

IMPACT OF COVID – 19 PANDEMIC ON DEBT SECURITIES IN SRI LANKAKrishanth, P. ¹ and Buddika, H.J.R.²**Abstract**

Introduction- This study is conducted on the debt securities of Sri Lanka during the COVID – 19 pandemic. This study explores the impact of the COVID – 19 pandemic outbreak and the relevant factors on the debt securities yield in Sri Lanka.

Design/Methodology/Approach- The study consists of COVID-19 confirmed cases, inflation rate, interest rate, economic growth rate and foreign investment and the data was collected for the period of January 27th, 2020, to August 31st, 2021. This study uses the time-series regression model to evaluate the impact of the daily increase in the COVID confirmed cases during the pandemic on the debt securities yield.

Findings- According to the results, the interest rate and foreign investment exhibited a significant positive relationship with the debt securities yield. The variables inflation rate and economic growth rate displayed a significant negative relationship with the debt securities yield. Moreover, the COVID-19 confirmed cases had an insignificant positive moderation impact on the debt securities.

Conclusion – The outcome of the study emphasizes that the overall model is statistically significant, and the study concludes that there is a positive relationship between the COVID-19 confirmed cases and the debt securities in Sri Lanka.

Keywords: *Pandemic, Confirmed cases, Debt securities yield, Stock market, Sri Lanka.*

Cite this paper as:

Krishanth, P. and Buddika, H.J.R. IMPACT OF COVID – 19 PANDEMIC ON DEBT SECURITIES IN SRI LANKA *10th Students' Research Symposium, Department of Finance, University of Kelaniya, Sri Lanka.* 4. 81-108

^{1,2}Department of Finance, Faculty of Commerce and Management Studies, University of Kelaniya

1. Introduction

COVID – 19 is part of a broad group of (SARS) viruses. The Chinese authorities identified this novel Coronavirus stain in Wuhan City, Hubei province of China. On 30th January, World Health Organization declared COVID – 19 outbreak a global emergency (WHO, 2020). The impact is still counting on exponentially, with the death rates and the infected cases. According to WHO 2021, The confirmed cases were almost close to 200 million, and the deaths recorded were more than 4 million across the globe by June.

The IMF lowered its growth projection about the global economy as the COVID-19 outbreak turned its earlier projection upside-down (Ozili, 2020). As a result, the global growth projection for 2020 was -4.9% (IMF, 2020). According to Ozili (2020), uncertainty caused by the adverse impact of COVID – 19 has made the global stock markets lose about 6 trillion US Dollars in just one week from 24th to 28th February, and the S&P 500 index lost over 5 trillion US Dollars in value in the same week. The global pandemic severely disturbed industries such as tourism, aviation, manufacturing, and food services.

Sri Lanka is a thriving developing economy predominantly based on Agriculture, Services, and Trade. Moreover, it has also suffered the adverse impacts of the global pandemic. As a result, the economic growth of Sri Lanka dropped to a lower level. "Amid the COVID-19 pandemic, Sri Lanka's economy contracted by 3.6 per cent in 2020, the worst growth performance on record" (World Bank, 2021). According to the Central Bank of Sri Lanka 2020, the country observed almost a 70% outward discharge of foreign-owned T-bills and T-bonds (US\$ 372 million) within two months period.

1.1. Research Gaps

In the Sri Lankan context, we often analyze the stock market indices and their performances. Nevertheless, the debt securities market has not been deeply examined. Sri Lanka's debt securities market was small, volatile, and underperforming till the 2000s. After that, it had an exponential growth till 2010 (trillion rupees value). Eventually, the Debt securities market started gradually declining after 2010. (Central Bank of Sri Lanka, 2015). Sri Lanka is more of a pre-emerging market in the world in recent times. Due to COVID- 19, the debt securities also got badly affected. "Government Securities Market a downward adjustment in government securities yield rates were generally observed throughout 2020" (Central Bank of Sri Lanka, 2020). Lennart & Malin (2000) researched the Sri Lankan debt market, which is outdated for the current situation.

1.2. Research Objectives

There is a requirement to recover from the repercussions and strengthen the debt market of Sri Lanka. We have to analyze and understand the impact to respond to the challenge. Studies have helped policymakers to prepare more viable and effective strategies. This study explores the impact of the Covid-19 pandemic on the debt securities in Sri Lanka. The crucial factors affecting the debt securities yields are Inflation rate, Foreign Investment, Interest rate, and Economic Growth. The utmost goal of this research is to test the relationship existing between the effect of the Covid-19 daily infection rate and the debt securities yield. Moreover, this study will examine the moderating influence of the pandemic on the above-mentioned significant factors that affect the debt security yields.

1.3. Research Questions

This study answers the following research questions,

1. Does the daily confirmed cases in Sri Lanka has a moderate impact on the debt securities yield?
2. Do the other independent variables such as inflation, interest rate, economic growth rate, and foreign investment impact the Debt securities yield?

1.4. Research Limitation

The major limitation of the study is the determining variables. It is impossible to specify all the actual variables affecting the debt securities yield. Adding qualitative variables might increase the accuracy and reliability of the results. The other limitation of this research is that it did not consider the influence of the Sri Lankan government's monetary and fiscal policy measures during the pandemic. If these were included, it might explain the movements of the debt securities yield more in detail. Here, Short -term debt securities yields are used because the pandemic considerably has a significant impact in the short term. Taking the long-term bond would not be more appropriate because the pandemic effect will be neutralized in the long run. “The negative market reactions to the COVID-19 pandemic have dissipated quickly during the 60 days after the event date”, (Harjoto & Rossi, 2020). Moreover, various factors could have been included in the study, such as Political Stability, External Agreements, Credit ratings and Crime rates which may provide more interesting results in this context.

1.5. Significance of the Study

Several papers have investigated the impact of COVID-19 and its consequences on stock markets (e.g., Amin et al., 2021; Anh & Gan, 2020; Wu & Hui, 2021). These studies, nevertheless, focus on developed and emerging stock markets, specifically equity stocks. There is a lack of studies exploring the effects of COVID-19 on Foreign Investment, Interest rate, Inflation rate, and economic growth, which affect the debt securities yield as a whole in Sri Lanka. This is the first study to explore the repercussions of COVID-19 on debt securities yields in Sri Lanka. The particular effects of the Foreign Investment, Interest rate, Inflation rate, and Economic growth during the pandemic on the Sri Lankan debt securities responses are covered in this study. As a key contribution, this study is a pioneer endeavour to assess the extent to which the Sri Lankan debt securities have been impacted by the novel COVID-19 pandemic.

2. Literature Review

Pandemic is not a new term to the world countries. Unlike other happenings, pandemics create a long-term impact around the globe. Nevertheless, COVID – 19 spread is indeed a tragic circumstance for us. The Black Death "Plague Outbreak", the Bleeding Fever, the Cholera epidemic, the AIDS virus in Cameroon, severe acute respiratory syndrome (SARS), Ebola and Swine Flu are some of them (Zeren & Hizarci, 2020). Stock market performances respond to significant events such as Disasters, wars, Crises and Pandemics (Al-Awadhi et al., 2020). The pandemic has fostered devastation to the global economy and the financial markets.

Coronavirus originated from the epicentre Wuhan city, China. The COVID – 19 pandemic has pessimistically hit

the international trade, tourism and hospitality, aviation and transportation industries (Wu & Hui, 2021). According to scholar findings, it was found that the systemic financial risk of each country magnified significantly during the pandemic. An essential pillar of the economy, stock markets could not avoid the consequences and showed a bearish trend globally.

Ever since the outburst of the novel Coronavirus, to effectively contain the spread of the virus, many countries have implemented a set of necessary guidelines, including the closure of productions, Work from Home opportunities, and home quarantine regulations. The enactment of these strict measures has brought up a more significant influence on the economic flourishing and the operation of businesses. Most developing countries are highly dependent on foreign investments, foreign debts and imports, which encourages those countries to worsen the health of the whole economy. As discussed in the "Impact of Covid-19 on the Global Economy WFR May_June, Siddique K." (2020), The pandemic has unfolded the pitfalls of capitalist globalization. It has reinstated the understanding of the significance of sovereignty, national economy, and domestic markets.

Recently, only a limited number of studies have examined the impact of the global pandemic on the financial markets. To be more specific, studies rarely look into debt securities. Researchers analyzed the repercussions of the COVID – 19 pandemic in many different ways. According to Wang et al., (2020), the impact on GDP was based on the daily measure of passengers in trains during the pandemic. There was a strong strike on the volatility of the Shenzhen and Shanghai stock exchanges (Corbet et al., 2020). Jiang et al., (2017) evaluated the relationship between the (H7N9) bird flu virus and the Chinese stock market. They found that the daily number of infected

cases increased dramatically and negatively affected the stock prices on the overall market index and relevant sectors. (Baig et al., 2020) scrutinized the influence of COVID-19 on the liquidity of the stock market and the turbulence on the stock market performance. Subsequently, the increase in the number of confirmed cases and deaths guaranteed due to COVID-19 had significantly increased financial markets instability and strict closure measures, undermining the market potential and resilience.

Documented studies show that there is a correlation between pandemic confirmed cases and the securities. Al-Awadhi et al., (2020) show that both the daily increase in the number of confirmed cases and deaths of COVID-19 the return of shares affected pessimistically in all firms in China. Ashraf (2020) investigated the influence of the stock market operating in 64 countries and is experiencing an inverse relationship between growing numbers of infected cases and returns of the stocks. Zhang et al., (2020) confirm the adverse effects of COVID-19 on the stock markets of the ten most dominant markets, such as Japan, Korea, and Singapore.

Sri Lanka is also among the countries badly affected by the pandemic, which is still struggling through its tragic journey. It collapsed the whole economy, including the financial markets. The trade balance, unemployment, inflation, interest rates and foreign investment and credit ratings displayed unpleasant outcomes during the pandemic. As a result, IMF downgraded Sri Lanka to the lower-middle-class income group (IMF, 2021). The GDP per capita decreased from 3,853 USD to 3,679 USD (WHO, 2020).

The Sri Lankan stock market is a pre-emerging frontier market. Bond Market in Sri Lanka initiated active operations in 1990. Government securities are of two types, the rupee-securities and foreign currency securities.

Rupee-denominated securities involve Treasury bills and Treasury Bonds. Foreign currency-denominated securities comprise only Treasury bonds such as Sri Lanka Development Bonds (SLDB) and Sri Lanka International Royal Bonds (Central Bank of Sri Lanka). Sri Lanka's total domestic debt is made up of short-term T-Bills, the Advances of the Central Bank, Medium-term & Long-term Treasury Bonds, Rupee Loans and SLDBs. Sri Lanka relies heavily on short-term financing to meet government spending needs.

CBSL had to lower the Interest rates due to massive panic caused by the pandemic (Central Bank of Sri Lanka, 2020). Studies have shown that there is always a strong positive relationship between interest rates and bond yields (How Are Bond Yields Affected by Monetary Policy?, n.d.). The Inflation went on to rise even more in Sri Lanka during the pandemic. Bonds yields tend to rise with the inflation rate because it will crumble down the purchasing power of the bond cash flows. Adding to that, investors demand a higher yield rate to compensate for the inflation risk in the economy (Understanding Interest Rates, Inflation, and Bonds, n.d.). Economic growth is positively correlated with bond yields. Because the underlying cause of increased inflation and interest rates while the economy grows, induces pressure on bond yields (What Economic Factors Influence Corporate Bond Yields?, n.d.). Foreign Investment has a significant influence on bond yields. "Foreign ownership tends to lower the yield and yields volatility in the country having strong macro-economic fundamentals" (Muharam et al., 2018). According to the KPMG Report (2020), foreign holdings in treasury bills and bonds reduced by almost 60% to LKR 41.6 billion in March and yield rates were rising.

According to Wang et al., (2020), the event study method was used to examine the repercussions of pandemic

outbreaks on Taiwan's biotechnology industry which produced abnormal returns. Al-Awadhi et al., (2020) used the panel data regression testing analysis and found that the pandemic has negatively impacted the Chinese stock market returns. Comparably, He et al. (2020) found that the information technology, Healthcare, Education and Manufacturing industries were adaptable to the pandemic using the panel data regression methodology on the daily stock market indices of the Chinese stock markets. A study conducted on the American wine demand and supply during the pandemic has used time-series data. “Characteristic to TS analysis, no a priori assumptions about the causal relationship is made and the data is allowed to speak” (Huq et al., 2021). Based on this existing literature, assume that the time-series data regression model will be more appropriate to investigate the debt securities yield rate fluctuations during the pandemic time frame in Sri Lanka.

While considering the time durations of the existing works of literature are very limited to short periods. “The study used the empirical data of three regions: South America, North America and Central America, for the period March 10 to April 9, 2020,” (Amin et al., 2020). According to the study by Trang and Gan (2020), The daily stock data start on 30 January 2020, and the end date of the daily stock data is 30 May 2020. “Therefore, the overall returns data that are used in our study span from December 27, 2018, through June 3, 2020”, (Harjota and Rossi, 2020). This study further extends the time duration for the assumed model. This research will be taking data for 582 days.

Time-series data regression inputs the daily data within a given time frame to analyze the trends of the variables. This will be the initial research to use this model to examine the impact of the COVID – 19 pandemic on the Sri

Lankan bond market. Since no studies have examined the debt securities market using the time-series data regression in Sri Lanka. This study will support domestic investors and foreign investors to mindfully invest in the bond market of Sri Lanka during a crisis.

However, limited studies assess the influence of pandemics on Sri Lankan bond markets and their security yields. Sri Lanka is a rapidly developing economy that successfully controlled the pandemic and revived the financial markets in 2020. COVID -19 has indirectly impacted the debt market. This study competently attempts to inspect the extent to which the Sri Lankan debt securities market has been affected by the COVID-19 pandemic. Since Sri Lanka is a developing economy, the outcomes of this study can be a basis for guidelines for analyzing the impact of the pandemic on the debt securities market in other developing economies as well. These gaps in the literature and the potential development of the Sri Lankan bond market encouraged me to conduct this research.

3. Methodology

3.1. Data

This study evaluates the effects of the COVID-19 epidemic and the significant factors such as inflation, interest rate, economic growth, and foreign investment on the yield of the debt securities in the Sri Lankan bond market. This study aimed to determine the debt securities yield reaction to the COVID-19 epidemic in the Sri Lankan bond market. For this purpose, we use the number of Covid positive cases daily (from the first reported case in Sri Lanka) to determine the severity of the deadly disease. The bond yields' response was assessed using the daily

debt securities yield rate changes in the market. In addition, the study used time-series data ranging from January 27th 2020 to August 31st 2021, which was categorized as the 1st wave, 2nd wave, and 3rd wave intervals to review the bond yield pattern. It sums up to a count of 582 days of duration. The 1st wave was from 27/01/2020 to 03/10/2020, 2nd wave was from 04/10/2020 to 14/04/2021 and the 3rd wave was from 14/04/2021 to 31/08/2021.

Daily bond yield data starts from the 27th of January 2020, which was the first working day since the first infected corona case of COVID-19 was declared in Sri Lanka. The daily date for bond yield data ends on 31st August 2021. The daily number of infected cases in Sri Lanka was collected from the website of the Department of Health, Sri Lanka (<https://hpb.health.gov.lk/covid19-dashboard/>). The input data was collected from the sources such as Central Bank reports, IMF reports, WHO Statistics, Colombo Stock Exchange Publications, Sri Lanka Health Ministry website. The data was collected on the website that provides real-time COVID – 19 confirmed cases statistics of Sri Lanka. In addition, bond yields data were fetched at [investing.com](https://www.investing.com/rates-bonds/sri-lanka/) (<https://www.investing.com/rates-bonds/sri-lanka/>).

Al-Awadhi et al. (2020) and Ashraf (2020), while assessing the impact of the COVID-19 pandemic on the returns of stock markets, explain that the intensity of the pandemic was not on the very first day of the pandemic. By Al-Awadhi et al. (2020), Trang & Gan (2020), Amin et al. (2020), and Ashraf (2020), this study uses the time-series regression analysis approach, which is much more appropriate for this field than the classical event study methods used in the other analysis.

While assessing the impact of COVID-19 during the pandemic period on Sri Lankan debt securities market performance, this study adopts a time-series regression model which is quite similar to the regression model of Hensler et al. (2021) to evaluate the effect of daily increases on the number of COVID-19 cases in the dependent variable of this study. Variables of the model are the demand and supply for the American wines in the study conducted in the USA by Hensler, Jones and Huq in 2021. Nevertheless, the independent variables such as Interest rate, Inflation, Economic growth, and Foreign Investment which affects the dependent variable, T-bill Yields are included in this study.

The regression model:

The model examines the impact of the COVID – 19 pandemic on the debt securities yields:

$$BY_t = \alpha_1 + \alpha_2 \text{CASE} + \alpha_3 \text{INTER} + \alpha_4 \text{INFL} + \alpha_5 \text{GDP} + \alpha_6 \text{FINV} + \varepsilon_{0t}$$

BY_{t} is the yield of the T.Bill on day t.

CASE is the total number of positive COVID -19 cases in Sri Lanka on day t.

INTER is the interest rate in Sri Lanka on day t.

INFL is the inflation rate in Sri Lanka on day t.

GDP is the economic growth rate in Sri Lanka.

FINV is the foreign investment in bonds in Sri Lanka.

This study formulates the following hypothesis to test,

H₁: There is a significant positive relationship between foreign investments and debt securities yield.

H₂: There is a significant positive relationship between inflation and debt securities yield.

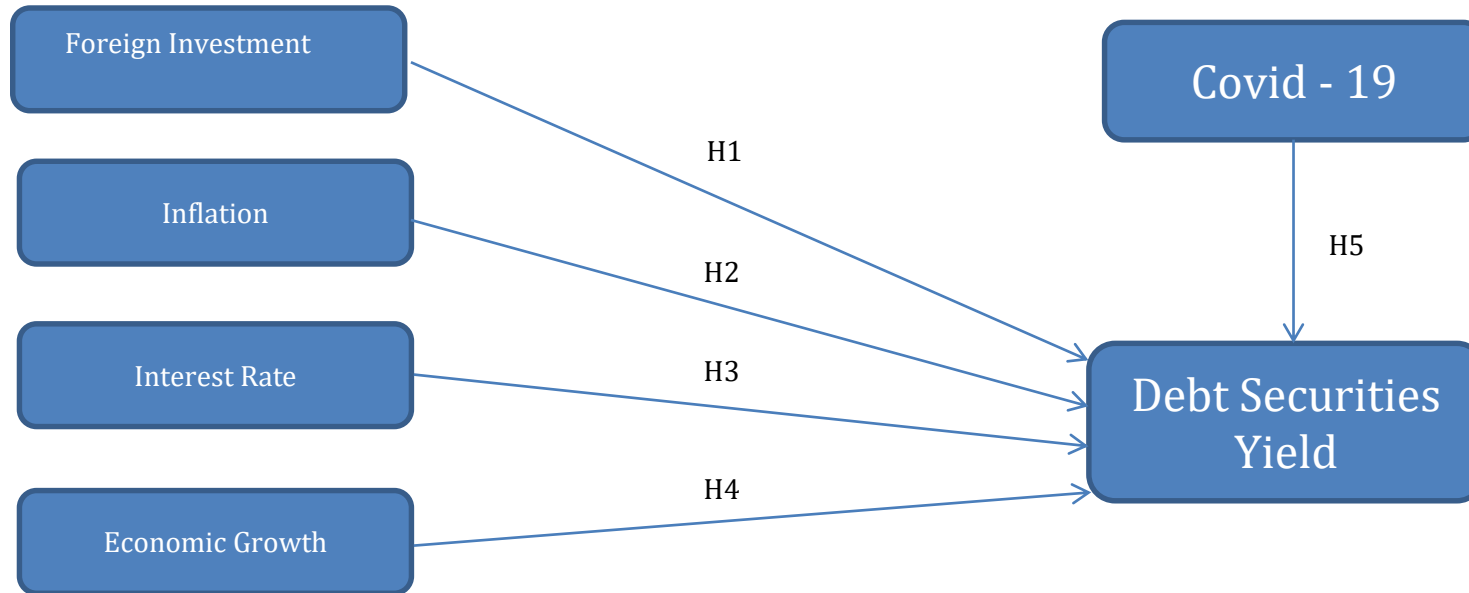
H₃: There is a significant positive relationship between interest rate and debt securities yield.

H₄: There is a significant positive relationship between economic growth and debt securities yield.

H₅: There is a moderation impact from COVID -19 confirmed cases towards the debt securities yield.

The Breusch-Pagan test will be used to detect heteroscedasticity (Breusch & Pagan,1979). A Multi-collinearity test will also be conducted on the sample using the Variance Inflation Factor. The augmented Dickey-fuller test will be used to detect the unit root in the data (Fuss and Hermann, 2005).

Figure 3.1: Conceptual Framework



Source: Author compiled

4. Findings and Discussion

4.1. Descriptive statistics

Table 4.1.1. presents the descriptive statistics of all the variables in the model from the 27th of January 2020 to the 31st of August 2021. The number of observations was 584 in the study. The average debt securities yield in Sri Lanka is 5.54 per cent during the pandemic. The average number of COVID-19 confirmed cases was around 600 per day. The average inflation and interest rates were 5.8% and 5.1%, respectively. The average economic growth was around the 1.5 index mark and the average foreign investment was 114.3 million. The descriptive statistics and Pearson correlation are illustrated in Table 4.1.1 and Table 4.1.2, respectively.

4.2. Unit root test

To check for the stationarity of the time-series data, as per (Fuss and Hermann, 2005) the Augmented Dickey-Fuller unit root test was applied. The test shows that the T- statistics of each variable were higher than the critical value. Which rejects the alternate hypothesis of the presence of unit root in the data. Unit root test confirms that all the variables were stationary at 5% and 10% levels of significance, which allows us to proceed with hypothesis testing.

4.3. Hypothesis Testing

The study used the Breusch-Pagan test for heteroscedasticity which showed the presence of heteroscedasticity. Popular techniques such as winsorization and trimming were used to eliminate the outliers in the data set. Finally, tried with natural log variable method. But still, it was able to notice the presence of heteroscedasticity.

The Multi-collinearity test confirmed that there is a weak correlation among the variables (Mansfield & Helms, 1982). Variance inflation factor values were around the mean of 2.06. Variance inflation factor values are shown in Table 4.1.3.

The first hypothesis was that there is a significant positive relationship between foreign investments and the debt securities yield. The results were positively significant at a 5% level of significance ($p < 0.05$); hence, this hypothesis was supported.

The second hypothesis was that there is a significant positive relationship between the inflation rate and the debt securities yield. The results were negatively significant at a 5% level of significance, Contradicting the hypothesis, the results show a significant negative relationship between the inflation rate and the debt securities. therefore, our hypothesis was not supported by the results.

The third hypothesis was that there is a significant positive relationship between interest rate and debt securities. The results were positively significant at a 5% level of significance. hence, this hypothesis was supported by the output.

The fourth hypothesis was that there is a significant positive relationship between the economic growth rate and the debt securities. The result was negatively significant at the significance level of 5%, Contradicting the assumed hypothesis, the results show a significant negative relationship between economic growth rate and the debt securities yield. therefore, this hypothesis was not endorsed by the results.

The fifth hypothesis assumed that COVID-19 confirmed cases have a moderation impact on the debt securities yield. The result was positively significant at a 5% level of significance. This confirms the existence of the moderation impact of COVID -19 confirmed cases on the debt securities yield.

The R-squared value was 0.88. This shows that 88 per cent of the change in debt securities yield is predicted by the following variables inflation rate, interest rate, Economic growth, foreign investment, and the COVID-19 confirmed cases and the remaining 12 per cent is explained by other factors. The summary of regression outputs of the model is shown in Tables 4.1.4 and 4.1.5, respectively.

Table 4.1.4: Descriptive Statistics

VARIABLES	Mean	STD. DEVIATION
BY	5.546045	0.7954249

CASE	633.7625	741.3942
INFL	5.841781	1.011885
INTER	5.119298	0.8518971
GDP	1.592637	2.151516
FINV	114.3166	13.40388

Source: Author Compiled

Table 4.1.5 : Pearson's Correlation Matrix

BY	CASE	INFL	INTER	GDP	FINV	BY
CASE	1.0000					
INFL	0.1836	1.0000				
INTER	-0.2355	0.3569	1.0000			
GDP	0.0753	-0.6108	-0.4691	1.0000		

						10th SRS - DFin
FINV	0.2635	0.4547	0.3474	0.0223	1.0000	
BY	-0.1514	0.2440	0.9300	-0.3821	0.3539	1.0000

Source: Author Compiled

This study shows a variance inflation factor value of 2.06 which substantiates that an insignificant level of multicollinearity exists among the independent variables. Variance inflation factor values are shown in Table 4.1.3.

Table 4.1.3 : Variance Inflation Factor

Variables	VIF	1/VIF
INFL	2.58	0.387848
GDP	2.57	0.388762
FINV	2.04	0.490565
INTER	1.82	0.548286

CASE	1.28	0.783100
Mean VIF	2.06	

Source: Author Compiled

Table 4.1.4: Summary of Regression Output

Number of Observation	584		
F (5, 533)	837.07		
Prob > F	0.0000		
R-squared	0.8870		
Adjusted R-squared	0.8860		
Source	SS	Df	MS
Model	235.76804	5	47.1536048
Residual	30.249873	533	0.056332059
Total	265.793012	538	0.494039055

Source: Author compiled

Table 4.1.5 : Summary of Regression Output

BY	Coefficient	Std. Error	t	P > t	(95% Confidence Interval)	
FINV	0.0039392	0.0010497	3.75	0.000	0.0018771	0.0060013
INFL	-0.1491226	0.0189422	7.87	0.000	-0.1863332	-0.111912
INTER	0.9875939	0.0200729	49.20	0.000	0.9481623	1.027026
GDP	-0.0174392	0.0082334	2.12	0.035	-0.0336131	-0.0012653
CASE	0.0000885	0.0000156	5.67	0.000	0.0000579	0.0001191
_Cons	0.8961051	0.1226764	7.30	0.000	0.6551165	1.137094

Source: Author compiled

4.4. Discussion

The outputs show that covid confirmed cases have very little effect on the debt securities yield. The First hypothesis was the positive association between foreign investment and debt securities yield and the third hypothesis was the positive association between interest rate and debt securities yield were supported by the results obtained from the analysis.

The reason for the contradicting result for the second hypothesis was inflation rate has a positive relationship with the debt securities price so when the debt security price goes up the security yields come down (Ngaruiya & Njuguna, 2016). Eventually, it confirms that inflation has a negative relationship with debt securities yield.

The reason for the rejection of the fourth hypothesis is that increased economic growth will indeed stimulate inflation to rise. Therefore, as accordingly mentioned in the previous paragraph, there is a negative relationship between the economic growth rate and debt securities yield.

Out of the five hypotheses only two were rejected and the rest of them were matching with the results. Among the independent variables, the interest rate showed a higher impact on the debt securities yield.

5. Conclusion

This research explains the effect of COVID-19 confirmed cases and the other factors such as inflation, interest rate, economic growth, and foreign investment on the debt securities yield in Sri Lanka. Researchers have illustrated the adverse impact of natural disasters and pandemics on financial markets. This study contributes to the existing literature by analyzing the impact of the COVID-19 pandemic on the debt securities market. yield in Sri Lanka. More specifically, this research provides to the literature by testing the hypotheses with a time-series data set of the debt securities yield in Sri Lanka.

This study has answered the research questions.

1. It is confirmed that the daily COVID-19 confirmed cases in Sri Lanka have a moderation impact on the debt securities yield.
2. It is confirmed that the independent variables such as inflation, interest rate, economic growth, and foreign investment impacted the Debt securities yield.

Using the regression analysis, this study confirms that the daily increase in the number of confirmed COVID-19 cases has very limited positive association with the debt securities yield. According to Anh & Gan (2020), “the COVID-19 pandemic affected Vietnam’s stock markets adversely”. But, inconsistent with the study conducted in Vietnam our results have shown a positive interaction between the COVID-19 confirmed cases and the debt securities yield of Sri Lanka.

Furthermore, the bottlenecks associated with debt securities market operations should be addressed by the Sri Lankan financial market regulations to improve efficiency. Investors, therefore, should adopt various effective strategies and diversify their investment portfolios across both equity and debt securities to mitigate the significant impacts of a COVID-19 pandemic and future unexpected events on their investment. Sri Lankan government should focus on implementing appropriate measures and policies to protect the financial market from the expected future uncertainties to mitigate the impact.

5.1. Recommendations

Here, Short -term debt securities yields are used because the pandemic considerably has a significant impact in the short-term. The effect of such pandemics is always at the peak in the time of impact and gradually decline over time. But even though there is scope for future researchers, they can also measure and analyze the impact of pandemics on intermediate and long-term debt securities. Which will be a step for further addition in this field of study.

Moreover, Sri Lanka's debt market composition is highly dominated by government debt securities. The corporate debt securities have a residual market share of around 35%. Unlike, the government debt securities yield the private debt security yields are fixed for a certain period and they may differ across the companies and industries. So, it will be appropriate to study the corporate debt securities separately since it is a complex area. This can be considered to proceed that in the upcoming research by future practitioners. The industry average is also can be used in the study related to this subject matter.

6. References

- Amin, A., Arshad, M., Sultana, N., & Raof, R. (2021). Examination of impact of COVID 19 on stock market: evidence from American peninsula. *Journal of Economic and Administrative Sciences*, ahead-of(ahead-of-print). <https://doi.org/10.1108/jeas-07-2020-0127>
- Ngaruiya, M. & Njuguna, A. (2016). Influence of inflation on Bond Prices: A Survey of Bonds Listed at the Nairobi Securities. *American Journal of Economics* Vol.1. Issue No.2, pp 50-63, 2016.
- Anh, D. L. T., & Gan, C. (2020). The impact of the COVID-19 lockdown on stock market performance: evidence from Vietnam. *Journal of Economic Studies*, 48(4), 836–851. <https://doi.org/10.1108/jes-06-2020-0312>
- Annual Report 2020 | Central Bank of Sri Lanka. (2020). Central Bank of Sri Lanka. <https://www.cbsl.gov.lk/en/publications/economic-and-financial-reports/annual-reports/annual-report-2020>.
- Annual Report 2021 | Central Bank of Sri Lanka. (2021). Central Bank of Sri Lanka. <https://www.cbsl.gov.lk/en/publications/economic-and-financial-reports/annual-reports/annual-report-2021>.
- Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance*, 54, 101249. <https://doi.org/10.1016/j.ribaf.2020.101249>
- Bae, G., & Kim, H. J. (2019). Relation between early e-WOM and average TV ratings. *Asia Pacific Journal of Marketing and Logistics*, 32(1), 135–148. <https://doi.org/10.1108/apjml-10-2018-0402>
- Bierens, H. J., & Guo, S. (1993). Testing stationarity and trend stationarity against the unit root hypothesis. *Econometric Reviews*, 12(1), 1–32. <https://doi.org/10.1080/07474939308800252>
- Breusch, T. S., & Pagan, A. R. (1979). A Simple Test for Heteroscedasticity and Random Coefficient Variation. *Econometrica*, 47(5), 1287. <https://doi.org/10.2307/1911963>

Buszko, M., Orzeszko, W., & Stawarz, M. (2021). COVID-19 pandemic and stability of stock market—A sectoral approach. *PLOS ONE*, 16(5), e0250938. <https://doi.org/10.1371/journal.pone.0250938>

Coronavirus (COVID-19) Sri Lanka - Analytics Dashboard. (2021). Ministry of Health, Sri Lanka. <https://hpb.health.gov.lk/covid19-dashboard/>

Corporate Finance Institute. (2022, January 14). Variance Inflation Factor (VIF). <https://corporatefinanceinstitute.com/resources/knowledge/other/variance-inflation-factor-vif/>

Harjoto, M. A., & Rossi, F. (2021). Market reaction to the COVID-19 pandemic:

evidence from emerging markets. *International Journal of Emerging Markets*, ahead-of(ahead-of-print). <https://doi.org/10.1108/ijoem-05-2020-0545>

Huq, F., Jones, V., & Hensler, D. A. (2021). A time series projection model of online seasonal demand for American wine and potential disruption in the supply channels due to COVID-19. *International Journal of Wine Business Research*, ahead-of(ahead-of-print). <https://doi.org/10.1108/ijwbr-03-2021-0015>

Insaidoo, M., Arthur, L., Amoako, S., & Andoh, F. K. (2021). Stock market performance and COVID-19 pandemic: evidence from a developing economy. *Journal of Chinese Economic and Foreign Trade Studies*, 14(1), 60–73. <https://doi.org/10.1108/jcefts-08-2020-0055>

Jarus, O. (2021, November 15). 20 of the worst epidemics and pandemics in history. *Livescience.Com*. <https://www.livescience.com/worst-epidemics-and-pandemics-in-history.html>

Jayakody, S. G. (2017). The impact of the Sri Lankan Civil War on the Stock market Performances. *International Journal of Economics and Financial Issues*, 2017, 7(1), 394-402.

Mansfield, E. R., & Helms, B. P. (1982). Detecting Multicollinearity. *The American Statistician*, 36(3a), 158–160. <https://doi.org/10.1080/00031305.1982.10482818>

Mezghani, T., Boujelbène, M., & Elbayar, M. (2021). Impact of COVID-19 pandemic on risk transmission between googling investor's sentiment, the Chinese stock and bond markets. *China Finance Review International*, 11(3), 322–348. <https://doi.org/10.1108/cfri-08-2020-0120>

Schoenfeld, J. (2020). The Invisible Risk: Pandemics and the Financial Markets. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3567249>

Singhania, M., & Gupta, A. (2011). Determinants of foreign direct investment in India. *Journal of International Trade Law and Policy*, 10(1), 64–82. <https://doi.org/10.1108/14770021111116142>

Sri Lanka: WHO Coronavirus Disease (COVID-19) Dashboard With Vaccination Data. (2021). WHO Coronavirus (COVID-19) Dashboard with Vaccination Data. <https://covid19.who.int/region/searo/country/lk/>

Sumagaysay, L. (2020, November 27). The pandemic has more than doubled food-delivery apps' business. Now what? *MarketWatch*. <https://www.marketwatch.com/story/the-pandemic-has-more-than-doubled-americans-use-of-food-delivery-apps-but-that-doesnt-mean-the-companies-are-making-money-11606340169>

Thazhungal Govindan Nair, S. (2021). On extreme value theory in the presence of technical trend: pre and post Covid-19 analysis of cryptocurrency markets. *Journal of Financial Economic Policy*, ahead-of(ahead-of-print). <https://doi.org/10.1108/jfep-09-2021-0242>.

Vijaya Kittu, M., & Betsy Beatrice, B. (2019). Debt Market Crisis and its impact on Debt Mutual Funds. *Recent Trends in Indian, Financial System: Paradigms and Praxis*. Kottayam: Kristu Jyothi College of Management & Technology.

Wu, X., & Hui, X. (2021). The Impact of COVID-19 on the Dependence of Chinese Stock Market. *Discrete Dynamics in Nature and Society*, 2021, 1–11. <https://doi.org/10.1155/2021/5588562>

Zaghini, A. & European Central Bank. (2021). The Covid Pandemic in the Market: Infected, Immune and Cured Bonds. Universitätsbibliothek Johann Christian Senckenberg.