes Proxy variables influence volatility. (Yoon & Kang, 2009) This paper examined the relationship between stock returns and weather variables of temperature, humidity, and cloud in the Korean stock market. Findings of this study indicate weather effect was weakened as a result of that high level of market efficiency. This study is a companion to a previous study by Cao and Wei (2005). The previous study investigates the stock market and temperature anomaly in eight stock markets and found a negative relationship between stock market returns and temperature. This study expanded 19 international stock markets and found a negative relationship between stock market return and temperature. In addition, they suggest that lower temperature leads to aggression and lower temperature leads to both apathy and aggression. This study relies on temperature, mood, and behavioral changes (Cao & Wei, 2005).

## Problem Statement and Research Questions

The previous literature review highlights those empirical studies have been conducted on the influence of temperature on stock market returns and volume. This study has studied the effect of temperature on stock market returns and volume, and it is a very rare study on finance stream. What is the impact of Temperature on Stock market returns and volume in listed firms? Was the problem statement of this research study and following can be identified as research questions.

- What is the impact on stock market volume in six Asian countries?
- What is the impact on stock market returns in six Asian countries?

The main objective of this study is to determine the effect of temperature on stock market return and volume of companies listed in Sri Lanka, Pakistan, Indonesia, Malaysia, Thailand, Singapore.

## Research Methodology

We investigated whether stock market returns are related to temperature using daily weather and stock market data from six Asian countries. The data cover the periods from 2010 to 2021 and temperature data is collected from the NASA website. Daily stock market returns were calculated as percentage change of All Share Price Index: $R = (P_1 - P_0) / P_0.$ where R is the All-share price index return% and $P_1$ is the All-share price index value of the current year and $P_0$ is the All-share price index value of the previous year. Daily volume values calculated incorporating ln for volume values. Temperature values collect in Celsius ($C_0$) values and after that, these values are converted into Fahrenheit ($F_0$) values. This study used GRACH model for analysis purpose.

## Findings and Conclusions

The main objective of the study was to find the effect of temperature on the Stock market returns in six Asian countries. This study investigated the temperature effect on Stock market returns by taking a sample of around 2500 firms' CSE from 2010 to 2021. The researcher used two dependent variables to measure the namely All Share Price Index returns and volume. In each dependent variable consider with temperature values of each country. This study investigated the relationship between ASPI% and temperature and volume and temperature values. This study found that negative relationship between ASPI and temperature for six Asian countries and positive relationship between volume and temperature for Indonesia and Thailand and a negative relationship for Sri Lanka, Malaysia, Singapore, and Pakistan.

**Table 1. Temperature and returns on ASPI: Garch Results**

| | SL<br>Coeff.<br>p Value | Indonesia<br>Coeff.<br>p Value | Thailand<br>Coeff.<br>p Value | Pakistan<br>Coeff.<br>p Value | Singapore<br>Coeff.<br>p Value | Malaysia<br>Coeff.<br>p Value |
|---|---|---|---|---|---|---|
| C | 0.0115 | 0.0014 | 0.0033 | 0.002998 | 0.004469 | 0.051769 |
| | 0.0010 | 0.1610 | 0.2310 | 0.1829 | 0.4710 | 0.0000 |
| TEMP (-1) | -0.0001 | -1.03E-05 | -3.18E-05 | -2.12E-05 | -5.24E-05 | -0.0006 |
| | 0.003 | 0.366 | 0.3079 | 0.4085 | 0.4819 | 0.0000 |
| C | 1.54E-06 | 4.14E-06 | 1.24E-06 | 6.11E-06 | 1.38E-06 | 8.92E-05 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RESID (-1) ^2 | 0.1930 | 0.1281 | 0.1082 | 0.1513 | 0.0500 | 1.2740 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GARCH (-1) | 0.7994 | 0.8380 | 0.8850 | 0.7936 | 0.9409 | 0.0269 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## References

Cao, M., & Wei, J. (2005). An Expanded study on the Stock Market Temperature Anomaly. *Research in Finance*, *22*, 73–112. https://doi.org/10.1016/S0196-3821(05)22003-8

Fayyaz, M., Syed, S., Ali, Z., & Mahmood, S. (2017). Weather Effects on Stock Returns and Volatility in South Asian Markets. In *Asia-Pacific Financial Markets*. Springer Japan. https://doi.org/10.1007/s10690-017-9225-2

Kathiravan, C., Raja, M., & Chinnadorai, K. M. (2018). Stock market returns and the weather effect in Sri Lanka. *SMART Journal of Business Management Studies*, *14*(2), 78. https://doi.org/10.5958/2321-2012.2018.00019.2

Saunders Jr., E. (1993). Stock prices and the Wall Street weather. *American Economic Review*, *83*(5), 1337–1345. https://doi.org/10.2307/2117565

Yoon, S. M., & Kang, S. H. (2009). Weather effects on returns: Evidence from the Korean stock market. *Physica A: Statistical Mechanics and Its Applications*, *388*(5), 682–690. https://doi.org/10.1016/j.physa.2008.11.017

# A Frontier Market Reaction to Covid-19 Crisis: Evidence from Sri Lanka

J.M.R.V. Jayasinghe, N.S. Nanayakkara, Piumi Abeyrathne
*rumeshijaysinha@gmail.com, neelangie@sjp.ac.lk, piumiyapa@sjp.ac.lk*

## Introduction

The Covid- 19 crisis is an ongoing global pandemic, the first Covid case was identified in December 2019 in Wuhan city, Hubei province, China (World Health Organization, n.d.). The WHO initially reported Covid 19 crisis on 31 December 2019. Covid -19 impacted lot of countries with creating new challenges socially and economically. Sri Lanka identified first Covid case in January 2020 and then it spread with increase in new cases. This research investigates the impact of the Covid-19 duration of 2019 to 2021 on the Stock prices of Colombo Stock Exchange in Sri Lanka. This study considered four announcements as the events during the 2019 to 2021 to examine whether the stock market reaction would be the same in pre and post four announcements caused by the Covid-19. This would be helpful to investors, stock exchanges, policy makers and other regulatory authorities how to react on this kind of crisis with unexpected return outcomes.

## Literature Review

This study is based on the Efficient Market Hypothesis (EMH) (1970) introduced by Fama, which explained that if financial markets are efficient all available information will quickly adjust in the security price. Fama explained three types of markets based on which information were quickly adjust in stock prices, namely weak form, semi strong and strong form. Many studies (Hussein Salameh, 2011; Bahrain, 2017; Ajao, 2012) were done about market efficiency with these three forms of markets and they found investors are rational with this efficiency of market. But some researchers provided evidence that (Shiller, 2003; Fletcher, 2009) investment decision can be changed with investor’s sentiment. This study identified gap between theoretical explanation and actual scenarios. Therefore, this study is aimed to examine how information about Covid Pandemic impacted the stock prices in the CSE.

## Research problem

According to EMH past, public and private data can impact security markets, and if the markets are efficient the impact would be instantaneous. Covid -19 was a radical uncertain event where the investors were not able to forecast its risk or its impact on stock returns because of inexperience of events of this enormity which they have not faced in recent times. Therefore, the findings of the impact of such an event in stock markets around the world would provide empirical evidence that would be useful in facing similar future uncertainties. This may also be important to be assessed in frontier markets and its different sectors since they are important investment options in globally diversified investment portfolios. At the same time different sectors in the market may react differently to such new information.

## Research questions

- What is the impact of announcement of lockdown to the health care industry of the Colombo Stock Exchange?
- What is the impact of announcement of lockdown to the hotel and leisure (consumer service industry group) industry of the Colombo Stock Exchange?
- What is the impact of announcement of lockdown to the retail industry of the Colombo Stock Exchange?

## Research Methodology

Event study methodology was used nine days pre-event and nine days post event of each observed events used as the event window. Estimation window was 90 trading days before each event days were observed. Three industry groups were used as a sample out of 24 industry groups for this study and data was collected from CSE official website. Dependent variable is stock price of listed companies in Colombo Stock Exchange and time of information is the independent variable in this study. Time series analysis was used for analyzed collected data from CSE website.

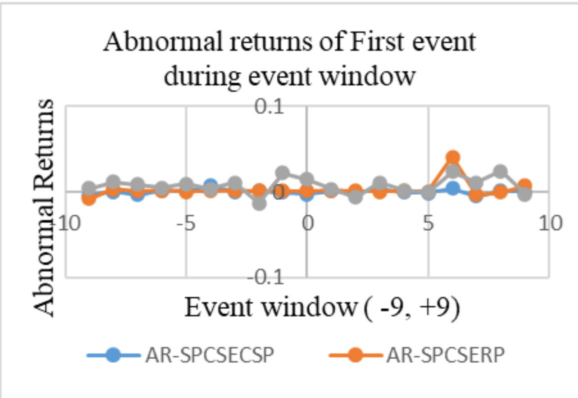
## Findings and Discussion

It is evident that most of the time investors are making decision rationally but sometimes investors are taking decisions based on their emotions due to announcement of macro-economic uncertainties like the Covid-19 crisis. This is mainly because investors cannot or find it difficult to forecast the future returns due to the uncertainty of outcomes of this unexpected, worldwide crisis.

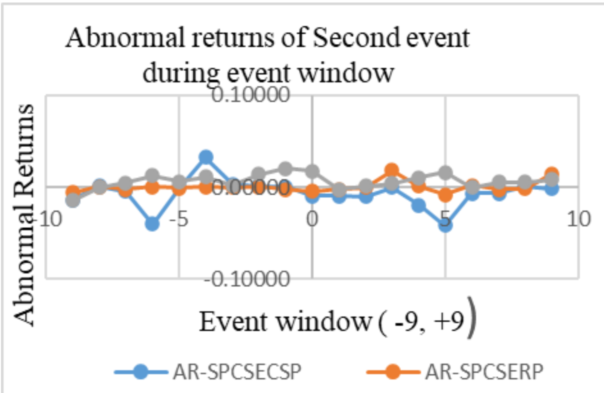
The four events provide results how to Colombo Stock Exchange (CSE) react to this pandemic and how investors made their investment decisions due to this crisis. The first event is initial announcement of Covid virus was announced by the WHO. In First event, abnormal returns of three indices were positive and those are insignificant at 5% and 10% significance level. As well as AARs are positive and insignificant at 5% and 10% significance levels. Second event is fist lockdown was announced by the government in Sri Lanka. It gives negative abnormal returns after the event day, and it indicates imposed of lockdown announcement quickly changed stock prices with changing investors' expectations. This event reported drastic drop of abnormal returns of three industries, and it showed investors overreacted with this announcement. This event proves the investor's sentiment is also impacted on stock returns more than the fundamentals. Third event got insignificant negative abnormal returns for companies listed under tourism industry. But health care and retailing industry were reported insignificant positive abnormal returns after the third announcement. Last event is second nationwide lockdown was announced by the government was generated positive insignificant abnormal returns of health care industry one day after the event. But negative insignificant abnormal returns were reported by the tourism industry (Consumer service) and retailing industry after the event day.

This study showed stock prices were changed with the investor's behavioral changes due to covid-19 with considered four events. Consumer Service Industry group (Tourism Industry) index is renamed SPCSECSP, retailing industry group index is renamed SPCSERP and Healthcare Equipment and Services Industry group index is renamed SPCSEHSP.

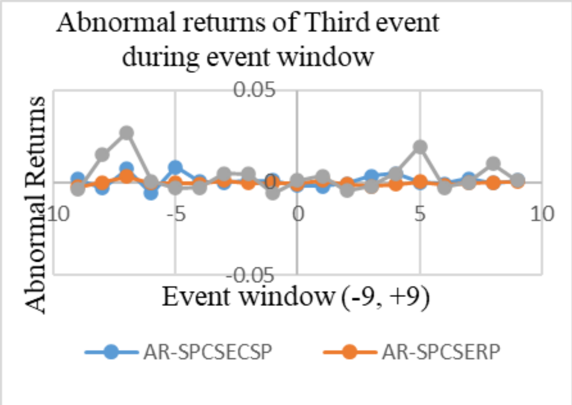
**Event 1: Behavior of Abnormal return**



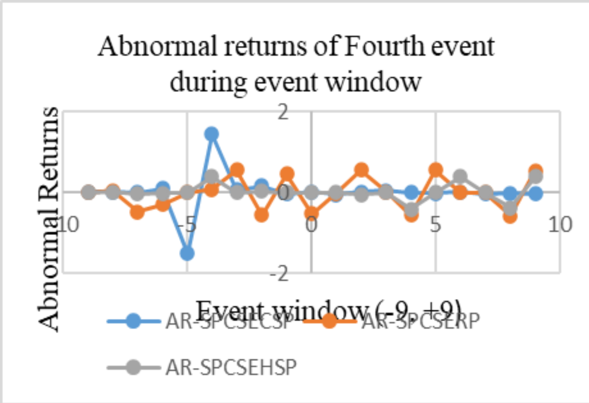

**Event 2: Behavior of Abnormal return**



**Event 3: Behavior of Abnormal return**




**Event 4: Behavior of Abnormal return**




The previous studies provided some evidence about impact of Covid-19 on Stock prices in different countries. (Mohammad Noor ALAM, 2020) study found evidence of a positive AR around the present lockdown period and confirms that lockdown had a positive impact on the stock market performance of stocks till the situation improves in the Indian context. HaiYue Liu 92020) Research paper had considered Covid-19 outbreak has a significant negative effect on stock market returns across all affected countries and areas. Stock markets of Asian countries react more quickly to the outbreak and Investor's fear highly impacted to change the stock returns.

## Conclusion

This research examines Covid-19 impact on the stock returns in CSE with considering three industry groups of Retailing, Health care and Consumer services (Tourism). Based on the event study methodology, first event reported positive and significant AAR and second event indicates negative AAR which mean drastic drop of ARs of three industries. Third event exhibited insignificant negative AR in Tourism industry (Consumer service) and remaining two industries reported insignificant positive AAR and last event reported positive insignificant AR of the Health care industry. But Retailing and Consumer service industries reported negative insignificant AR after the event day. According to these results prove the stock returns were changed with the investor's sentiment due to this crisis.

## References


Ball, R., 2009. The Global Financial Crisis and the Efficient Market Hypothesis: What Have We Learned?. *Journal of Applied Corporate Finance,* pp. 1-26.

Binder, J. J., 2014. The Event Study Methodology Since 1969. *Review of Quantitative Finance and Accounting,* p. 28.

Farrukh Shahzada, D. Y., 2021. Outbreak of epidemic diseases and stock returns: an event study of emerging economy. *ECONOMIC RESEARCH-EKONOMSKA ISTRAŽIVANJA,* p. 21.

Hussein Salameh, R. A., 2011. Testing the Efficient Market Hypothesis at the Semi Strong level in Palestine Stock Exchange – Event Study of the Mandatory Disclosuer. *Testing the Efficient Market Hypothesis at the Semi Strong level in Palestine Stock Exchange – Event Study of the Mandatory Disclosuer,* Issue 69, pp. 46-50.

World Health Organization, n.d. *World Health Organization.* [Online] Available at: https://www.who.int/

# Impact of Dividend Policy on Shareholders' Wealth under the Level of Leverage: Evidence from Colombo Stock Exchange

A.V. Himasha Abeywickrama, D.B.P.H. Dissabandara
*himashav5@gmail.com, dissa@sjp.ac.lk*

**Keywords**: Dividend Policy, Shareholders' Wealth, Leverage, Dividend Per Share, Colombo Stock Exchange

## Introduction

In finance, over the years impact of dividend policy on shareholders' wealth is an unresolved issue. Since still and all dividend policy is unresolved yet (Myers, 2002), have mentioned that the dividend decision is one of the top ten complex issues in finance. It has proven from so much evidence that the dividend plays an important role in the capital markets. Dividend payouts affect to the firm's valuation and moreover cash dividend has a special value over the shareholders' wealth When considering the linkage between the dividend policy and shareholders' wealth, many authors had paid their attention on this.

When it comes to the dividend determinants or the drivers of a dividend policy, the leverage poses a special place. So, in this study I took leverage as the control variable. The decision of how much to employee on capital structure and how much to pay as dividend is the most important choice confronting corporates. Corporates' capital structure and level of firm debt have been the subject of research in various countries from past to present. But still academics have been less helpful in solving the issues related with this. In Sri Lanka few studies had paid their attention this area and most of the studies have gone with the impact of dividend policy on firms' performances. But no studies are around the impact of dividend policy on shareholders' wealth under the leverage level. Hence, this study attempts to examine the impact of dividend policy on shareholders' wealth under the leverage for the period from 2016 to 2020.

When it comes to this study here, authors focused on food, beverages, and tobacco sector. The reason for the selection of this among all the other twenty sectors is because it is one of the future research suggestions in previous studies. The most of reviewed studies were focused only one segment of securities market. Thus, they failed to offer a comparison across different market segments. Accordingly, to compare the results across different market segments, the study selected another sector, which is diversified financial sector. Along the previous literature, most of the academics have paid their attention on manufacturing sector, banking sector, automobile sector, retail sector and insurance sector.

This study would contribute knowledge to the corporate managers which should consider additional debt does not always increase shareholders' wealth and to investors who would like to increase their wealth through dividends. Further, through this study investors would be able to select the right stocks at the right time which will increase their wealth. To design a payout policy and to exercise that to maximize the shareholders' wealth within the leverage level of the corporates this study would help. The analysis of dividend payout ratio, leverage and the regression analysis will help the companies on identifying dividend determinant factors. As this study's topic is far from fully understood there is an ample room for future research. The findings of this study would be helpful to determine the significance of the dividend payment among the firms as well.

## Literature Review

Different studies have investigated the relationship among various determinants of dividend policy and its association with shareholders' wealth. All those studies show mix evidence by using different stock markets in the world. Therefore, the relationship between dividend policy and shareholders' wealth is still a controversial problem in the literature of finance. With the contribution of Lintner, Gordon, Modigliani and Miller, dividend has a big history which is more than a century. In 2008, (Azhagaiah, 2008) conducted a study on the impact of dividend policy on shareholders' wealth in South India using 114 Listed companies. He found out that there is a significant impact of dividend policy on shareholders' wealth by employing multiple and stepwise regression to the study. But through his studies' results it implied that shareholders' wealth was not influenced by dividend payout ratio.

When it comes to the local evidence, in 2014 according to (Kumaresan, 2014) study using top ten listed companies in Hotel and Travel sector in Sri Lanka found out that there is a significant impact of dividend policy on shareholders' wealth as well as DPS and DPR were positively significant with the shareholders' wealth. For the analysis the author has used regression and correlation analysis and used cluster sampling technique for the sample selection. At the same time author pointed out that maintain optimum uses of dividend is an essential one because he found out that retention ratio is negatively correlated with shareholders' wealth. In 2020 (Balagobei, 2020) conducted a study based on the impact of dividend policy on shareholders' wealth. In there the author has used 12 sample listed firms in manufacturing sector and conducted the study using regression analysis. Based on the findings author has concluded that dividend per share has a greater impact on shareholders' wealth. So, this study's findings also supported with the previous conclusions. Because in model development both authors have used same variables such as EPS.ROE, DPS and DPR and only the sector wise information were differed. Both studies used EPS share as a proxy to measure the shareholder's wealth. This studies' results support with the result of (Azhagaiah, 2008). Because in his study also he figured out that shareholders' wealth is not affect by DPR.

Recently, (Jabbouri, 2016) found that corporate debt is one of the dividends' determinants that negatively affect relationships. According to him three things can cause to the negative relationship. First, firms with debt may make dividend deductions voluntary or due to the pressure of the creditors. Second, the firm's high debt ratio cause to firms' risk to rise and increase the cost of funding from external parties. Third, dividend payment is no longer crucial because debt plays role in reducing the information asymmetry and agency cost.

## Problem Statement and Research Questions

The problem statement arises as whether there is an impact of dividend policy on shareholders' wealth under the level of leverage.

Further it can be outlined as "What is the impact of dividend policy on shareholders' wealth under the level of leverage?"

Research Questions/Issues addressed through the study

- What is the relationship between dividend policy and shareholders' wealth?
- What is the relationship between leverage and dividend policy?
- What is the impact of leverage on dividend policy?

## Objectives

Main objective**-** The main objective of this study is to find out the impact of dividend policy on shareholders' wealth under the level of leverage of a company.

Sub objectives-
To find out the relationship between dividend policy and shareholders' wealth
To find out the relationship between leverage and dividend policy
To find out the impact of leverage on dividend policy

## Research Methodology

For the purpose of making a comparison over industries the authors selected two sectors as food, beverages, and tobacco sector and diversified financial sector. In the study we employed DPR, DPS to measure the dividend policy and EPS to measure the shareholders' wealth. The leverage which I took as the control variable measured through D/E ratio. To achieve the desired objectives of the study, quantitative research design was employed, and secondary data which were collected for the period of 5 years from 2016 to 2020 was utilized for the empirical analysis. The secondary data were gathered from published audited annual reports. The target population for the study was all listed firms on the Colombo Stock Exchange under the sectors of food, beverages, and tobacco and diversified financial. Using the simple random sampling technique sample was drawn from the population and it composed with 20 companies under two sectors. The present study used the correlation and regression analysis for analysis. This study has tested three different samples under two sectors discussed earlier as, Food, Beverages, and Tobacco sector, Diversified Financial sector, Aggregate sample (consists with the data of both sectors).

All the tests were separately tested and compared with each other and considers interpretation of the results and the discussion of the results in line with the already decided objectives. According to the hypotheses which were already developed, this study constructs an analytical model to carry out the empirical analysis as.

$$SW=B0+ B1\ DPS+ B2\ DPR+ B3\ D/E+ ea.$$

## Findings and Conclusions

The study sought to examine the impact of dividend policy on shareholders' wealth under the level of leverage. The focus was on firms listed under food, beverages, and tobacco sector and diversified financial sector. When examine the impact of dividend policy on shareholders' wealth under the level of leverage of firms listed on the Colombo Stock Exchange under sector of food, beverages, and tobacco sector, found that dividend plays a crucial role in determining the value of a firm under the food, beverages, and tobacco sector. This result is consistent with the results of (Balagobei, 2020) which conducted under the sector of manufacturing. That study of (Balagobei, 2020) regression models also showed a variation around to 40% which is less than 50% in dependent variable. That study proved that EPS and DPR has a negative relationship same as this study. Further this results in line with the results obtained through (Kumaresan, 2014) study based on the hotel and travel sector in Sri Lanka. In his analysis results showed that DPR has a negative impact on EPS same as per this result. The analysis of this study showed that dividend policy effect is more pronounced and significant under the sector of diversified financial rather than the sector of food, beverages, and tobacco sector. Because the random effect model found out that shareholders' wealth is positively and significantly determined by DPS and DPR in diversified financial sector. DPR was positively and significantly determined. Further, the results reveal that leverage has a negative impact on dividend policy. On diagnostic tests, correlations supported to accept the negative significant relationship between dividend and the level of leverage. Therefore, that results in line with the conclusion made by Jabbouri (2016). Moreover, it can be concluded that the dividend policy has a significant impact on shareholders' wealth while leverage has a negative impact on firms' dividend policy.

## References

Azhagaiah, R. &., 2008. The Impact of Dividend Policy on shareholders welath. *International Research Journal of Finanace and Economics.*

Balagobei, S. &. S. P., 2020. Dividend Policy and Shareholders' Wealth of Listed Manufacturing Companies in Sri Lanka. *ournal of Economics and Sustainable Development,* Volume 6(19).

Jabbouri, I., 2016. "Determinants of corporate dividend policy in emerging markets"Evidence from MENA stock market. *" Res. Int. Bus. Finance,* Volume 37.

Kumaresan, S., 2014. Impact of Dividend Policy on Share Holders' Wealth. *INTERNATIONAL JOURNAL OF TECHNOLOGICAL EXPLORATION AND LEARNING,* Volume 3(1).

Myers, B. R. &., 2002. *Principle of Coporate Governance.* 6 th ed. s.l.:s.n.

# Corporate Governance & Firm Performance: Evidence from Sri Lanka

Rashna Jinori, Chandana Gunathilaka
*rashnajinori97@gmail.com, chandana@sjp.ac.lk*

**Keywords:** Governance, Performance, Sri Lanka

## Introduction

Corporate Governance is all about promoting corporate fairness, transparency, and accountability. Well-managed Mechanisms of Corporate Governance perform a major role in enhancing corporate performance. Corporate Governance upgrades the company image expands shareholders' confidence, as well as decreases the probability of frivolous acts. however, when it comes to the Sri Lankan context, the Code of Best Practice (CBP) was developed by the Institute of Chartered Accountants of Sri Lanka (ICASL) and SEC in 2017. CBP is not mandatory for the companies, therefore a company has the freedom to comply with recommendations made in CBP or not. Thus, the study provides key insights into the impact of corporate governance on company performance. As a result, the report is mainly valuable for established businesses in Sri Lanka. The importance of this study is significant because there have been few studies to address the subject in the Sri Lankan context.

## Literature Review

Several previous practical studies of corporate governance in over the world wanted to confirm the effect of corporate governance on firm's performance. Most of the regular related literature examines the interrelation between firm performance and some subcategory of numerous measurements of corporate governance such as board size, duality of CEO, and proportion of non-executive directors etc. However, Previous research has yielded varied results, with some claiming a positive association between CG and corporate performance (Fama & Jensen, 1983) While some studies concluded that there was no link between CG and company performance (Hermalin & Weisbach, M. S, 1991).

## Problem

A large number of studies have been conducted to investigate the relationship between corporate governance and firm performance. But according to the knowledge of the present researcher, none of the studies have been undertaken on the relationship between corporate governance & firm performances in the Sri Lankan context. Thus, it is difficult to get a clear idea or a conclusion of the relationship between the corporate governance affect to their performances in Sri Lanka. Therefore, this study is done for filling this gap. This study tries to find out the impact level of corporate governance on firm performance in Sri Lanka. The objective of this study is to examine the relationship between corporate governance and the performance of listed companies in Sri Lanka. We investigate the relationship between the board size, the CEO duality, and the proportion of non-executive directors with the performance.

## Methods

The sample of the study consists of twenty plantation companies from Colombo Stock Exchange. Board size, CEO duality, and proportion of non-executive directors were considered independent variables for this study and performance is the dependent variable. As controlling variables firm size, firm age, and leverage of the firm were used. The researcher uses ROA, ROE, and EPS as firm performance measures. This analysis included Descriptive statistics, Correlation Analysis, and Multiple Regression Analysis.

## Findings and Conclusion

The outcomes of this study back up the claim that smaller boards are more likely to be effective in monitoring management (Yermack, 1996). Dalton et al. (1998), on the other hand, found a positive and statistical link between board size and financial performance. As a result, this study finds evidence to support the hypothesis that board size has a detrimental impact on company performance in Sri Lankan listed companies. This study also confirms a negative association between outside (independent) directors and firm performance, which is consistent with the findings of (Klein, 1998), who found that having a high percentage of independent directors had a detrimental impact on firm performance. The regression study demonstrates that the separation of the two CEO and chairman positions have a significant positive link with firm performance. Many academics agree with the viewpoint presented above (Rencher; Dalton, 1991).

## References

Fama, E. F., & M. C. Jensen. (1983). Seperation of ownership & control. *Journal of Law and Economics*, 301-325.

Rechner, P. L., & Dan R Dalton . (1991). CEO duality and organizational performance. . *Strategic Management Journal*, 150-160.

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 185-211.

Daily, C. M., & Dalton, D. R. (1998). Bankruptcy and corporate governance: the impact of board composition and structure. *Academy of Management Journal, 37(6)*, 1603-1617.

Hermalin, B. E., & Weisbach, M. S. (1991). The effects of board composition and direct incentives on firm performance. . *Financial management*, 101-112.

# Corporate Social Responsibility on Financial Performance Evidence from Sri Lankan Commercial Banks Listed in Colombo Stock Exchange

C.J. Ganhewa, P.A.N.S. Anuradha, I.G.S.M. Illubethanne
*cjganhewa97@gmail.com, anuradha@sjp.ac.lk, samyaigsm@sjp.ac.lk*

**Keywords:** Corporate Social Responsibility, Financial Performance, Listed Commercial Banks, Colombo Stock Exchange

## Introduction

The importance of Corporate Social Responsibility (CSR) has gained substantial attention among scholars and practitioners during the recent decades as a mean of improving business performance. CSR is a self-regulating guidance which ensures the company is socially accountable to itself and to its stakeholders including all external and internal parties. According to Sheham, A.M., & Jahfer, A. (2011), CSR is a voluntary concept in which businesses incorporate social and environmental concerns into their business operations and interactions with stakeholders. Among many other researchers Dyllick, T. & Hockerts, K. (2002) argue that engaging and disclosing CSR activities enable corporates to create goodwill which lead them towards sustainable growth via improved corporate competitiveness. However, another stream of researchers takes a contradictory view stating that CSR is a waste of resources and time of the firm and instead, firms can use those resources to maximize shareholder wealth (Gangi et. al., 2018). Knowing the fact that CSR is an additional expense, yet the corporates progressively invest in CSR activities aiming at higher financial performance. Thus, considering the lack of consensus among the findings, this study intends to add knowledge to the existing literature by assessing how engagement in CSR activities contributes to Financial Performance (FP) of the listed commercial banks particularly in an emerging market i.e., Sri Lanka.

## Literature Review

From the perspective of corporates, CSR can be defined as a long-term commitment by firms, regardless of their size or industry, to act ethically to contribute to the economic progress by fine-tuning and improving people's living standards (Mughal, 2014). It is also seen as a strategic initiative that contributes to a brand's reputation which would contribute to firm profits. However, in the literature there’s no uniform definition to describe CSR and it depends on the interests and the perspectives considered in a particular context. It is commonly observed that CSR is increasingly falling under the corporate governance umbrella.

Financial performance can be usually defined as the measurement of the financial position of a company over a specified time period to know how efficiently a company is using its resources to generate income (Malik, S. & Nadeem, M., 2014). The definition of FP according to Harrison, J.S. (1999) is the entire value created by the firm as a result of its activities. According to the literature, among many other variables, Return on Asset, Return on Equity, Net Profit, earning per Share, are the most widely used measures to assess the financial health of a company. Despite this, experts have yet to determine exactly what CSR entails in the Sri Lankan context, or whether there are any business benefits (Fernando, M., 2007).

Though studies about CSR and its effect on FP have been conducted regarding both developed and developing countries, the findings are mostly inconclusive Freeman (1994) and Gangi et.al. (2018) among others found evidence to claim for a positive association of CSR on the firm performance while some other researchers (Friedman, 1970 and Soana, 2011) found a negative relationship between the two variables. Further, some others (Mittal, R.K., 2008) have found a no evidence to prove an association between CSR activities on the financial performance of firms.

## Research Question

CSR and FP are key concepts that all most all the business organizations are dealing with. Although it has taken into consideration by most scholars the impact of CSR on firm's financial performance, is still questionable. Considering this concept of CSR, it is deliberated as a kind of expense. If CSR is an expense, how would it bring financial benefits to organizations is the key focus of this study. Thus, this study is structured to find out *"what is the nature and the extent of the relationship between CSR and FP in the commercial banks listed in CSE, Sri Lanka?"*.

## Research Objective

Accordingly, the expected objective of this research can be specified as *"to identify the nature and the extent of the relationship between CSR and FP in the commercial banks listed in CSE, Sri Lanka"*.

## Methodology

In identifying the impact of CSR on FP, the study used a quantitative approach and considering the substantial contribution provided towards growth and stability of the Sri Lankan financial system, all the listed licensed commercial banks were selected to conduct the analysis. A panel data set is utilized covering all the 10 licensed commercial banks listed in the CSE over a period of 11 years from 2010 to 2020. Secondary data was extracted on annual basis for the analysis using the published audited annual reports. The study has used descriptive and inferential analysis (correlation and multiple panel regressions analyses) to figure out the association between the variables using E-Views data analysis software. Huasman test was performed to identify the best fitted model (Random Effect or Fixed Effect). The following variables have been incorporated in the analysis of this study.

Four dependent variables were used in assessing the FP of commercial banks namely Return on Assets (ROA), Return on Equity (ROE), Net Profit after Tax (NPAT) and Operating Income (OI). Going in line with literature, the two most commonly utilized measures were taken to measure the level of engagement in CSR activities and those are Corporate Donations (CD) and number of CSR projects per year (NCSR). Further, few control variables are also incorporated in the analysis which are, Bank Size (BS), Bank Age (BA), Capital Adequacy – a measure of liquidity (CAR) and Inflation – a measure of economic condition of the country (INF). Accordingly, the following four models were developed to assess the nature and extent of the relationship between CSR and FP among the licensed commercial banks in Sri Lanka.

$$ROA_{i,t} = \beta_{0_{i,t}} + \beta_1\, CD_{i,t} + \beta_1\, NCSR_{i,t} + \beta_2\, BS_{i,t} + \beta_3\, BA_{i,t} + \beta_4\, CAR_{i,t} + \beta_5\, INF_{i,t} -- \textbf{Model 1}$$

$$ROE_{i,t} = \beta_{0_{i,t}} + \beta_1\, CD_{i,t} + \beta_1\, NCSR_{i,t} + \beta_2\, BS_{i,t} + \beta_3\, BA_{i,t} + \beta_4\, CAR_{i,t} + \beta_5\, INF_{i,t} -- \textbf{Model 2}$$

$$NPAT_{i,t} = \beta_{0_{i,t}} + \beta_1\, CD_{i,t} + \beta_1\, NCSR_{i,t} + \beta_2\, BS_{i,t} + \beta_3\, BA_{i,t} + \beta_4\, CAR_{i,t} + \beta_5\, INF_{i,t} -- \textbf{Model 3}$$

$$OI_{i,t} = \beta_{0_{i,t}} + \beta_1\, CD_{i,t} + \beta_1\, NCSR_{i,t} + \beta_2\, BS_{i,t} + \beta_3\, BA_{i,t} + \beta_4\, CAR_{i,t} + \beta_5\, INF_{i,t} -- \quad \textbf{Model 4}$$

## Findings and Conclusion

Before running the regression, a panel unit root test is utilized to identify the stationarity of the variables employed and all the variables are found to be stationary either at level or once 1st differenced. As per the results of the Hausman's test, Model 1 and Model 2 were tested as Random Effect Models whereas Model 3 and Model 4 were tested as Fixed Effect Models. Summary of the findings under each regression model is summarised in Table 1.

Considering the control variables, the Table 1 provide evidence for a positive and statistically significant relationship between CD and FP under all four models. Accordingly considering the CD, we have evidence to reject the $H_0$ and it can be concluded that there is statistically significant relationship between CSR and FP among the licensed commercial banks listed in CSE, Sri Lanka. However, the relationship between NCSR and FP measures were found to be negative and insignificant in the first three models while it is negative and significant in model 4. Based on the results of this study, as CD has higher explanatory power compared to NCSR, it can be concluded that engaging in activities reflecting Corporate Social Responsibility would lead to higher Financial Performance in the licensed commercial banks in Sri Lanka.

**Table 1-Summary results – Nature and the extent of the relationship between CSR and FP**

| | Random Effect Models | | Fixed Effect Models | |
|---|---|---|---|---|
| | ROA | ROE | NPAT | OI |
| | Model 1 | Model 2 | Model 3 | Model 4 |
| CD | (+) significant * | (+) significant ** | (+) significant * | (+) significant *** |
| NCSR | (-) insignificant | (-) insignificant | (-) insignificant | (-) significant * |
| Prob.(F-stat) | 0.0098 | 0.0068 | 0.0000 | 0.0000 |

*Note: * Significant at 0.1 level ** Significant at 0.05 level *** Significant at 0.01 level*

This study contributes to fill the existing knowledge gap by adding flow of new knowledge on CSR and financial performance. Also, the findings and recommendations of the study will be extremely useful to students and those interested in undertaking research in this field. The current research will also give literature, which will help to create a better understanding of them. Finally, this study will motivate corporations to think more deeply about CSR and expand into new areas of sustainability reporting, to comply with international standards and equalize reporting quality to cutting-edge globally acknowledged norms.

## Reference


Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business strategy and the environment*, 11(2), pp. 130-141.

Fernando, M. (2007). Corporate social responsibility in the wake of the Asian tsunami:: A comparative case study of two Sri Lankan companies. *European Management Journal*, 25(1), pp. 1-10.

Freeman, R. E. (1994). The politics of stakeholder theory: Some future directions. *Business ethics quarterly*, pp. 409-421.

Friedman, M. (1970). The social responsibility of a business is to increase its profits. *Corporate ethics and corporate governance*. pp. 173-178.

Gangi, F., Mustilli, M., Varrone, N., & Daniele, L. M. (2018). Corporate social responsibility and banks' financial performance. *International Business Research*, 11(10), pp. 42-58.

Harrison, J.S. and Freeman, R.E. (1999) Stakeholders, Social Responsibility, and Performance: Empirical Evidence and Theoretical Perspectives. *Academy of Management Journal*, 42, pp. 479-485.

Malik, S. & Nadeem, M. (2014). Impact of corporate social responsibility on the financial performance of banks in Pakistan. International Letters of Social and Humanistic Sciences Vol. 21 pp. 9-19

Mittal, R.K. (2008). An analysis of linkage between economic value added and corporate social responsibility. *Management Decision*, 46 (9), pp. 1437-1443.

Mughal, S., (2014). Corporate social disclosure: A case study on petroleum industry of Pakistan. *Journal of Economics and Sustainable Development*, pp. 48-56.

Sheham, A.M., and Jahfer, A., (2011). A study on the relationship between corporate financial performance and corporate social responsibility(CSR). *International Journal of research in commerce ,IT and management*, pp. 25-31.

Soana, M.-G. (2011). The relationship between corporate social performance and corporate financial performance in the banking sector. *Journal of Business Ethics*, 104(1), pp. 133-148.

# The Impact of Financial Literacy on Rational Decision Making-Special Reference to Undergraduates of University of Sri Jayewardenepura

L.H. Madhusika, N.S. Nanayakkara, Piumi Abeyrathne
*hansinimadhusika@gmail.com, neelangie@sjp.ac.lk, piumiyapa@sjp.ac.lk*

**Keywords:** Financial Literacy, Rational Decision Making, Undergraduates, Potential Investors

## Introduction

An underlying assumption of economic theories are that all economic beings are rational and that they act rationally. Rationality means the quality or state of being rational and it refers to the reasons for believing one's beliefs and actions being consistent with the reasons for the actions. Rational individuals are considered as an economic man or "*Homo Economics*" where they forecast possible outcomes and make decisions according to the utility theory to maximize their overall wealth. Finance theories are also built upon the assumption that individuals are always rational and in asset pricing they assume investors make decision in financial markets according to said premise.

Financial literacy is the awareness, skills, knowledge, and values which are needed to handle money in personal and family life for earning, spending, borrowing and investing. A person who is financially literate can be assumed to be more rational in forecasting future outcomes and take the best cause of action to maximize wealth because of their awareness, skills, and knowledge about finance. Not only as an investor but also as a person, knowledge about financial terms is very important in day-to day life. It helps to make better rational decision in normal life activities like borrowing funds, acquiring some assets such as vehicle, land, spending money on something and saving money. Hence, there is a clear view about that financial literacy effect on the rational decision making. When there are highly literate investors, their rational decision-making ability is also high. This study investigates highly potential investors' financial literacy and its impact on their rational decision making.

University of Sri Jayewardenepura is one of the largest universities in Sri Lanka which studies highest scored students from G.C.E A/L examination. ln here, around 15000 undergraduates are following courses and university consists of eight faculties, Faculty of Humanities and Social Sciences, Faculty of Applied Sciences, Faculty of Management Studies and Commerce, Faculty of Medical Sciences, Faculty of Graduate Studies, Faculty of Engineering, Faculty of Technology and Faculty of Allied Health Sciences. Undergraduates can be identified as potential investors because they expect to make investment and lead financial market in the future. Therefore, it is essential to identify level of financial literacy that undergraduates have, how they take decisions and how relate their knowledge to make better decision. Thus, study aims to investigate the impact of financial literacy on rational decision-making referring undergraduates as potential investors.

## Literature review

Financial literacy means awareness, skills, knowledge, and values which are needed to handle money in personal and family life for earning, spending, borrowing, and investing. Financial literacy enables people to make better financial decisions, make better financial choices, plan for a better future by effectively using money, respond competently in daily life, and be more aware of financial risk and possibilities (US Department of Labor, 2001; Cohen 2004; Mavrinac & Ping, 2004, Lusardi & Mitchell, 2006). Most researchers have investigated the financial literacy among students and undergraduates differently. Rational decision making is the process of four aspects: identifying and observing a situation, developing alternative solutions, assessing, and choosing the best among several options, and implementing and monitoring the results (Stolper, 2017). According to N.S. Nanayakkara (2019), a market exists that accommodates both rational and irrational investors.

Clancy (2001) and Lusardi & Mitchell, (2006) have shown that significant number of people in society is incapable of performing even the most fundamental economic calculations, that their financial knowledge is generally insufficient to save wisely and make other sound financial decisions, and that people with low financial literacy also have low levels of education and income. Soderlund (2020) surveys on financial literacy and rational financial decision-making using university students in Sweden. He finds that there is no difference between financial rationality and faculties of university and there is no connection between financial literacy and rational financial decisions.

## Research question of the study

"What is the impact of financial literacy on rational decision making of undergraduates in university of Sri Jayewardenepura?"

## Objectives of the study

The objective of this study is to examine the impact of financial literacy on rational decision-making special reference to undergraduates of university of Sri Jayewardenepura.

## Methodology

To achieve the objective of this research, financial literacy was used as independent variable which used Earnings, Borrowings, Spending and Investing to measure financial literacy and rational decision making was used as dependent variable measured using identifying situation, developing alternative solution, choosing the best among several option and implementing and monitoring the results. This is depicted through the Figure 1 conceptual model.

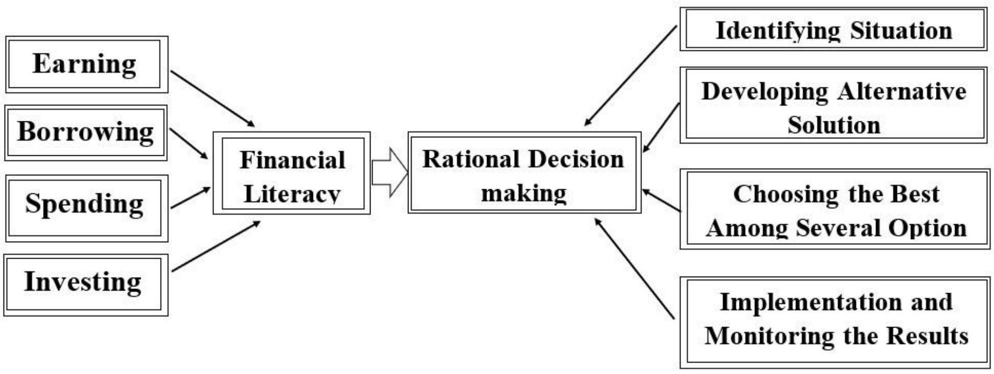



**Figure 1. The Conceptual Model**

To measure these variables, primary data was collected through 153 respondents and undergraduates of University of Sri Jayewardenepura have taken as the sample. 153 responses were collected through 5 faculties of university of Sri Jayewardenepura named Management Studies and Commerce, Applied Science, Medical Science, Humanities and Social Sciences and Technologies. These data were collected via online questionnaire which used seven-point Likert scale model by building up using questionnaires used by previous researchers. It consists of 44 questions under descriptive characteristics, financial literacy and rational decision making. SPSS software was used to analyze these collected data and conducted the Principal Component Analysis and Multiple Regression Analysis to get results which are needful to test the built-up hypothesis.

## Findings and Discussion

Principle Component Analysis were conducted to test the validity of the variables and according to KMO and Bartlett's Test of Sphericity measurements, acceptable dispersion around the elements of the respective variables were found and also those variances could be identified using scree plots. Further, reliability of the variables could identify using Cronbach's alpha measurement and it concludes that there is higher reliability for 6 variables and adequate reliability for other two variables. Finally, multiple regression analysis was conducted to figure out how much independent variable influences on the dependent variable by using Adjusted $R^2$ and ANOVA table test were conducted to identify the overall significance of the model. With the dependent variable of identifying situation, it shows 84% explanatory power of the independent variables. With the dependent variable of developing alternative solution, 82% explanatory power of the independent variables were identified. With the dependent variable of choosing the best among several option, 78% explanatory power were identified and with the dependent variable of Implementing and Monitoring Results, 77% explanatory power were identified. The all-ANOVA models which are built up for four dependent variables represent that all models were overall significant. Therefore, we can conclude that there is significant impact of financial literacy on rational decision making.

Ultimately, coefficient table test was conducted to identify which independent variables has an impact on the dependent variable and following final findings were identified. Firstly, borrowing and investing has significant positive relationship with dependent variable of identifying situation. Secondly, pending and investing has significant positive relationship with dependent variable of developing alternative solution.  borrowing, spending, and investing has significant positive relationship with dependent variable of choosing the best among Several Option. Finally, earning, spending, and investing has significant positive relationship with dependent variable of implementing and monitoring results.  Thus, this study was able to identify the positive impact among financial literacy and rational decision making.

## Conclusion

Research was done to identify the impact of financial literacy on rational decision making of undergraduates in university of Sri Jayewardenepura. Data were collected from 153 respondents using questionnaire and those were tested using Principal Component Analysis and Multiple Regression Analysis. Through the results got from this analysis, we can ultimately conclude that to behave rationally in the financial markets, undergraduates who have identified as potential investors should have sound financial literacy regarding the area of earnings, borrowings, spending and investing. Otherwise, they will fail to make rational decision at the right time and place, and it will cause to collapse of the financial market, and it led to bring harmful direction for the country.

## References

Clancy, M. G.-W. (2001). Financial education and savings outcomes in individual development accounts.

Cohen, M., Stach, K. & Mcguinnes, E. 2004. Financial education: a win-win for clients and MFIs. Washington DC: Microfinance Opportunities

Lusardi, A. &. (2006). Financial literacy and retirement preparedness: Evidence and implications for financial education programs.

N. S. Nanayakkara, Y. W. (2019). Rational Approach to Noise Trader Approach in Asset Pricing. *International Journal of Innovation, Management and Technology*.

Soderlund, A., & Eriksson, J. (2020). __Financial Literacy & Rational Financial Decision Making: a study of university students in Sweden__ (Dissertation

Stolper, O. A. (2017). Financial literacy, financial advice, and financial behavior. Journal of Business Economics, 87(5), 581–643.

# Impact Of Capital Structure on Firm Performance: Evidence from Listed Privatized Firms in Sri Lanka

R.D.D.A. Senanayaka, K.L.W. Perera
*deshaniasanka@gmail.com, wasantha.perera@sjp.ac.lk*

**Keywords**: Capital Structure, Firm Performance, Listed Privatized Firms, Pecking Order Theory

## Introduction

Capital structure can be identified as the major area in corporate finance and also capital structure decisions play an important role in the performance of a firm (Siddik, Kabiraj and Joghee, 2017). Capital structure decisions have greater importance to the firm because capital structure choice is important to get a decision to rise fund capital to the firm from the cheapest sources and it will reason to maximize the income of the firm after taxes. However, the capital structure argument began with the initial work done by Modigliani and Miller. Furthermore, Modigliani and Miller argue that in a perfect and complete market in which there are no personal and corporate taxes, the structure of capital is not relevant to the firm value, but they could find that through later studies in the context of imperfect markets, financial leverage influence on the company to increase its value by benefiting from tax shield through using debt (Mardones and Cuneo, 2020). Actually, Modigliani and Miller focused on the relationship between capital structure and firm value. Nevertheless, according to a large number of studies firm performance can be identified as a moderating variable of capital structure and firm value relationship. However, numerous studies conducted to examine the relationship between capital structure and firm performance, but the results of studies provide inclusive conclusions. In the Sri Lankan context also a large number of studies investigated the impact of capital structure on firm performance. In this study, consider how capital structure impact on listed privatized firms in Sri Lanka.

## Literature review

However, capital structure decisions have greater importance to the firm because capital structure choice is important to get a decision to rise fund capital to the firm from the cheapest sources and it will reason to maximize the income of the firm after taxes. As a result of that, numerous studies conducted to examine the relationship between capital structure and firm performance.

Based on the above literature, it is evident that capital structure can significantly impact firm performance. Some researchers argue that there is a positive relationship between capital structure and firm performance. Nevertheless, some researchers claim that there is a negative relationship between capital structure and firm performance. On the other hand, some researchers suggest that capital structure insignificantly impacts firm performance. However, most of the researchers claim that capital structure decisions are significantly important to firm performance. It means that the results of studies provide inclusive conclusions. For instance (Fekadu Agmas, 2020), (Li, Niskanen and Niskanen, 2019), (Tifow and Sayilir, 2015)

According to (Fekadu Agmas, 2020) the results indicate that capital structure positively and significantly impacts the firm performance. (Li, Niskanen and Niskanen, 2019) according to the results, the study suggests that there is an inverse relationship between capital structure and firm performance. Furthermore, Tifow and Sayilir (2015) emphasized short term debt to assets has a significant negative relationship with Return on Asset, EPS, and Tobin's Q ratio. However, the results of the study found that long-term debt to total assets has a significant negative relationship with Return on Equity, EPS, and Tobin's Q ratio, while it is positively and significantly correlated with Return on Assets

Numerous previous finance-related research was conducted to determine the effect of capital structure on firm performance. In the Sri Lankan context, many researchers focus on finding the impact of capital structure on firm performance. However, according to the knowledge of the researcher, this study will be the first study in Sri Lanka to examine the impact of capital structure on listed privatized firm performance. As a result of that, this study can be identified as contextually significant research. Therefore, this study attempts to fill this persistent research gap by investigating the Sri Lankan listed privatized firms to find the impact of capital structure and firm performance.

## Problem Statement and Research Questions

Based on the reviewed literature, it is evident that the capital structure significantly impacts the firm performance and also many researchers argue that capital structure decisions can reduce the cost of capital and improve the performance of the firm. According to (Ahmed and Bhuyan, 2020) based on previous studies capital structure a be identified as the most perplexing puzzle in the financial literature that deals with solutions to the optimal mix of debt and equity, and capital structure decisions can be identified as important decisions to any type of firms. In addition to that, in the past few decades, many governments of countries privatized a huge number of State-Owned Enterprises, and also, they emphasized that most of the State-Owned enterprises were lost making. In the Sri Lankan context also, many State-Owned enterprises were privatized. As the privatization capital structure of the firms changed. Furthermore, only a few studies examine the impact of capital structure on the firm performance of listed privatized firms. In the Sri Lankan context, it is rare to find studies that investigate the impact of capital structure on the firm performance of privatized firms that are listed in the Colombo Stock Exchange.

Therefore, this study attempts to fill this persistent research gap by investigating the impact of capital structure on the firm performance of listed privatized firms in Sri Lanka. The researcher has identified the need for considerable attention to the effect of capital structure on listed privatized firms' performance with the econometrics models. As a result of that, this study sought to assess "What is the impact of capital structure on firm performance of privatized listed firms in Sri Lanka?".

## Research Methodology

The Colombo Stock Exchange has 296 companies representing 20 GICS industry groups as of 31st December 2021. The purpose of this study is to examine the relationship between capital structure and firm performance by using evidence from listed privatized firms in Sri Lanka. And aim to investigate whether there is an increasing tendency in the financial performance of privatized firms in Sri Lanka. As a result, this study considers thirty (30) listed privatized firms in Sri Lanka over the period of nine (09) years.

Based on the literature in this study use panel data to conduct the study. A large number of previous studies consider panel data to perform the studies. In addition to that based on the research problem, gather quantitative aspect data. Quantitative data means that value is measured in the form of numbers or counts, with a unique numerical value associated with each data set. The quantitative research approach is appropriate for this research to meet the research objective and research design adopted in this study. In order to reach the research objective, collect data from annual reports of selected listed privatized firms as the sample. Therefore, this study examines the secondary data source.

The examines the impact of capital structure on firm performance, this study uses capital structure as the independent variable and also debt to equity ratio, equity multiplier, and total debt to total assets ratio are considered as the proxies of the capital structure. The dependent variable of this study is firm performance and also by using return on assets and return on equity measure the firm performance. These accounting proxies are widely used in literature. This study use, three variables as control variables because of firm performance not only depends on capital structure but also depends on other factors also. Therefore, in this study consider the growth of the firm (GOF), size of the firm (SOF), and ownership of the firm (OOF) as the control variables.

## Findings and Conclusions

The descriptive statistics results provided a clear idea about the characteristics of the variable used to conduct the study. The correlation analysis indicates that capital structure is negatively associated with the firm performance of listed privatized firms in Sri Lanka. The results of the research study's Fixed–Effect Panel Ordinary Least Square regression analysis revealed that the coefficient of proxies of capital structure negatively and significantly impacts the firm performance of the listed privatized firms in Sri Lanka.

Furthermore, the results of the Fixed-Effect panel least square regression revealed that the growth of the firm positively and significantly impacts the firm performance of listed privatized firms in Sri Lanka. And results showed that the size of the firm negatively and significantly impacts the firm performance. However, ownership of the firm significantly does not impact the firm performance.

Based on the above findings the study concluded that the results of the study are consistent with the pecking order theory. However, the result of the study does not consist of the trade-off theory. On the eve of that, the study concluded that there is a negative impact of capital structure on listed privatized firms in Sri Lanka.

## References

Fekadu Agmas, W. (2020) ‘Impacts of capital structure: profitability of construction companies in Ethiopia’, *Journal of Financial Management of Property and Construction*, 25(3), pp. 371–386. doi: 10.1108/JFMPC-08-2019-0072.

Li, K., Niskanen, J. and Niskanen, M. (2019) ‘Capital structure and firm performance in European SMEs: Does credit risk make a difference?’, *Managerial Finance*, 45(5), pp. 582–601. doi: 10.1108/MF-01-2017-0018.

Mardones, J. G. and Cuneo, G. R. (2020) ‘Capital structure and performance in Latin American companies’, *Economic Research-Ekonomska Istrazivanja* , 33(1), pp. 2171–2188. doi: 10.1080/1331677X.2019.1697720.

Siddik, M. N. A., Kabiraj, S. and Joghee, S. (2017) ‘Impacts of capital structure on performance of banks in a developing economy: Evidence from bangladesh’, *International Journal of Financial Studies*, 5(2). doi: 10.3390/ijfs5020013.

Tifow, A. A. and Sayilir, O. (2015) ‘Capital Structure and Firm Performance: An Analysis of Manufacturing Firms in Turkey’, *Eurasian Journal of Business and Management*, 3(4), pp. 13–22. doi: 10.15604/ejbm.2015.03.04.002.

# Impact of Dividend Policy on Stock Price Volatility in Colombo Stock Exchange

J. L.A. Dakshini, D.B.P.H. Dissabandara
*dakshini.jayasekara@gmail.com, dissa@sjp.ac.lk*

**Keywords:** Dividend Policy, Dividend Payout Ratio (DPR), Dividend Yield (DY), Stock Price Volatility (SPV), Breusch-Pagan Test

## Introduction

In Corporate Finance, Dividend Policy means the decision of the firm to whether payout earnings as dividends or retain them for reinvestment in the firm. But dividend policy is a crucial element to both shareholders and the company. For investors dividend policy is not only a simple way of income but also it is a way to assess the company in an investment perspective. Dividend policy implied by the two measures that is the dividend payout ratio and dividend yield.

SPV means the rate at which the price of a stock increase or decrease over a particular period. Most of the investors are risk averse and they try to attain higher gain with the least risk level. This implies that the risk of their investment is important for investors. This affects the shareholders. Often higher SPV means higher risk or higher the chances of a gain or loss in the short run. Since the traders observe the share prices closely, they are concerned with the decisions taken regarding the dividend policy. These decisions by the traders leads to fluctuations in the share prices. Volatility of stock price is related with the variance of a security price. Since the dividend policy implies the performance of the company, the fluctuations in the share prices indicate the systematic risk bearded by the ordinary share investors. According to (Guo, 2002), the systematic risk of the investments is important to the shareholders because they are risk averse by nature and it measures the company created risk that they are exposed to. And the positive change in the stock prices tend to occur as a result of an increase in dividends payout ratio and vice versa. When taking the form of efficiency under consideration above can be explained by, when firms increase the dividends to shareholders, they do that after funding all the projects that will earn higher return to the firm or that have positive net present value.

There are number of theories that explain the influence of Corporate Dividend Policies on Stock Prices. They can be stated as in (Modigliani & Miller, 1961), they proposed dividend policy is irrelevant to the shareholders, that a company's dividend payment do not add value to company's stock price. Bird in hand theory by (Al-Kuwari, 2009), Agency Cost and the Free Cashflow Theory are some other theories relating to dividends.

The significance of the study is, in this study it analyzes the debatable topic of whether the dividend policy has an impact on stock price volatility using more accurate method by (Yang & Zhang, 2000) and the sample consists of companies that belong to all the industries, not used specified industries compared to previous studies regarding this subject.

## Literature review

The impact of the dividend policy on share price volatility have been an unresolved problem for many decades. Due to this issue many studies have been carried out by many researchers regarding the impact of the dividend policy on share price volatility. Initially in 1985 Baker conducted a study where the findings stated that the dividend policy has influence on the share prices volatility and this study supports the dividend relevance theory of M&M.

The results of the study by (Baskin, 1989) revealed that there is a negative relationship between the share price volatility and DY. Such results indicate that firms with higher DYs are associated with lower risk. And the results added as he reported that if DY increases by 1 %, the annual standard deviation of stock price movement decreases by 2.5% (Baskin, 1989). Furthermore, Baskin emphasized that dividends are not just a set of data flow into the market but are a sign of market sureness to the company's performance. The study of Baskin dividend policy both as direct cause of common SPV and as an indirect indicator of other factors. His tests using number of controls suggested that DY is not a mere proxy, but dividend per se may influence stock market risk. Based on the above-mentioned opinions it can be stated that the dividend policy expressively impacts the volatility of the share prices. As the literature suggests the relationship between the dividend policy and the share price volatility remain to be a puzzle and debatable.

When considering the Sri Lankan context previous studies have not considered the closing drifts of the share prices. Since the Sri Lankan share market is very active and considerably volatile the drift values should be considered for the calculations of the share prices to be accurate and more efficient. Thus, the purpose of this study is to fulfill the above-mentioned gap in the Sri Lankan context.

## Problem Statement and Research Questions

Considering the literature, the problem statement can be stated as “Whether the Dividends Policy has an Impact on the SPV in Sri Lankan Stock Market? And What is the relationship between dividend policy variables and SPV?”

Following research questions arise from the above research questions. Those include, “what is the relationship between DY and SPV? What is the relationship between dividend payout and SPV? What is the relationship between size of the firm and SPV? What is the relationship between asset growth and SPV?”

## Objectives

Main Objective: To examine the relationship between dividend policy and SPV in Sri Lankan stock market.

Sub Objectives are to examining the relationship between DY and SPV, to examining the relationship between dividend payout and SPV, to examining the relationship between size of the firm and SPV, to examining the relationship between asset growth and SPV.

## Research Methodology

Variables in the study include- dependent variable is the Stock Price Volatility- Stock price volatility is the rate at which the stock prices increase or decrease for a particular period. The method by (Yang & Zhang, 2000) is used to calculate the SPV that is considered to be most accurate method to calculate SPV. Independent Variables are DPR- The potion that is given back to the shareholders from the company earnings. Calculated by dividing dividend per share by earnings per share. And DY- A financial ratio that calculates how much a company pays out in dividends each year relatively to its share prices. Calculated by dividing the annual dividend per share by market price per share. Control Variables are Size of the company- This is measured by total assets of the company. Greater the assets, greater the size of the company. Calculated by using the natural log value of total assets. And Asset Growth- Higher the asset growth in a company, higher the need for funds on expansion of company. Calculated by using the change in the total assets in two consecutive years of a company as a percentage of total assets in the previous year.

Data were collected using the annual reports of the selected sample companies listed on the CSE for the period from 2011 to 2020. For analysis techniques initially using the summary statistics, outliers were identified. Then using the unit root test, the stationarity of the data is tested. Then using three diagnostic tests, i.e., using the normality test the normal distribution of the observations are tested, using the VIF test the multicollinearity is tested and using the Breusch-Pagan / Cook-Weisberg test the heteroscedasticity is tested. Then using the correlation analysis, the correlation between the variables and their significance levels are tested. Finally, using the test results of Hausman test, Random Effect Model was selected for panel data regression analysis.

## Findings and Conclusions

Based on the empirical evidence it can be stated that the dividends are affecting the SPV in the listed firms in Sri Lanka, and it goes in line with the bird in hand theory and signaling of dividend policy. As per the results it is contrary to the M&M preposition and that the dividend policy depicts relevance in affecting the stock prices in the listed firms in Sri Lanka in the sample period. Since the dividend policy has an impact on the SPV the findings of the study support the relevance study.

There are four main hypotheses tested in the study. They are that the DPR has positive impact on SPV, the DY has a negative impact on the SPV, the size of the company has a negative impact on SPV, and the asset growth has a positive impact on SPV. When considering the research objectives of the study the results obtained are in line with the objectives.

The Random Effect Model of panel regression results stated that there is a weak association between the DPR and DY with SPV. And when considering the control variables, the size of the company and the asset growth has a significant impact on SPV. DPR has a positive impact on SPV, DY has a negative impact on SPV, size of the company has negative impact on SPV, and asset growth has a positive impact on SPV. When considering the overall model, the fitness of the model was tested using the F statistic, and since the value was less than 0.05 significance level it can be concluded that the model was fit to use. And according to the R squared the explanatory variables explains 21.4% of the behavior of the dependent variable.

Control variables that are the size of the company and the asset growth has significant impact to the SPV. The empirical findings of the study indicated that there is a significant negative relationship between the size of the company and the SPV. That is larger the company, lower the SPV. Large firms are generally more profitable, stable, and financially sound and therefore, those companies experience lower volatility in stock prices. Also, the empirical findings emphasize that there is a significant and positive relationship between the asset growth and the SPV. That is higher the asset growth of a company, higher the SPV. This can be indicated that larger the growth opportunities of a company, larger the SPV.

Since both the investors and the company management are concerned about the behaviors of the stock prices, they should not only consider the dividend policy, rather they have to consider the other factors that affect the SPV other than the dividend policy variables.

## References

Al-Kuwari, D., 2009. Determinants of the Dividend Policy of Companies Listed on Emerging Stock Exchanges: The Case of the Gulf Cooperation Council (GCC) Countries. *Global Economy & Finance Journal, Vol. 2, No. 2, pp. 38-63, September 2009,* p. 26.

Baker, K., Farrelly, H. & Edelman, B., 1985. A Survey of Management Views on Dividend Policy. Financial Management. *Journal of Financial,* pp. 78-84.

Baskin, J., 1989. Dividend Policy and the Volatility of Common Stock. *Journal of Portfolio Management,,* Volume vol. 3.

Guo, H., 2002. Stock Market Returns, Volatility, and Future Output. In: s.l.:s.n., p. 12.

Modigliani, F. & M., 1961. Dividend Policy, Growth, and the Valuation of Shares. *The University of Chicago Press Journals,* Volume Vol. 34, p. October.

Yang, D. & Zhang, Q., 2000. Drift-Independent Volatility Estimation Based on High, Low, Open, and Close Prices. *Journal of Business,* Volume vol. 73, no. 3, pp. pp. 477-492.

# The Impact of Accounting and Macroeconomic variables on Share Prices: Evidence from Sri Lanka

K.A.P.U. Dharmathilaka P.A.N.S. Anuradha, I G.S.M. Illubethenne
*pipunidharmathilake@gmail.com, anuradha@sjp.ac.lk, samyaigsm@sjp.ac.lk*

**Keywords**: Accounting Variables, Macroeconomics Variables, Share Price, Colombo Stock Exchange

## Introduction

The Share price is a significant factor in the Sri Lankan economy. Since there are so many interested parties like investors, policymakers, portfolio managers, and stockbrokers, who are keen on the share price. Investors need to have knowledge and awareness about the factors which determine share price inorder to make the optimal investment decision in shares. (Sharif et al. 2015). Thus, it is really important to find out, what factors are determining the share prices in the stock market. Numerous studies can be identified which have been conducted to find out the factors which affect determine the share prices.

## Literature review

There are plenty of different empirical studies that have been conducted over different periods across the different markets to identify the factors that affect stock prices. The previous literature suggests that thereare so many accounting and macroeconomic factors that influence deciding the share price in the stock market. Such as earnings per share, dividend per share, book value per share (Menike and Prabath, 2014), return on investment (Gunaratne and Anuradha, 2017), price earnings ratio (Enow and Brijlal, 2016), dividend payout ratio (Nautiyal and Kavidayal, 2018), interest rate, inflation rate, exchange rate (Pal and Mittal, 2011), gross domestic production (Peiró, 2015), money supply (Fernando, 2018). According to the stated literature, some of the studies were conducted considering only accounting variables and share price (Glezakos et al.,2012; Wang, 2013; Osundina et al.,2016; Enow and Brijlal,2016; Manike and Prabath,2014; Gunaratne and Anuradha,2017) and where as some others have conducted studies by only focusing on the macroeconomics variables and share price (Pal and Mittal,2011; Peiró,2016; Gunasekarage et al.,2004; Balagobei,2017; Fernando,2017) And also, there are studies can be seen conducted incorporating both accounting and macroeconomics variables considering only the share prices in the banking industry (Narayan et al.,2014; Arshad et al.,2015; Mohammad,2014; AL- Shubiri,2010). However, there are very few studies carried out incorporating both accounting and macroeconomic variables in one model and at the same time considering the share price of all industry groups in the sharemarket. Therefore, the main objective of this research study is to cover that research gap.

## Objectives of the study

The researcher investigates the joint influence of accounting and macroeconomics variables on the shareprice of the companies listed in the CSE. Subsequently, objectives are;
To examine the influence of Accounting and Macroeconomic variables on share price of CSE in Sri Lanka empirically
To examine the influence of accounting variables on share price of the companies listed in CSE
To examine the influence of macroeconomic variables on share price of the companies listed inCSE
To examine the impact that accounting and macroeconomic variables have on the share price of the companies listed in CSE.

## Methodology

A sample of 50 non-financial companies listed in the CSE is examined using simple and multiple regression for ten years from 2011 to 2020 and data were analyzed using the EVIEWS 8.0 software. The study employed earnings per share (EPS), dividend per share (DPS), net asset per share (NAPS) andsize of the firm (SOTF) as accounting independent variables while using interest rate (IR), inflation rate (IR), an exchange rate (ER) and gross domestic product (GDP) as macroeconomic independent variables where market price per share (MPS) was the dependent variable.

The first objective has been achieved by finding the accounting and macroeconomic variables which affected the share prices of the companies listed in CSE empirically. To achieve the second objective simple regression model, I and regression model II have been developed to test the direct impact of eachindependent variable on the share price. In achieving 4th objective multiple regression model III has beenapplied.

***Regression model I***
Share price = *f* (Accounting variables)

$$\mathbf{MPS_{it}} = \boldsymbol{\alpha} + \boldsymbol{\beta 1}EPS_{it} + \boldsymbol{\beta 2}DPS_{it} + \boldsymbol{\beta 3}NAPS_{it} + \boldsymbol{\beta 4}SOFT_{it} + \boldsymbol{\mu_{it}}$$

***Regression model II***
Share price = *f* (Macroeconomic variables)

$$\mathbf{MPS_{it}} = \boldsymbol{\alpha} + \boldsymbol{\beta 5}IR_{it} + \boldsymbol{\beta 6}INF_{it} + \boldsymbol{\beta 7}ER_{it} + \boldsymbol{\beta 8}GDP_{it} + \boldsymbol{\mu_{it}}$$

***Multiple regression model III***
Share price = *f* (Accounting variables, Macroeconomic variables)

$$\mathbf{MPS_{it}} = \boldsymbol{\alpha} + \boldsymbol{\beta 1}EPS_{it} + \boldsymbol{\beta 2}DPS_{it} + \boldsymbol{\beta 3}NAPS_{it} + \boldsymbol{\beta 4}SOFT_{it} + \boldsymbol{\beta 5}IR_{it} + \boldsymbol{\beta 6}INF_{it} + \boldsymbol{\beta 7}ER_{it} + \boldsymbol{\beta 8}GDP_{it} + \boldsymbol{\mu_{it}}$$

The data used in this study were analyzed using EVIEWS 8.0. And simple regression models, multiple regression models, and correlation analysis was used. The model is tested with the assumptions of the OLS method and the Hausman specification test and VIF test have also been performed before comingup with the final results.

## Findings

The findings of the three multiple regression models are explained as follows.

***Model 01***: As per the results of the Hausman specification test, the fixed effect model was selected to explain the impact of accounting variables on the share price. Based on the regression results overall R

-squared value =0.8819 illustrates that around 88.19% of the total variability of the share price is explained by the accounting variables included in the model. The value of F (62.78) = 0.0000 is at a 1% level of significance, which explains the model is goodness fit. And it can conclude that, Earningsper share ($\beta$ = 0.78, p = 0.0000), Dividend per share ($\beta$ = 0.83, p = 0.0000), Net assets per share ($\beta$ = 0.19, p = 0.0000) and size of the firm ($\beta$ = 71.53, p = 0.0000) have significant positive influence on share price.

***Model 02***: As per the results of Hausman specification test, the random effect model was selected to explain the impact of macroeconomic variables on share price. Based on the regression results, it can conclude that, interest rate ($\beta$ = -3.24, p = 0.3382), Inflation rate ($\beta$ = 2.46, p = 0.4696), exchange rate ($\beta$ = -0.44, p = 0.3563) and GDP ($\beta$ = -7.53, p = 0.0525) have not shown any significant relationship with share price.

***Model 03***: As per the results of Hausman specification test, the random effect model was selected to explain the impact of both accounting and macroeconomic variables on share price. Based on the regression results, overall R -squared value =0.6210 illustrates that around 62.10% of the total variability of share price is explained by all accounting and macroeconomic variables included in the model. The value of F (43.09) = 0.0000 is at a 1% level of significance, which explains the model is goodness fit. And it can conclude that, Earnings per share ($\beta$ = 0.64, p = 0.0000), Dividend per share ($\beta$ = 0.1.40, p = 0.0002), Net assts per share ($\beta$ = 0.43, p = 0.0000) and size of the firm ($\beta$ = 36.03 p = 0.0000) have significant positive influence on share price. But Interest rate ($\beta$ = -3.85, p = 0.1679), Inflation rate ($\beta$ = -1.58, p = 0.5723), exchange rate ($\beta$ = -0.53, p =0.1717) and GDP ($\beta$ = -2.31, p = 0.4715) have not shown any significant relationship with share price.

## Conclusion

Based on the findings of the study, it is concluded that earnings per share, dividend per share, net assetsper share, and size of the firm have a significant positive impact on the share price in Sri Lankan context. However, interest rate, inflation rate, exchange rate, and GDP have an insignificant negative influenceon the share price. This study is vital for policymakers, investors, and many other stakeholders in order to make better investment decisions. Therefore, this study contributes to a better understanding of factors determining the share price of non-financial listing companies of CSE in Sri Lanka. This study can be further extended by adding additional accounting and macroeconomic variables in different countries by considering multiple geographical regions in order to examine how they would impact the share price in different contexts.

## References

Enow, S. and Brijlal, P., 2016. Determinants of Share Prices: The Case of Listed Firms on Johannesburg Stock Exchange. Journal of Accounting and Management, 6(1).

Gunaratne, Y. and Anuradha, P.A.N.S., 2017. Value Relevance of Accounting Information in Explaining Stock Returns in Sri Lanka. International Journal of Business and Management, 12(10), p.223.

Manike G. P. D., M. and Prabath, U., 2014. The Impact of Accounting Variables on Stock Price: Evidence from the Colombo Stock Exchange, Sri Lanka. International Journal of Business and Management, 9(5).

Nautiyal, N. and Kavidayal, P., 2018. Analysis of Institutional Factors Affecting Share Prices: The Case of National Stock Exchange. Global Business Review, 19(3), pp.707-721

Peiró, A., 2016. Stock prices and macroeconomic factors: Some European evidence. International Review of Economics & Finance, 41, pp.287-294.

Fernando, A., 2017. Macroeconomic Impact on Stock Market Returns and Volatility: Evidence from Sri Lanka. SSRN Electronic Journal

Glezakos, M., Mylonakis, J. and Kafouros, C., 2012. The Impact of Accounting Information on Stock Prices: Evidence from the Athens Stock Exchange. International Journal of Economics and Finance, 4(2)

Balagobei, S., 2017. Macroeconomic Variables and Stock Market Returns in Sri Lanka. Asian Journal of Finance & Accounting, 9(2), p.206

Narayan, P., Narayan, S. and Singh, H., 2014. The Determinants of Stock Prices: New Evidence from the Indian Banking Sector. Emerging Markets Finance and Trade, 50(2), pp.5-15

Arshad, Z., Arshaad, A., Yousaf, S. and Jamil, S., 2015. Determinants of Share Prices of listed Commercial Banks in Pakistan. Journal of Economics and Finance, 6(2), pp.56-64

AL- Shubiri, F., 2010. Analysis the Determinants of Market Stock Price Movements: An Empirical Study of Jordanian Commercial Banks. International Journal of Business

# Determinants of Firm Performance: A Study of Listed Manufacturing Firms in Sri Lanka

R.M.C.P. Rathnayaka, Wasantha Perera
*champrabhu123@gmail.com, wasantha.perera@sjp.ac.lk*

**Keywords:** Firm Performance, Firm Specific Factors, Macroeconomic Factors, Manufacturing Firms, Hausman Test

## Introduction

The purpose of this paper is to inspect the Determinants of Firm Performance. There are many factors influence to firm performance and in this study focus on impact of the firm specific and macroeconomic factors on the Firm performance of the listed manufacturing firms in Sri Lanka.

Manufacturing is the creation or production of goods with the help of equipment, labor, machines, tools, and chemical or biological processing or formulation. It is the essence of secondary sector of the economy and manufacturing sector started to play a key role in the Sri Lankan economy in terms of generating high levels of production, foreign exchange earnings and employment.

There are many ways to measure the firm performance. Such as Accounting based measurements and market-based measurements. (Ebrahim Mohammed Al-Matari, Abdullah Kaid Al-Swidi and Faudziah Hanim Bt Fadzil -2014). The accounting-based measurement indicators are Return on Assets (ROA), Return on Equity (ROE), Return on Sales (ROS), Return on Investment (ROI), Profit Margin (PM), Operating Cash Flow (OCF) Earnings per Share (EPS) etc. The second type of measurement is the market-based measurement. Such as Tobin's Q, Market Value Added (MVA), Market-to-Book Value (MTBV), Abnormal Returns; Annual stock return (RET), Dividend Yield (DY), Price-Earnings Ratio (PE) etc.

Firm performance decides by many factors and mainly macro-economic factors and firm specific factors. Firm specific and macroeconomic factors affect the performance of the firm.

## Literature Review

Several authors have studied the impact of macro-economic factors or firm specific factors on firm performance and some of authors have examined the firm specific and macro-economic factors and their impact on firm performance and some authors examined the related theories for macro-economic, firm specific factors and firm performance.

System theory explains the interaction of the external environment with the performance of the firm. Resource Based View to explain firm characteristics determine the outcome of the firm. (Chinedu Francis Egbunike, 2018). Structure conduct performance theory was broadly used in the industrial organizational literature in order to describe the profitability of a company.

Maja Pervan, Ivica Pervan & Marijana Ćurak (2019), Simiyu and Ngile (2015), Chinedu Francis Egbunike and Chinedu Uchenna Okerekeoti (2018), Swagatika Nanda and Ajaya Panda (2017), Ariyadasa (2017) , Anushiya. A & Vani.S (2016), Owolabi (2017) and many other authors investigates the determinants of firm performance of different industries and had found different results but concluded that simply firm specific factors are more influence on firm performance than macro-economic factors.

According to literature review, many scholars examined the determinants of firm performance for various industries and most studies investigates profitability of the firms in the Sri Lanka. And few researchers used macro-economic factors for their study and investigates manufacturing firm's performance. So that in the study investigates determinants of macro and firm specific factors on listed manufacturing firms' performance in Sri Lanka. In this study researcher use Tobin's Q which is one of marked based performance measurement and ROA (profitability and accounting based measurement) to measure firm performance due to few researchers use Tobin's Q their study and to give novelty to this study and the researcher use 3 macro-economic factors such as Exchange rate, GDP growth rate and Inflation and 3 firm specific factors leverage, liquidity and Firm size based on the literature review due to significance of the factors.

## Problem Statement and Research Questions

### Problem Statement

This study therefore seeks to fill above research gap by answering the following question:

What is the impact of firm specific and macroeconomic variables on the Firm performance (ROA and Tobin's Q) of listed manufacturing firms in Sri Lanka?

### Research questions

- What are the measurements of firm performance?
- What are the firm specific factors and macro-economic factors that affect to the firm performance of the listed manufacturing firms in Sri Lanka?
- How does the firm specific and macroeconomic variables impact on the firm performance of listed manufacturing firms in Sri Lanka?
- How to find the relationship between firm specific factors and macroeconomic factors with the firm performance of the listed manufacturing firms in Sri Lanka?

## Objectives

The main objective of the study is to investigate the determinants of firm performance in Listed Manufacturing firms in Sri Lanka.

Sub objectives are given below.

Identify the measurements of firm performance, identify firm specific factors that affect to the firm performance, identify macroeconomic factors that affect to the firm performance and identify the Impact of firm specific and macroeconomic variables on the firm performance.
To establish a statistical relationship between the firm specific and macroeconomics factors, and the firm performance of the listed manufacturing firms in Sri Lanka with the magnitude and direction of each independent variable with dependent variable.

## Research Methodology

The 6 variables are considered in the study to analyze the internal and external profitability determinants of listed manufacturing firms in Sri Lanka. The two variables are used as dependent variables and the rest of the variables are considered as explanatory variables. ROA and Tobin's Q are used as the dependent variables while using Exchange rate, GDP growth, Inflation rate as Macroeconomic independent variables and leverage ratio, liquidity ratio and firm size (Log A) as firm specific independent variables.

Secondary sources were used to the study. Macroeconomic secondary data were taken from the CBSL website and firm specific factors were taken from annual reports from 2015-2021 period of each manufacturing firms.

The study made use of the STATA software to analysis of the data. Balanced panel data used in analyzing the statistical results and built up 2 regression output ROA and Tobin's Q separately. As suggested by the OLS regression, stationarity test, Fixed effect, Random effect, and Hausman Test, multicollinearity test, heteroskedasticity test and auto correlation were employed in arriving at conclusions.

## Findings and Conclusions

The study employed ROA and Tobin's Q as proxies for firm performance. The Firm performance of listed manufacturing firms as measured by ROA was found to be positively correlated with GDP growth rate, Current ratio and Firm size. Exchange rate, Inflation rate and leverage ratio and liquidity ratio found to be negatively correlated with ROA. On the other hand, Tobin's Q was found to be positively correlated with Inflation, Current ratio and Firm size while Exchange rate, GDP growth, leverage ratio and liquidity ratio indicated a negative correlation with Tobin's Q. But Exchange rate, Debt to equity, Current ratio and firm size (Log A) only were significant in explaining their impact on firms' performance (ROA and Tobin's Q) of listed manufacturing firms in Sri Lanka and we concluded that **firm specific factors are more influence on firm performance than macro-economic factors in listed manufacturing firms in Sri Lanka.**

## References

Anushiya. A & Vani S (2016), "Impact of economic factors on profitability, Evidence from Listed manufacturing companies in Sri Lanka", Proceeding of International conference on contemporary management (ICCM-2016), pp 01-12.

Chinedu Francis Egbunike (2018), "Macroeconomic factors, firm characteristics and financial performance: A study of selected quoted manufacturing firms in Nigeria", Asian Journal of Accounting Research

Abdullah Kaid Al-Swidi, Ebrahim Mohammed Al-Matari, Faudziah Hanim Bt Fadzil (2014), "The Measurements of Firm Performance's Dimensions", Asian Journal of Finance & Accounting.

Maja Pervan, Ivica Pervan & Marijana Ćurak (2019), "Determinants of firm profitability in the Croatian manufacturing industry: evidence from dynamic panel analysis", Economic Research, VOL. 32, NO. 1, 968–981.

Swagatika Nanda (2017), "The determinants of corporate profitability: an investigation of Indian manufacturing firms", International Journal of Emerging Markets.

# Impact of Lunar Cycle on Stock Returns and Volume

E.M.B Dabare, Chandana Gunathilaka
*manojbhagya17@gmail.com, Chandana@sjp.ac.lk*

**Keywords:** Lunar Cycle, Stock Returns

## Introduction

Humans had a legendary belief from ancient times that the moon can affect human behavior. It has a far-back history that brings us to ancient Greece and Rome. The term "lunacy" is derived from word Latin word "Luna", the goddess of the moon. Not only the myth-related ideas from ancient suggest that humanity is being affected by the lunar cycle. Several of the calendars are based upon the motion of the moon. In other words, phases of the moon. It reveals that the moon logically influences human behavior by also deciding the festivals and holidays of ancient tribes. Moon's effect on humans will lead to the decision-making process of humans in the financial market. Behavioral finance provides the foundation for this aspect. Behavioral finance relationship for investor behavior of financial market link as a chain. The first link is oriented towards explaining the cognitive factors and emotional attributes of a human. The next step is related to investors' cognitive factors and biases in their process of making decisions in the financial market. The significance of this study is it's providing quantitative analysis and results on how the moon impacts stock market volume and return.

## Literature Review

Moon Phases, Mood, and Stock Market Return: International Evidence study considers the moon as an influential source of energy that is linked with human life's cycle. The beginning of new life development and conception of hope indicate by the new moon and the full moon refers to the beginning of growth and production. So, the relationship between moon phases' implication on human mood as well as investor behavior is widely accepted. In addition, it was discovered that the lunar effect has a significant influence on the January and Monday effects (Phases, 2013). They assumed that the lunar effect was independent of the January effect, weekday effect (Hla et al., 2015), calendar month effect, and holiday effect (Yuan et al., 2006)

According to (Park & Sela, 2018) financial decision-making is a complex and sophisticated activity that requires deep and thorough thinking to make correct decisions that are related to the financial aspect. Usually, emotions affect human behavior, and emotion can also affect the human decision-making process, such as investment and trading. (Peterson, 2007) argued that mood, attitude, and emotion affect financial decisions making and financial gains or losses rely on the investors' behavior.

Lunar phases and stock return volatility -The study believe that the lunar cycle may impact the behavior of human drawing back to the time of ancient Greece and Rome. Though technology and science have become major exploring methods in a contemporary context the legend of the moon's effect on human behavior remains as it is. Because of that in this study, they have adopted a behavioral finance point of view to determine the relationship between the lunar cycle and investor behavior. More precisely this analysis is based on the stock market behavior in Taiwan

Even though prevailing literature on the moon effect context is lacking, those provide empirical findings on the lunar cycle impact on return and volume of the stock market. However, its hard-to-find moon effect on the stock market in the Sri Lankan context. Therefore, this study expects to fill the research gap on the moon effect in the Sri Lankan context.

## Problem

Through this study, the expectation is to deliver clear empirical results based on the quantitative aspect which goes beyond the boundaries of the qualitative approach. Moon phases of each country may affect stock market fluctuation in different ways. This scenario is enthusiastic because the lunar cycle directs the Through this study the expectation is to deliver clear empirical results based on the quantitative aspect which goes beyond the boundaries of the qualitative approach. Moon phases of each country may affect stock market fluctuation in different ways. This scenario is enthusiastic because the lunar cycle directs the stock market return and volume by different methods. Because investors always try to maximize their investment amount via the share market investment and returns of share market linked with share market decisions may contradict. Moon effect on investor cognitive factors and psychology will direct trading decisions in different ways which result in multiple ways of influencing. From a list of many research studies that tend to determine the lunar effect on human behavior and the stock market, the research problem may highlight because this study is focused on the Sri Lanka context and as well as Asian region.

## Methods

In the study, two moon phases are analyzed, full and new moon. These variables are dummy variables, representing one (1) for a full moon day and zero otherwise. Similarly, one (1) for New Moon and zero otherwise. The raw data for the Moon Phases were obtained from the Timeanddate.com website, and the stock market return and volume data were obtained from relevant stock market reports. It means that volume and return data are gathered from the country's stock exchange from 2010 to 2021 in four countries. In this study, the Least Square model was used for analysis. This research study selected four Asian countries namely. Sri Lanka, Pakistan, Thailand, and Singapore.

## Findings and Conclusions

The lunar cycle impact on the stock market has been analyzed separately in each country. The main objective of this study is to find the lunar effect on stock market return and volume. Output generated through regression reveals that both full moon and new moon impact significantly on stock market return of Sr Lanka and Pakistan. And also, the full moon impacts significantly on the stock market volume of Pakistan while the stock market volume of Sri Lanka is impacted by New Moon.

| Moon Phases and stock returns | | | | | | Moon Phases and stock Volume | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | C<br>P-value | FM<br>P-Value | NM<br>P-Value | $R^2$ | C<br>P-value | FM<br>P-value | NM<br>P-value | $R^2$ |
| SL | FM | -0.0254<br>0.0000 | 0.0014<br>0.0000 | | 0.0283 | 17.2768<br>0.0000 | 0.0025<br>0.2842 | | 0.0283 |
| | NM | -0.0253<br>0.0000 | | 0.0014<br>0.0000 | 0.0282 | 17.2256<br>0.0000 | | 0.0063<br>0.0063 | |
| Pak | FM | -0.0499<br>0.0000 | 0.0027<br>0.0000 | | 0.0249 | 18.4306<br>0.0000 | 0.0043<br>0.0000 | | 0.0035 |
| | NM | -0.0499<br>0.0000 | | 0.0027<br>0.0000 | 0.0249 | 18.4846<br>0.0000 | | 0.0007<br>0.6020 | |
| Sin | FM | -0.0001<br>0.9889 | 1.3E-05<br>0.9797 | | 0.0000 | 19.5042<br>0.0000 | 0.0012<br>0.1662 | | 0.0006 |
| | NM | -0.0011<br>0.9137 | | 6.3E-05<br>0.9046 | 0.0000 | -0.0006<br>0.9216 | | 0.0001<br>0.8817 | 0.0000 |
| Thai | FM | -0.0006<br>0.9216 | 0.0001<br>0.8817 | | 0.0000 | 22.2085<br>0.0000 | 0.0028<br>0.0147 | | 0.0020 |
| | NM | -0.0009<br>0.8827 | | 0.0001<br>0.8431 | 0.0000 | 22.2209<br>0.0000 | | 0.0016<br>0.1509 | 0.0007 |

## Reference


Hla, D.T., Gunathilaka, C., and Isa, A.H.M. (2015) Day-of-the-week effect: An enduring anomaly in bursa Malaysia, IUP Journal of Applied Finance, 21 (4), 38-50.

Park, J. J., & Sela, A. (2018). Not my type: Why effective decision-makers are reluctant to make financial decisions. *Journal of Consumer Research*, *45*(2), 298–319. https://doi.org/10.1093/jcr/ucx122

Peterson, R. L. (2007). Affect and Financial Decision-Making: How Neuroscience Can Inform Market Participants. *Journal of Behavioral Finance*, *8*(2), 70–78. https://doi.org/10.1080/15427560701377448

Phases, M. (2013). *Journal of Emerging Market*. https://doi.org/10.1177/0972652712473405

Yuan, K., Zheng, L., & Zhu, Q. (2006). Are investors moonstruck? Lunar phases and stock returns. *Journal of Empirical Finance*, *13*(1), 1–23. https://doi.org/10.1016/j.jempfin.2005.06.001

# Financial Literacy and Retirement Preparedness of Private Sector Employees in Western Province Sri Lanka

Janmi Perera, R.P.C.R. Rajapakse
*janmiperera1997@gmail.com, champa@sjp.ac.lk*

**Keywords**: Financial Literacy, Pension Literacy, Retirement Preparedness, Employee Provident Fund, Demographic Factors

## Introduction

Sri Lanka's aging population has been increasing compared to other south Asian countries. (E.L. Sunethra J. Perera 2012). Some researchers have revealed that aging population in Sri Lanka will be increased in coming four decades by 04 million. (De Silva and De Silva 2015) This is a signal about the future aging population related issues. Sri Lanka 's government facilitate a Non-contributory pension fund and a contributory pension fund to ensure the wellbeing of employee retirement life. Employee provident fund (EPF) was established as a mandatory contribution retirement scheme for private and semigovernment sector that do not enjoy pension benefits. Main objective of this fund is to assure financial stability to the employee in the retirement stage of life. But most of the private sector employees cannot reach that objective because of poor retirement preparedness. Many researchers argue that this happens because of lack of financial knowledge. And also, some researchers argue that it happens because of lack of pension literacy and financial literacy does not affect the retirement preparedness. So, in this research researcher focuses on the relationship between financial and pension literacy with retirement preparedness. And the researcher has analyzed the demographic factors that affect to the retirement preparedness.

## Problem Statement and Research Question:

### Problem statement

In Sri Lanka majority are employed in the private sector. They start their retirement lifewhen they are 55-60 years old. But there are no government organized pension schemes for private sector employees in Sri Lanka. They are eligible for the EPF established by the legislation in Sri Lanka.

The main objective of the EPF is to assure financial stability to the employee in the retirement stage of life. But the question is, are employees adequately knowledgeable about this EPF and are they properly using their EPF to get real objective of this benefit.

Most of the people in their old age have poor quality in their lives due to the mismanagement of their EPF. Majority of the private sector employees suffer from this problem because of poor planning of their retirement life when they were young and able to work. Public sector employees are eligible for monthly basis non-contributory pension scheme, and they get that monthly allowance while they are alive. When we look around society, we can see that retired personswho worked in public sector spend a somewhat high-quality life when they retire than a person who has worked in the private sector.

So, preparedness of retirement life is very much important for private sector employees to spend a quality retirement life.

When talking about retirement preparedness financial literacy and pension literacy play an important role. Existing literature reveals that financial literacy and pension literacy can influence the retirement preparedness of the employees. (Lusardi 2007; Olivia S Mitchell & Lusadi 2011; Van Rooij et al.,2012/ (Ekerdt, 2002; Liebman & Luttmer, 2015; Mitchell, 1988/ Ghana (Adeabah 2020). Many researchers have conducted research focusing on various countries and analyzed the relationship between financial literacy and retirement preparedness of employees. Most of those studies show a positive relationship between financial literacy/pension literacy and retirement planning. As there is not much research studies done of this type based on private sector employees in Sri Lanka, the problem focused on this study is the influence of financial literacy/pension literacy on retirement planning of private sector employee in western province, Sri Lanka.

## Research Question/s

- What is the relationship between financial literacy and retirement preparedness?
- What is the relationship between pension literacy and retirement preparedness?
- Does Demographic factors have an influence on retirement preparedness?

## Objective

### Main objectives:

To identify Whether Financial literacy have positive relationship with retirement preparedness.

To identify whether pension literacy have positive relationship with Retirement preparedness.

### Sub objectives:

To identify whether demographic Factor have positive relationship with Retirement preparedness.

## Research Methodology

This research study is based on the quantitative approach. Primary data has been used in this study. To gather primary data researcher has used structured online questionnaire. This was conducted via online because physical meetings were restricted due to the covid 19 pandemic. The questionnaire was prepared only in the English language. The population of this study is private sector employees in western province Sri Lanka. But due do practical limitations of evaluating whole population, researcher used convenient sampling method to collect the data from 150 employees. Here collected responses initially analyzed through Excel and advance analysis was done by using STATA.

## Findings and Conclusion

By analyzing the gathered data researcher identified that financial literacy has a statistically significant positive relationship with retirement preparedness with subjective and objective measures. And also, researcher found that pension literacy also has a statistically significant positive relationship with subjective and objective measures. When considering the demographic factors age, gender and marital status of the respondents have a statistically significant positive relationship with Subjective measure of retirement preparedness. And only age and monthly income has a statistically significant positive relationship with objective measures.

## References

Kumari, D.T., 2020. The Impact of Financial Literacy on Investment Decisions: With Special Reference to Undergraduates in Western Province, Sri Lanka. Asian Journal of Contemporary Education, 4(2), pp.110-126.

Lusardi, A. and Mitchell, O.S., 2014. The economic importance of financial literacy: Theory and evidence.Journal of economic literature, 52(1), pp.5-44.

Rodrigo, T.L., 2021. Financial Literacy and Retirement Preparedness in Sri Lanka: Evidence from the Private Sector Employees.

Bucher-Koenen, T. and Lusardi, A., 2011. Financial literacy and retirement planning in Germany. Journalof Pension Economics & Finance, 10(4), pp.565-584.

Sekaran, U. and Bougie, R., 2016. Research methods for business: A skill building approach. john wiley &sons.

# Impact of Corporate Social Sustainability on Shareholder Wealth of Listed Companies Under Food, Beverage and Tobacco Sector in Sri Lanka

P.W.Y.I. Wijesiri, Wasantha Perera
*yasodha.wijesiri@gmail.com, wasantha.perera@sjp.ac.lk*

**Keywords:** Corporate Social Sustainability, Shareholder Wealth, Colombo Stock Exchange, OLS, Method,Tobin's Q

## Introduction

### Background of the Study

There is an increase in consideration and awareness of business impact on the environment and the society at the present. A Global Guide (1992) stated that "sustainability for a business enterprise means adopting business strategies and activities that meet the needs of the enterprise and stakeholders today, while protecting, sustaining and enhancing the human and natural resources that will be needed in the future". Among the environmental, social and ecological aspect of corporate sustainability, the main focus of this study is on corporate social sustainability which simply means that concern about human within the corporation as well as beyond the company boundary when operating business activities. While consideringthe corporate social sustainability, company's primary objective should be to maximize the market value ofits stock or wealth of the shareholders according to the modern finance theory. Shareholder wealth is the aggregate value delivered on shareholders as a result of their investment in a company. In this study, it mainly focusses on food, beverage and tobacco sector which has the largely contributed to the gross domestic production (GDP) the highest market share. Therefore, they have a greater responsibility to serve the society. In the Sri Lankan context, it is still given consideration on sustainability reporting. However, Colombo stock exchange (CSE) website communicate that they hope to launch a sustainability index and it mean that consideration on sustainability aspect in Sri Lanka will be enhanced in the future. Therefore, investigating impact of corporate social sustainability on the shareholder wealth will be important to the existing literature.

### Problem Statement

Based on the reviewed literature, it is evident that the corporate social sustainability can significantly impact on the shareholder wealth. Many researchers argued that corporate social sustainability improves the firms' value / shareholder wealth. Many research findings show that companies that include sustainability into their business strategy are more likely to gain financial advantages than those who do not. The findings also reveal that such firms are more vulnerable to financial risk, particularly during a global financial crisis, which may limit their ability to generate value for shareholders in the long run. However, in the long run, the market still has a more favorable impression of sustainable businesses. (Anon., 2016)

In the Sri Lankan context, it is rare to find studies which investigated the separate impact of corporate social sustainability on the shareholder wealth of the listed food beverage and tobacco sector companies of the CSE. In Sri Lanka we are still focusing on sustainability reporting instead of measuring it. According to the CSE, they state that in their website they are planning to launch a sustainability index since 2019. However still they were unable to launch a sustainability index by now.

Therefore, this study attempts to fill this persistent research gap by investigating the Sri Lankan companies' social sustainability practices to find its impact on the shareholder wealth on listed companies under the Colombo Stock Exchange. The researcher has identified the need for considerable attention on impact of corporate social sustainability on shareholder wealth with the econometrics models. Therefore, this study sought to assess, "What is the impact of corporate social sustainability on shareholder wealth in listed food, beverage and tobacco companies of the Colombo Stock Exchange?".

## Literature Review

When study about the concept of corporate sustainability in relation to value of the firm, it has largely beenaffected by stakeholder theory, resource-based theory, and legitimacy theory (Diebecker, et al., 2017). Thestudy mainly focuses on stakeholder theory and legitimacy theory.

The volatility of stock prices of businesses which are investing in corporate sustainability is less accordingto the study done by (Przychodzen, et al., 2012). The impact of incorporating sustainability into company strategy on several areas on shareholder value generation and financial performance in the British capital market is investigated in another research study and discovered that these firms had lower BV/MV ratios, lower EVA (economic value added) ratios, and higher MVA ratios. The findings support the hypothesis

that organizations that include sustainability issues into their business operations are better equipped to leverage their resources toward higher financial performance and shareholder value generation than companies that do not. (Gómez-Bezares, et al., 2017). Another study provided evidence that high Sustainability companies outperform their peers over the long run, both in terms of stock market success and accounting performance. (Eccles, et al., 2009).

## Literature Gap

Although many studies have been conducted to establish the influence of corporate sustainability on shareholder wealth, only a few studies have investigated the impact of corporate social sustainability separately on shareholder wealth. when consider the Sri Lankan context, many research studies are interested in determining the impact of sustainability reporting on a company's financial performance. Theresearcher for this study noted that no research has been done in Sri Lanka to explore the impact of corporate social sustainability on shareholder wealth. As a result, this study aims to address a gap in the literature bylooking into Sri Lankan companies' social sustainability practices and their influence on shareholder wealthof companies listed on the Colombo stock exchange in the food, beverage, and tobacco sector.

## Research questions of the study

This study attempts to address the following research questions in order to fulfill the objectives of the research study.

Research Question One: What is the impact of corporate social sustainability on shareholder wealth/ firm value?

Research Question Two: Is there any significant relationship between corporate social sustainability and shareholder wealth/ firm value of listed companies under food, beverage, and tobacco sector in Sri Lanka?

## Objectives of the study

The main purpose of the research study is to investigate the impact of corporate social sustainability on shareholder wealth of listed companies on CSE, particularly in the food, beverage, and tobacco industry. Moreover, the objectives of the study are to emphasize the importance of social aspects within the broaderconcept of corporate sustainability, and also as social sustainability is the focus of this research, it is looking at indicators of social sustainability that affect on shareholder wealth. Additionally, the study intends to improve social sustainability awareness among investors, policymakers, academics, society, and theyounger generations.

## Methodology

This is a kind of a study that followed a deductive approach and conducted based on secondary data by taking from annual reports using a sample of 46 firms listed on the Colombo stock exchange under food, beverage and tobacco industry from the time period of 2016 to 2020.

The researcher used Tobin's Q ratio to measure the dependent variable which is the shareholder wealth.The corporate social sustainability determined by product responsibility, GRI adaptation, Equalopportunities and investment in society which are the indicators considered under social pillar of sustainability in Dow Jones Sustainability Index (DJSI), KDL index and Global Reporting Initiative(GRI) even though Sri Lanka haven't such data base. Firm size and the financial leverage wereused as control variables in the study by referring the prior studies. For the purpose of providing needed information on the variables of the research study, descriptive statistics such as mean, median, standard deviation, minimum, and maximum values were used. Further the correlation between corporate social sustainability and shareholder wealth was determined using correlation analysis and prior to the regression analysis, diagnostic tests were carried out to check the reliability and validity of the variables. The researcher used ordinary least square (OLS) regression models to investigate the impact of corporate social sustainability on the shareholder wealth of CSE listed companies under food, beverage and tobacco sector. Among the random effect model and the fixed effect model, random effect model is used based on the Hausman test to examine the impact of corporate social sustainability on the shareholder wealth of CSE listed companies.

## Findings and Conclusion

Diagnostic tests were carried out to check whether selected variables are valid and reliable for this researchanalysis and used the test of stationarity, multicollinearity test, heteroscedasticity test, omitted variables testprior to the regression analysis. From the results taken from Augmented Dickey-fuller test which are researcher derived to check stationarity of variables, showed all variables stationary at 5% level of significance other than the variables of firm size and leverage. In order to firm size and leverage to be stationary, researcher have to differentiate them and incorporate those to the initial model. According to theresults of Variance Inflation Factor, VIF value stated as 1.14, which is less than 10. It means model was free from multicollinearity error. Apart from above tests Breusch-Pagan test was conducted and the p-valueof that test stated as 0.2996 which greater than 5%. Therefore, it can be concluded as there is homoscedasticity. The omitted variable bias test carried out by the researcher and found that there is no omitted variables in the model. Therefore, it can be concluded that selected variables are valid and reliablefor use to achieve the research objective.

**Table 1: OLS Regression results**

| Tobin's Q | Coef. | St.Err. | t-value | p-value | [95% Conf | Interval] | Sig |
|---|---|---|---|---|---|---|---|
| PR | .53 | .843 | 0.63 | .53 | -2.197 | 1.136 | |
| GRI | .385 | .242 | 1.59 | .114 | -.093 | .862 | |
| EO | .024 | .226 | 3.11 | .014 | -.422 | .471 | ** |
| INVS | 0.283 | .356 | 2.73 | .007 | -.524 | .321 | *** |
| d.FSIZE | .094 | .069 | 1.36 | .177 | -.043 | .231 | |
| d.LEV | -.025 | .477 | -0.05 | .958 | -.968 | .918 | |
| Constant | 2.886 | .642 | 4.50 | 0 | 1.616 | 4.155 | *** |
| Mean dependent var | | 2.778 | SD dependent var | | 1.597 | | |
| R-squared | | 0.069 | Number of obs | | 184 | | |
| F-test | | 1.987 | Prob > F | | 0.001 | | |
| Akaike crit. (AIC) | | 408.005 | Bayesian crit. (BIC) | | 427.294 | | |

**** p<.01, ** p<.05, * p<.1*

At the end, OLS regression model was conducted to investigate the significance of the model and test thehypothesis. Researcher could find that the overall model is significant due to F-statistic value is less than

0.05. Therefore, the conclusion can be derived as the aim of the research was achieved, that there is astatistically significant relationship between corporate social sustainability and shareholder wealth. However, using respective P value of each variable, hypotheses were tested. Ultimately, researcher couldidentify that only the equal opportunity and investment in society which are used to determine corporate social sustainability have significant impact on shareholder wealth at the 5% significant level since theindividual P value of those variables is less than 0.05.

## Reference

Przychodzen, Justyna & Wojciech, 2012. Corporate sustainability and shareholder wealth. *Journal ofEnvironmental Planning and Management.*

Gómez-Bezares, F., Przychodzen, w. & Przychodzen, j., 2017. How sustainable development can helpcompanies create shareholder value and improve financial performance. *Research Gate.*

Swarnapali, R., 2017. Corporate sustainability. Journal for Accounting Researchers and Educators, p. 17.

AlGhusin, N. A. S., 2015. The Impact of Financial Leverage, Growth, and Size on. Research Journal of Finance and Accounting

Al-Haija, A., E., K., M.C. & Kolsi, 2020. Corporate social responsibility in Islamic banks: to which extent does Abu Dhabi Islamic bank comply with the global reporting initiative standards?. Emerald Insight.

Ceylan, S. & Soygenis, M. D., 2019. A design studio experience: impacts of social sustainability. Emerald Insight, 27 March.

# Impact of Internal and Macro Economic Factors on The Firm’s Performance: Evidence from Manufacturing Firms Listed in Colombo Stock Exchange

H.P.M.H.M. Pathirana, Y.K. Weerakon Banda
*mahansika88@gmail.com, weerakon@sjp.ac.lk*

**Keywords**: Profitability, Macro-economic Factors, Internal Factors, Manufacturing Firms, CSE

## Introduction

### Background of the study

Manufacturing sector plays very significant role in any economy. This study based on listed manufacturing companies in Colombo Stock Exchange. The main function of manufacturing firm is transforming raw material into finish goods as a large scale. Therefore, we can identify this process as value addition. In addition to that manufacturing industries is used to assess a country economic growth by creating new job opportunities to many individuals & contribute eradications of unemployment & poverty in Sri Lankan economy. Another importance task is that manufacturing firms helps to maintain favorable trade balance by producing product for local consumption and by exporting for foreign consumption. In addition, these companies bring new technology to the country. Economic growth of a country reflected through a manufacturing sector development of that country. Performance of a company can be classified as financial or non-financial. The study discusses of financial performance by profitability. Without having required level of profit a firm will not survive. Therefore, any type of business organization must highly consider profitability and the determinants. The research study addresses the research question “what the internal and macroeconomic factors effect on the profitability of manufacturing sector firms in Sri Lanka are. It tries to find out the various factors which determine the profitability of manufacturing companies listed in Colombo Stock Exchange. (CSE). Study the effect of internal and macroeconomic factors on the performance of listed manufacturing companies on the Colombo Stock Exchange.

### Significance of the study

The purpose of this research is to determine the impact of macroeconomic and company internal factors on profitability. The outcomes of this study's research will be useful to manufacturing companies in their decision-making, as well as to scholars, academicians, and regulatory bodies. This will increase body of knowledge on the impact of internal and macroeconomic factors on the profitability of the manufacturing firms in Sri Lanka. This will be a valuable study to the policy makers and government since it recognizes the direction of each internal and macro-economic level variables. This will extend the level of knowledge on the relationship between the internal and macro-economic variables and the profitability of the manufacturing companies in Sri Lanka. It will suggest for further research areas to future scholars.

## Literature review

Researchers have investigated the factors that effect on profitability of manufacturing firms the previous three decades. They discovered that both internal and macroeconomic factors have an impact on a firm's performance in those studies. According to the study's purpose, a number of exploratory variables have been presented for both categories. The literature on the factors that influence manufacturing firm profitability is considerable. There has been several research conducted on the profitability indicators of manufacturing companies, with many of them coming under single country studies. Due to time limits, it is also outside the scope of this study to review all of the past studies on manufacturing firms. Many academics and undergraduates in Sri Lanka have done various research studies on the profitability determinants of manufacturing companies. However, rather than depending on macroeconomic factors, they focus on internal characteristics such as leverage, liquidity, and capital structure. When it comes to the global environment, many researchers have focused on just one to three macroeconomic variables rather than combining enough macroeconomic and internal elements.

## Problem Statement and Research Questions

Business organization considers broad environmental elements that exist outside of the organization. The macro-environment has the potential to influence the performance of an organization. Manufacturing firms deal with the macro-environment. Therefore, the performance of manufacturing companies is influenced not only by company-specific elements but also by macroenvironmental ones. Researchers have conducted many studies on manufacturing business profitability, assigning greater weight to specific profitability indicators while ignoring internal and external factors together. Therefore, the purpose of this research is to address this research gaps by addressing the following research questions “What is the impact of internal and macro-economic factors on the profitability of manufacturing companies in listed in CSE?”

## Objectives

### Main objective

The primary objective of the research is to identify the relationship between internal and macroeconomic factors and the performance of manufacturing enterprises.

### Sub Objectives

In addition, the researcher attempted to bring new knowledge to the current body of knowledge about factors that influence on manufacturing businesses profitability. Furthermore, researchers attempt to provide guidance for manufacturing firm managers on how to manage the company and how to deal with risk connected with both internal and macroeconomic variables that have been considered in this study

## Research Methodology

All manufacturing firms registered in CSE for a 2011 to 2021 is included in the study's population. Due to the infeasibility of collecting past data, the sample size for this study is limited to only fifteen Sri Lankan manufacturing firms. Firm specific ratios were calculated based on data collected from firms published annual reports. Macro-economic data were calculated Published Central Bank Annual reports. To come up with a sound statistical model, the sample was picked according to the most convenient sampling method, with a focus on the availability of prior data going back over a decade. This study employed used has multiple regression analysis. STATA and SPSS statistical soft wares were used to assess the estimation of coefficients and their reliability. The researchers run two regression models to investigate the impact of internal factors and macroeconomic factors profitability on manufacturing firms registered in CSE. The study used ROA and ROE as proxies for manufacturing firm profitability (which were also dependent variables), whereas independent factors included the exchange rate, GDP growth rate, inflation, unemployment rate, current ratio, debt to equity ratio, and sales growth. The size of the firm was also included as a control variable. All variables were collected based on existing literatures.

## Findings and Conclusions

Several macroeconomic and internal factors have an impacted on the profitability of manufacturing companies listed in the Colombo stock exchange, according to the study. Only ROA (return on assets) models constructed to investigate the impact of macroeconomic and company internal factors on the

Performance of registered manufacturing firms in Sri Lanka were statistically sound, according to the study. The first model (ROA) was created using random effects regression, as suggested by the Hausman fixed random tests. The model's adjusted R-squared value was 93.58 %, and its overall significance was 0.0000. As a result of the ROA measurements, the model is statistically sound in its results. According to the ROA model, GDP growth rate had a positive correlation of 6.2490 with ROA, which was statistically significant and similar to many other empirical findings such as

Egbunike, C.F., and Okerekeoti, C.U., 2018. Although inflation rate had a positive correlation of 0.4366 with ROA according to the findings of current study the results contrary with empirical studies such as Daniel kweku. and obeng-krampah 2018 and Egbunike, C.F., and Okerekeoti, C.U.,2018. In previous studies, such as Daniel kweku. and obeng-krampah 2018 and Egbunike, C.F.and Okerekeoti, C.U.,2018, researchers have used exchange rate. As in previous studies, researchers were unable to identify the exchange rate and firm performance as measured by return on assets in these studies also. Researchers found no significant relationship between firm performance as measured by return on asset and firm characteristics such as firm liquidity as measured by current ratio, firm leverage as measured by debt-to-equity ratio, and firm growth as measured by sales growth rate using the ROA model. Although Caleb, Egbide Olubukunola, Uwuigbe Uwuigbe, Uwalomwa (Ph.D) Egbunike, C.F.and Okerekeoti, C.U.,2018, Nanda, S. and Panda, A.K., 2018., such a researchers had identified firm characteristics as significant determinant firm performance measured by return on assets. Although the second model, ROE, has less explanatory ability because the adjusted R2 value is less than 0.5, which is 0.0699. The overall equation model was acceptable because the model's significance level was less than 0.05. According to the data, firm performance as evaluated by ROE has a positive link with sales growth rate. This result supported by empirical evidence.

## References.


Kartikasari, D. and Merianti, M., 2016. The effect of leverage and firm size to profitability of public manufacturing companies in Indonesia. International Journal of Economics and Financial Issues, 6(2), pp.409-413. Available at https://papers.ssrn.com

Nanda, S. and Panda, A.K., 2018. The determinants of corporate profitability: an investigation of Indian manufacturing firms. International Journal of Emerging Markets. Available at https://www.researchgate.net

Issah, M. and Antwi, S., 2017. Role of macroeconomic variables on firms’ performance: Evidence from the UK. Cogent Economics & Finance, 5(1), p.1405581. Available at https://www.tandfonline.com

# Possibility of Changing Sri Lanka's Financial System by Adopting Cryptocurrency

R.D.S.A. Priyankara, R. P. C. R. Rajapakse
*saliyaamilapro@gmail.com, champa@sjp.ac.lk*

**Keywords:** Blockchain, decentralization, Cryptocurrency factors, Systematic literature review.

## Introduction

Cryptocurrency is a virtual currency that is designed as an alternative to standard fiat currency, allowing consumers to execute digital payment for goods and services without the need for intermediaries. In other words, it is a new form of digital currency platform grounded on a computer cryptography and decentralized network architecture, whose transactions records are stored on the blockchain public distributed ledger (Kelly, 2014). Although digital currency concept has existed since 1980s, cryptocurrency was only utilized with the launching of Bitcoin as a decentralized cryptocurrency in 2009 using the Blockchain technology. Blockchain was designed with the aim of creating a decentralized environment where transaction and data are not controlled by a third-party. Blockchain is a distributed database platform which preserves an incessantly growing list of data records which are verified by the mining nodes. The data is stored in a public ledger, containing information about each and every completed transaction. Blockchain is a decentralized solution that operates without the need for third-party organization involvement. Blockchain shares all the information regarding each and every transaction ever conducted and makes it available to all nodes. Decentralized Finance (DeFi) is a new experimental form of finance that does not rely on central authorities or intermediaries like exchanges, brokerages, or banks; it instead utilizes smart contracts on blockchains. This new system tries to advance the principles of disintermediation as it tries to create a financial system that is open to everyone and does not ask its users to place blind trust in it. The trust is verifiable via code. This "trustless" functionality is the primary aspect of Decentralized Finance (DeFi) (Julian Hosp, U-Zyn Chua, John Rost, & Kenneth Oh, n.d.). It allows users to have direct power over their financial assets and investments. Decentralization does not necessarily mean that there is no center, but it means that nodes can freely decide and choose the center. In centralized systems, the center determines the node, and the latter cannot survive without the former. However, in a decentralized system, anyone is a node, and anyone can be a center. The leaps and bounds we have made in the technological field, this past decade, have allowed for the emergence and development of a new decentralized financial system. In its simple sense, DeFi is the merger of traditional banking and investing services with decentralized technologies such as cryptocurrencies and decentralized applications (DApps). Technically, it refers to the integration of all decentralized products and services like digital assets, smart contracts, protocols, and applications. This technology calls for a low-cost, fast, efficient, trustworthy, and completely transparent global financial ecosystem that operates over the internet without any central authority and is highly accessible to everyone around the globe. DeFi's foundation is the blockchain technology which harbors attributes like efficiency, transparency, and accessibility that have been absent from the current financial system.

## Literature review

Cryptocurrencies can easily replace fiat money in all areas of value storage, exchange medium, and use as a unit of account. Decentralized blockchain-based systems can also replace banking operations with faster transactions, higher security, lower fees, and smart contracts. You can provide or get a loan, fund your project, and already use DeFi to make payments. And that's just the beginning, many believe that banks and the financial sector can be easily replaced by a more efficient decentralized digital economy. But does it happen? Banks and governments have more power in the world. It may be naive to believe that they will be replaced by cryptocurrencies and blockchain. You have to pay taxes, and the government has to cut them. Today, almost all world powers are considering issuing digital versions of their currencies by central banks – the main reason is to prevent bitcoin and cryptocurrencies from gaining too much momentum. Commercial banks and financial services need to adapt to provide more value to their users. Importantly, as the general public becomes more aware of cryptocurrencies and decentralization, they will see more of the future benefits of finance and the Internet. It is possible to ban cryptocurrencies altogether to avoid substitution, but many suspect that this could happen. The public is supportive of innovation, and big companies like Microsoft and PayPal have likely spearheaded the adoption of irreversible digital currencies.

## Problem Statement

Cryptocurrency is one of the developments of the blockchain that is often used as a decentralized digital currency. The word Cryptocurrency means a virtual currency that has no physical form, and Cryptocurrency also means that the transaction currency cannot be seen and is safe. This digital currency has many types such as Bitcoin, Ethereum, Litecoin, Monaro, and many other types. Although it has no physical form, this currency functions the same as conventional currencies in general and has an exchange rate. Exchange rates on Cryptocurrency fluctuate which means unexpected, this is often exploited by traders. Cryptocurrency transactions in the form of forwarding from one individual to another individual online, therefore they deal directly without a third party. Every technology has advantages and disadvantages aside from efficiency and convenience, Cryptocurrency has the disadvantage of not having the authority responsible for dealing with all problems that occur in all transactions, and money laundering crimes also often occur, this is a challenge for how to utilize Cryptocurrency and blockchain technology in the current era of globalization, DeFi solves some of the problems existing in the current financial system; financial exclusion, transaction costs, slow speeds, and security issues, while providing users with a seamless experience from anywhere in the world . Thus, the problem is to find out what factors would affect the cryptocurrency adoptions and intention of change in Sri Lankan financial systems.

## Research Objectives

Adoption of Defi helps in solving some of the issues existing in the current financial system The main objective of this study is to identify the factors that affect the cryptocurrency adoptions in Sri Lankan financial systems.

Sub objectives are to find whether there is any relationship between crypto currency adoption, cryptocurrency opportunities, cryptocurrency trust and cryptocurrency value and intention to change the Sri Lankan financial system

## Research Methodology

Based on literature the following hypotheses were formed

**H1**: There is significant relationship between The Cryptocurrency adoption and intention of change in Sri Lankan financial systems.
**H2**: There is significant relationship between The Cryptocurrency opportunities and intention of change in Sri Lankan financial systems
**H3**: There is significant relationship between The Cryptocurrency Trust and intention of change in Sri Lankan financial systems.
**H4**: There is significant relationship between The Cryptocurrency Price Value and intention of change in Sri Lankan financial systems.

## Data Collection

Questionnaire was developed to collect data to study the Cryptocurrency adoption, current stage, opportunities when Sri Lankan government allow the cryptocurrencies, intention of change in Sri Lankan financial systems. Accordingly, four cryptocurrency factors as independent variables, named: Cryptocurrency adoption (AP), Cryptocurrency Opportunities (OP), Trust (TR) and Price Value

(PV)were taken and intention of change in Sri Lankan financial systems is the dependent variable. Questionnaire was refined by getting experts to comment on the initially developed questionnaire194 people were selected using the convenience sampling method. The sample consisted of 159 male respondents and 35 female respondents. 100 were undergraduates. 94% were between the age group 26-35 years, Majority were employed in the private sector earning a monthly salary between 50 to 100 thousand rupees. Validity and reliability tests were done before the statistical analysis. More than 90% of the sample were aware of Defi, preferred using cryptocurrencies and supported a decentralized financial system for Sri Lanka.

A regression analysis was conducted in order to ascertain the relationship between the selected variables and Sri Lankan Financial system; However, the model was weak with an R square of ,355 emphasizing that the model could explain only 35%. All hypotheses were accepted.

## Findings and Conclusions

The Blockchain technology has great capacities and can be used by any government agency in any country. There are discussions about disadvantages among which the issues of implementation and integration. The application of the blockchain-technology involves cooperation and costs of many participants. To overcome the inertia of the system and implement the technology, the state can start implementing the technology in small areas.

Based on the analysis, it can be concluded that there is a significant positive correlation between Cryptocurrency adoption, Cryptocurrency Opportunities, Trust and Price Value with intention of change in Sri Lankan financial systems

## References

DeVries PD. An analysis of cryptocurrency, bitcoin, and the future. International Journal of Business Management and Commerce. 2016; 1(2):1-9.

Sas C, Khairuddin IE. Design for trust: an exploration of the challenges and opportunities of bitcoin users. In proceedings of the chi conference on human factors in computing systems 2017 (pp. 6499-510). ACM.

Fung B, Halaburda H. Understanding platform-based digital currencies. Bank of Canada Review. 2014; 2014(Spring):12-20.

Murphy EV, Murphy MM, Seitzinger MV. Bitcoin: questions, answers, and analysis of legal issues. Library of Congress, Congressional Research Service.2015.

# The Impact of CAMELS Variables on Stock Performance, with Special Reference to Licensed Commercial Banks in Sri Lanka

L.M.M. Abeyrathna, N. S. Nanayakkara
*maneeshamandakini03@gmail.com, neelangie@sjp.ac.lk*

**Keywords**: Assets Quality, CAMEL Model, Capital Adequacy, Earning Ability, Management Efficiency

## Introduction

The financial system, which includes the banking sector, is critical to the growth of every country's economy. An economy's growth is highly dependent on how well resources are deployed and utilized, and most crucially, how well different sectors of the economy are performing. In particular, the banking sector aids in the formation of capital, the creation of money, and the development of new technologies. To guarantee a healthy financial system and an efficient economy, comprehensive examination, and analysis of the operations of banks is needed. Banking industry efficiency metrics are important to assess the health of an economy's financial sector and the CAMELS ratios (Capital, Asset Quality, Management, Earning, Liquidity and Sensitivity) is an efficient way to monitor the overall efficacy of banks. An increase in the company's financial position will lead to an increase in the company's profitability which in turn leads to an increase in stock prices (Duong et al., 2020). As a result, the study aims to identify how CAMELS variables impact the stock performance of the Sri Lankan Licensed commercial banks.

## Literature review

The banking sector is critical to the country's economic success. It's impossible to conceive a country's commercial, industrial, or agricultural development without a well-functioning financial system. Furthermore, the banking system guarantees that scarce national resources are allocated optimally, and that money are mobilized to provide appealing economic prospects (Jha & Hui, 2012). Banking is a more sophisticated and rapidly growing industry. Depositors, stockholders, employees, and the entire economy all care about its financial stability and performance. As a result, assessing the banking sector's financial soundness and performance is a difficult process (Mohiuddin, 2014).

The banking sector is fast-paced and fiercely competitive. Because of changing consumer needs, they must provide unique and specialized financial services rather than standard banking services (Kumar & Alam, 2018). As a result, it must be evaluated on a regular basis (Dhaigude & Chatterjee, 2018). Academic studies and national and international regulatory and supervisory authorities pay increased emphasis to assessing the banking sector's soundness and performance (Roman & Sargu, 2013). The banking sector in recent years, the industry has experienced remarkable expansion. However, only a few empirical studies based on bank performance have been done (Erol et al., 2014; Mohiuddin, 2014).

Masa'deh et al. (2015) found that there are many different ways to evaluate a company's success. In the early 1990s and late 1980s, studies used the Market Power (MP) or Efficiency Structure (ES) models to analyze bank performance (Mensi & Zouari, 2010). Researchers have also utilized a variety of methodologies to evaluate bank performance, including the balanced scorecard, ratio analysis, data envelopment analysis, analytic hierarchical process, and benchmarking (Dhaigude & Chatterjee, 2018).

## Problem statement and research questions

The aim of this study is to analyze the impact of the CAMELS variables on the stock performance of Sri Lankan Licensed Commercial Banks. The CAMELS ratio model employed in this study includes Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL), Net Profit Margin (NPM), Return on

Asset (ROA), and Loan to Deposit Ratio (LDR), and beta (β) of the stock and the closing stock price was used to determine the stock price returns.

There are a wide range of outcomes from prior research, some of which are influential and others that have no impact of CAMELS Variables on stock performance. Further, analysts, regulatory bodies, fund managers, consultants, and the banks themselves produce numerous research papers and other materials monthly, most of these studies cover a small-time span, such as a fiscal year. Many of these reports focus on a particular bank's performance and do not provide comparison data that is critical to the decision-making process. A few of these publications just focus on a single element or a couple of the six components above, rather than focusing on all six. Thus, this study uses the CAMELS framework to examine their impact on the stock performance of Sri Lankan licensed commercial banks.

## Objectives

**Main objective,**

The goal of this study is to determine the impact of the CAMEL criteria on the performance of a Sri Lankan domestic listed commercial bank.

**Sub objectives,**

1. To compare the CAMELS variables of the LCBs of Sri Lanka.
2. To analyze the impact of CAMELS variables on the stock performance of LCBs in Sri Lanka.
3. To provide some recommendations to the banks’ management on strategies to improve the financial performance and CAMLES areas of the bank.

## Research methodology

As of 31 March 2021. there were 24 licensed commercial banks in Sri Lanka. More than two-thirds of the overall asset base of LCBs was held by the top five LCBs (BOC, People's Bank, Commercial, Hatton National, and Sampath Bank) in terms of their asset base size and are the sample of the study. The researcher will rely on secondary data collection method using annual reports over 2010-20 for identify CAMELS variables and stock performance. The regression analysis will be used to identify the relationships using SPSS software.

## Findings and conclusion

The banking sector is a fast-increasing industry that serves as the backbone of the country's financial system by allowing for the most efficient use of financial resources. However, in recent years, Sri Lanka's financial sector has experienced a minor crisis. As a result, it is critical to place a greater emphasis on bank supervisory activities in order to maintain a healthy banking system. The CAMEL model is critical in determining the soundness of a bank's performance and providing guidance on how to avoid any risk that could lead to bank failures. According to the literature review, there are contradictory claims about the CAMEL model's impact on bank performance. Previous research, on the other hand, has primarily concentrated on accounting-based performance, with ICBR 2021 209 little attentions paid to market-based performance. Furthermore, there are few details about the Sri Lankan situation.

## References

Chatterjee, D., & Dhaigude, A. S. (2018). Calibrating the factors of management quality in banking performance: a mixed method approach. *Measuring Business Excellence*, *22*(3), 242-257.

Duong, Tam Thanh Nguyen, et al. The effect of financial restructuring on the overall financial performance of the commercial banks in Vietnam. *The Journal of Asian Finance, Economics and Business* 7.9 (2020): 75-84.

Hui, X., Jha, S. (2012). The Impact of Commercial Banking Performance on Economic Growth. In: Lin, YK., Tsao, YC., Lin, SW. (eds) *Proceedings of the Institute of Industrial Engineers Asian Conference* 2013. Springer, Singapore.

Kumar, Ajit, and Mubashir Alam. Analysis of The Performance of Selected Public Sector Banks using Camels' Approach. *International Journal of Management Studies* 5.3 (2018).

Mensi, S., & Zouari, A. (2010). Efficient structure versus market power: Theories and empirical evidence. *International journal of Economics and Finance*, *2*(4), 151-166.

Mohiuddin, Md. Trend and Development of E-Banking: A Study on Bangladesh. *IOSR Journal of Business and Management (IOSR-JBM)* 16.5 (2014): 16-24.

Roman, Angela, and Alina Camelia Sargu. Modelling Bank Efficiency of the New EU Member States: A Non-Parametric Frontier Approach. *Transformations in Business & Economics* 12 (2013)

Tarhini, A., Mgbemena, C., Trab, M. S. A., & Masa'Deh, R. (2015). User adoption of online banking in Nigeria: A qualitative study. *The Journal of Internet Banking and Commerce*, *20*(3).

# Mobile Phone-based Transactions on the Financial Performance of Small and Medium Scale Enterprises in Sri Lanka

U.D.M Anupama, P.A.N.S Anuradha, I.G.S.M Illubethanne
*minalianupama19@gmail.com, anuradha@sjp.ac.lk, samyaigsm@sjp.ac.lk*

**Keywords:** Cash Management, Debtor Collection, Financial Performance, Mobile Phone-based Transactions, Sales Turnover

## Introduction

Mobile phone-based transactions nowadays nothing curious but especially in developing countries like Sri Lanka, this technology hardly accepts as a payment method. Rather continuing on the traditional payment method, which is cash, these new technologies must be tried. In the context of small and medium scale enterprise (SMEs), though they are highly contributing to the economy of a country, they still remain underrated and being far from the latest technologies was identified in many studies as the reason for such underrating.

The impact of mobile phone-based transaction has less researched and for the reason, some studies have emphasized that SMEs are rarely engages in banking services yet mostly encourages in cash as the payment mode (Amaradiwakara and Gunatilake, 2017). Hence the study on this impactful relationship is an aid to both entrepreneurs and the customers. The study shows the barriers and strengths that can be occurred with adapting mobile phone-based transaction by a SME. The entrepreneurs therefore can formulate predetermined strategies to implement in any circumstance.

## Literature Review

Definition for SME takes the characteristics of the region it operates (Gunawan *et al*, 2019). Sri Lanka defines SME as an enterprise that has less than 300 employees and less than Rs. 750 million of annual turnover. The non-cash technology was found in thousands of years ago while there was barter system to deal with. The modernized non-cash technology is identified as electronic money. The use of electronic money became famous with mobile banking (Kapurubandara and Lawson, 2007). The mobile phone-based transaction has a definition by several scholars and as for a conclusion, what all of them were saying is that a transaction happens via a mobile phone. Nowadays, mobile phone-based transactions and SMEs have a tight connection like other industries. In Sri Lanka, over 75% of people tend to use mobile banking services thereby mobile phone-based transactions (Kumari, 2015). Therefore, the use of mobile phone-based transactions has become more popular while SMEs are rapidly adapting to the technology. It enables them a location free access, security, time saving, cost saving and reliability. Hence, obviously the performance of SMEs is having a significant impact by the usage of mobile phone-based transactions. Financial performance can have several aspects and for more practicability financial performance of SMEs is underlined in the present study. The measurement of the financial performance again can be done with several measures but most of studies have revealed that in SMEs, sales turnover, debtor collection and cash management well conclude the financial performance. Every single study conducted to assess the impact of mobile phone-based transactions on the financial performance of SMEs, has concluded that each of those financial performance measures show a positive response to the practice of mobile phone-based transactions.

## Problem Statement and Research Questions

As already mentioned, the mobile phone-based transactions by SMEs have become a trend yet studies that have been conducted to address the impact of such are few. Therefore, the contemplation of the present study is to emphasize the impact of mobile phone-based transactions on the financial performance of SMEs in Sri Lanka. Thereby, we attempt find the answers for the main question 'what is the owners' perception on the impact of mobile phone-based transactions on the financial performance of SMEs in Sri Lanka?'.

## Research Objectives

The main objective of this study is "To test the owner's perception of using mobile phone transactions on financial performance of SMEs". The sub objectives of the study are

1. To test the owners' perception on the impact of mobile phone-based transactions on the debtor collection of SMEs in Sri Lanka
2. To test the owners' perception on the impact of mobile phone-based transactions on the cash management of SMEs in Sri Lanka
3. To test the owners' perception on the impact of mobile phone-based transactions on the sales turnover of SMEs in Sri Lanka

## Methodology

The study has not been able to collect data from any document-based source because as mentioned SMEs typically do not publish their financial statements. Even though, the researcher couldn't directly ask what your sales revenue is etc. Hence, obviously the author had to go for primary data collection and perceptional based study. In collecting primary data, a structured questionnaire was used among 100 entrepreneurs covering Sri Lanka. Financial performance is the dependent variable which is measured by sales turnover, debtor collection and cash management, so the study had three dependent variables while the mobile phone-based transaction is the independent variable. The performance is being measured in perception on the change SMEs adopt due to mobile phone-based transactions and therefore the relationship of these variables tested with chi square test.

## Results and Findings

The study has gotten the responses from each district, so the study covers Sri Lanka in its geographical aspect. Further, the experience level of the respondents in the business field also widely dispersed where there are both well experienced and newcomers. Almost each entrepreneur was practicing mobile phone-based transactions and most of them are busy with 50 to 100 daily transactions. 96% of the SMEs sell and purchase goods on credit basis so there is the debtor collection and payables, so they obviously do cash management in order to pay the payables on time. The debtor collection as dependent variable highly responsive to the change occurred due to the mobile phone-based transactions. Most of respondents highly agreed on that the debtor collecting has been effective since they started the mobile phone-based transactions. Similarly, the respondents highly accepted that the cash management has been enhanced as they can pay on time to the trade and other payables while managing the cash effectively and this indirectly supports the working capital management as well. Almost each entrepreneur stated that there is an increment in their sales turnover due to the use of mobile phone-based transactions. Therefore, the findings of the study conclude that there is a significant impact by the mobile phone-based transactions on the sales turnover, debtor collection and cash management which represent the financial performance of SMEs.

## Discussion

The most recent study conducted on the impact of Mobile money on the Financial Performance of SMEs, has found out that the relationship between the use of mobile money and financial performance is positive and this relationship has been tightening. The same study reveals that the mobile money which the money transferred via the mobile phone can enhance the financial performance of SMEs. Same as the findings of the present study the before and after performance has a drastic change and this is proven in this underlined research as well. According to the findings of the research on impact of mobile money on the growth of SMEs (Tengeh and Talom, 2020) the sales revenue of SMEs is being significantly increased due to the use of mobile money transfers. Especially, the particular study focuses on the sales turnover, and it concludes the sales turnover gets a positive impact by the use of mobile phone-based money transactions. As for the measurement of the financial performance, the present study uses sales turnover, and the author has concluded that the sales turnover is positively impacted by the mobile phone-based transactions and the conclusion is well confirmed with the results of the study mentioned. Furthermore, the study by (Bosire and Ntale, 2018) investigates the influence of the ease of use and perceived usefulness to the adoption of mobile money services in SMEs in Tanzania and the findings of this particular study stands with the findings of the present study where the mobile phone-based transactions have a positive impact on the financial performance of SMEs.

## Conclusion

This study was conducted to assess whether there is an impact by the mobile phone-based transactions on the financial performance of SMEs in Sri Lanka. Other than any method, use of mobile phone-based transactions became more popular with the internet revolution, e-banking and with the use of smart phones. Therefore, study has set its focus on mobile phone-based transactions. Following the main objective of the study, it has found that the use of mobile money transactions can enhance the cash management, increase the debtor collection and increase the sales turnover. However, the author suggests for the future researchers to include the conditions of developed countries as well.

## References


Gunawan, H., Sinaga, B. L. and Sigit Purnomo, W. P. (2019). Assessment of the readiness of micro, small and medium enterprises in using E-money using the unified theory of acceptance and use of technology (UTAUT) method. *Procedia Computer Science*, 161, 316–323. doi: 10.1016/j.procs.2019.11.129

Kapurubandara, M. and Lawson, R. (2007). SMEs in developing countries need support to address the challenges of adopting e-commerce technologies. *20th Bled eConference - eMergence: Merging and Emerging Technologies, Processes, and Institutions - Conference Proceedings*, (June). 485–499.

Kumari, P. (2015). Customer Adoption and Attitudes in Mobile Banking in Sri Lanka. 9(12). 4355–4359.

Mochama Bosire, J. and Franklin Ntale, J. (2018). Effect of Mobile Money Transfer Services on the Growth of Small and Medium Enterprises in Informal Sector of Nairobi County, Kenya. *International Journal of Information Research and Review*, 5(3), 5326–5333.

Tengeh, R.K. and Talom, F.S.G. (2020). Mobile money as a sustainable alternative for smes in less developed financial markets. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4). 1–21. doi:10.3390/joitmc6040163.

# Department of Finance

The Pioneers of Finance Education in Sri Lanka