ASSESSING DYNAMICS OF MACROECONOMIC VARIABLES ACROSS THE SOUTH ASIAN REGION

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Researcher:

Roshan Bhatta,

Daayitwa Nepal Public Policy Fellow 2023

Government Supervisor

Nepal Rastra Bank (NRB)

Mentor:
Dr. Chandan Sapkota
Consultant, Asian Development Bank

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Roshan Bhatta
Daayitwa Nepal Public Policy fellow, 2023

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Abstract

Economic shocks in a country can affect other countries due to openness and cooperative relations between these countries. In addition, the effect on an economic variable will be responded to by other related variables such as Economic Growth, Imports, Exports, and Foreign Currency Reserves. This quantitative research aims to measure the factors that affect the economy in 5 South Asian countries from 1980 - 2021. The method used is panel vector autoregressive (PVAR). The results of the research were divided into several tests. The causality tests suggest one-way causal relationships between GDP and Imports, as well as between Reserve and GDP. Reserve also causes Exports and Imports, but not vice versa. Other variables do not display significant causal relationships with each other because the estimation results show a probability value above 0.05.

The PVAR model results reveal intricate relationships among the variables. Exports exhibit a mixed impact on GDP, with a positive effect at lag 1 and a negative effect at lag 2. Imports similarly show a dual impact on GDP, with a negative effect at lag 1 and a positive effect at lag 2. Conversely, the Reserve consistently exerts a positive influence on GDP at both lags. In the context of Exports, GDP has a positive effect at lag 1 but a negative impact at lag 2, while Exports also impact themselves negatively at lag 1 and positively at lag 2. Imports negatively affect Exports at both lags, and Reserve shows a significant negative effect at lag 1. Importantly, Reserve does not display a significant effect on Exports. The IRF results indicate the effects of shocks on the variables over time, with each variable responding differently to shocks in GDP. Lastly, the results of the VD test show that the variation in the value of macro-economic variables in 5 South Asian countries is more influenced by the variable itself than other variables throughout the study period. In addition, GDP is also the largest contributor to variations in the value of economic variables both in the short and long term.

Chapter 1

1.1 Introduction

The COVID-19 global pandemic which started as a health crisis, swiftly evolved into a human crisis with profound economic ramifications. The shutdowns have led to economies being stumbled, global and regional value chains being disrupted, and millions of people have lost their jobs. This cascade of events led to the most severe global recession with a staggering reduction of over 4.9% in global GDP during the second quarter of 2020 (Siddiqui, 2020; Padhan and Prabheesh, 2021). The global economy still remains in a precarious state due to the overlapping negative shocks of the pandemic, the Russia-Ukraine war, and the sharp tightening of monetary policy to contain high inflation (World Bank, 2023). South Asian economies economic growth is also projected to weaken in 2023-24 and is not anticipated to regain their pre-2020 growth level until 2025 because of ongoing and lagged impacts of domestic and global policy tightening and the aftermath of crises and disasters in several economies (World Bank, 2023).

The COVID-19 pandemic and further negative shocks have disrupted the macroeconomic landscapes of nations worldwide. Public expenditure increased drastically to support social protection schemes, but revenue mobilization slowed down due to the decline in tourist arrivals and a general economic slowdown, leading to deterioration in fiscal and debt situation. Because of high globalization, economic integration and interconnectedness among the economies of the world, countries are vulnerable to being affected by one another due to global economic shocks. Like climate change, pandemics are now global risks as it can spread around the world quickly, regardless of where it originates (Acharya and Porwal, 2020; Ibn-Mohammed et al., 2020).

Government-imposed lockdowns and stringent measures, enacted to curb the virus's propagation, have cast a substantial shadow over the South Asian economies, with sectors such as tourism, hospitality, manufacturing, construction, agriculture, transportation, and trade acutely impacted (ESCAP, 2020). Notably, the pandemic-induced downturn has significantly affected remittance flows, with an anticipated 23% reduction in India, Pakistan, and Bangladesh, and a projected 14% decrease in Nepal. Collectively, remittance flow in South Asia were expected to decline from US$ 140 billion in 2019 to US$ 135 billion in 2020, further declining to US$ 120 billion in 2021 (World Bank and KNOMAD, 2020). Migration and resultant remittances serve as vital sources of livelihood for millions of economically disadvantaged households in the region (KNOMAD, 2020; World Bank, 2020c).

While the measures of physical distancing and lockdowns have been instrumental in preserving lives and combating the virus, they have substantial disruptions upon the lives and livelihoods of a significant population within South Asia, which is home to a substantial portion of the world's poorest population (ESCAP, 2020). The global crisis has impacted all nations, however, the magnitude of the economic impact of the pandemic has not been the same for all countries, each country has been impacted differently. This study aims to comprehensively diagnose the key macroeconomic variables of different south Asian countries and analyze the impact of COVID-19 on macroeconomic indicators within South Asian countries. To the best of our knowledge, no comparable study has yet been undertaken within the South Asian context.

This paper, hence, aims to explore the effects of COVID-19 on macroeconomy particularly output, trade and external sectors of South Asian countries namely Bangladesh, India, Nepal, Pakistan and Sri Lanka with the analytical methods used, namely comparative and descriptive. These variables are considered capable of describing economic conditions in a country. Fluctuations from one variable will affect other variables either directly or indirectly so this can affect overall economic stability. South Asian countries were chosen because they are geographically close and exhibit similar characteristics (such as high dependence on agriculture, limited fiscal space, sizable remittances and outmigration, etc.) in addition to being a member of a regional trade bloc (SAFTA). This closeness makes the flow of cooperation between countries even greater so that each country is dependent on one another. The attachment to this relationship is for researchers to see the response of economic variables due to shocks that occur and their influence on one another. Therefore, we employ the Panel Vector Autoregressive model (PVAR) to study the impact of COVID-19 shock on the South Asian Economies, employing a comprehensive dataset spanning the years 1980 to 2021.

The remainder of the study is organized as follows. The next section mentions the objectives of the study followed by significance and the limitation of the study. Section 2 presents a brief literature review. Section 3 presents data and methodology, which is followed by empirical analysis in section 4. Chapter 5 presents the conclusion. Finally, there is special section 6 which presents Economic turmoil in Sri Lanka and Lessons for Nepal

1.2 Objectives

Overall, this study aims to provide a comparative analysis of the key macroeconomic variables to understand the impact of Covid-19 pandemic on the South Asian Economy. This study aims to

enhance our understanding of the economic implications of the pandemic and inform policy decisions for effective recovery and resilience building.

- To assess and compare the impact of the Covid-19 pandemic on the macroeconomic variables (GDP, Inflation, Current account balance, Exports, Imports, Remittances, and foreign currency reserves) of the selected South Asian Economies.
- To visualize the trend of major macroeconomic indicators and perform exploratory data analysis to identify initial patterns and correlations between COVID-19 and macroeconomic indicators.

1.4 Limitation of the study

The study acknowledges that limitations in accessing up-to-date and comprehensive data can pose a significant challenge. Variations in the accuracy and completeness of data related to COVID-19 cases, macro-economic indicators, and other relevant variables across countries can hinder the accuracy of comparative analysis. Multiple factors can influence economic outcomes, and isolating the specific impact of COVID-19 can be difficult. The study recognizes that economic, social, and political contexts vary significantly among South Asian countries. The impact of the pandemic on economic activity is heterogeneous across countries and regions due to differences in these contextual factors. Failing to account for these variations may limit the validity of comparative analyses.

Chapter 2: Literature Review

2.1 Review of Literature

The macroeconomic literature extensively investigates the propagation of macroeconomic shocks like fiscal policy shocks or shocks like COVID-19. In particular, any shock in one country may have cross-border effects due to global interdependencies and due to the open economy. Work by Zimmermann et al. (2020) finds that countries that are more globalized are affected by the pandemic earlier and to a larger extent. For example, Canova et al. (2012) have studied how shocks to U.S. interest rates are propagated to ten European economies, seven in the Euro area and three outside of it, and how German shocks, defined as shocks which simultaneously increase domestic output, employment, consumption and investment, are transmitted to the remaining nine economies. Caivano (2006) investigates how disturbances generated in the Euro area are transmitted to U.S. and vice-versa, when these two units are included into a world economy. Alternatively, one may want to examine whether shocks generated outside of a country (or an area) dominate the variability of domestic variables (see Canova, 2005; Rebucci 2010).

CCSA (2020) assessed how COVID-19 is changing the world: a statistical perspective in the world with analytical and descriptive tools. In the quantitative assessment, CCSA (2020) found 40 percent falling global FDI in 2020, 20 percent falling global manufacturing output in April 2020, 150 million full time job loss, pushing additional 71 to 100 million people into extreme poverty and unprecedented decline in the HDI and 43 percent decline in remittance inflow. United Nations Department of Economic and Social Affairs (UNDESA, 2020) expects the cumulative output loss during 2020 and 2021 to be nearly $8.5 trillion wiping out nearly all output gains of the previous four years (UN DESA, 2020).

The G7 countries, the world's largest economies, and China are among the most affected countries by Covid-19 (Baldwin and Weder di Mauro, 2020). Cheng, Kim, and Koh, (2020) considered it as evidence of global health and economic crisis. McKibbin and Fernando (2020) analyze the effects of COVID-19 on macroeconomic variables and financial markets using a CGE model for 20 countries including Turkey. They found a significant impact of the outbreak in the short run under seven different scenarios. Bonadio et al. (2020) study the impact of Covid-19 on output growth in 64 countries and investigate the contribution of global supply chains to these adverse effects. Milani (2020) uses a GVAR model to underscore the importance of countries interconnections in the evolution of Covid-19 and its unemployment effects. Although South Asian countries have been

relatively successful in containing the spread of the virus and saving people's lives in the early months of the pandemic, the success has come at a high economic cost due to extended lockdowns which directly impacted economic activities. It was estimated that the Indian economy incurs a loss of US$ 4.64 billion for locking down the economy for a single day (Acuité Ratings, 2020). COVID-19 caused Pakistan's GDP growth rate to fall to -0.4% against the pre-COVID-19 estimates of 2.2%, a contraction of 2.6%. The adverse impact of COVID-19 on real GDP growth of Afghanistan and Sri Lanka was even stronger and GDP contracted by 5.9% and 8.6% respectively in 2019 against the estimates of growth rates of 2.4% and 3.4% respectively (Javed, 2021).

South Asian exporters were facing a growing challenge also due to cancellation of export orders. Bangladesh with high dependence on a few products such as readymade garments (that account for more than 84% of exports) and limited markets such as the US and the European Union (EU), with little possibility of finding alternative markets for those products in the domestic market has faced this challenge. It is estimated that export orders worth US$ 3 billion were either cancelled or suspended by global garment retailers and brands due to COVID-19. (Russel, 2020).

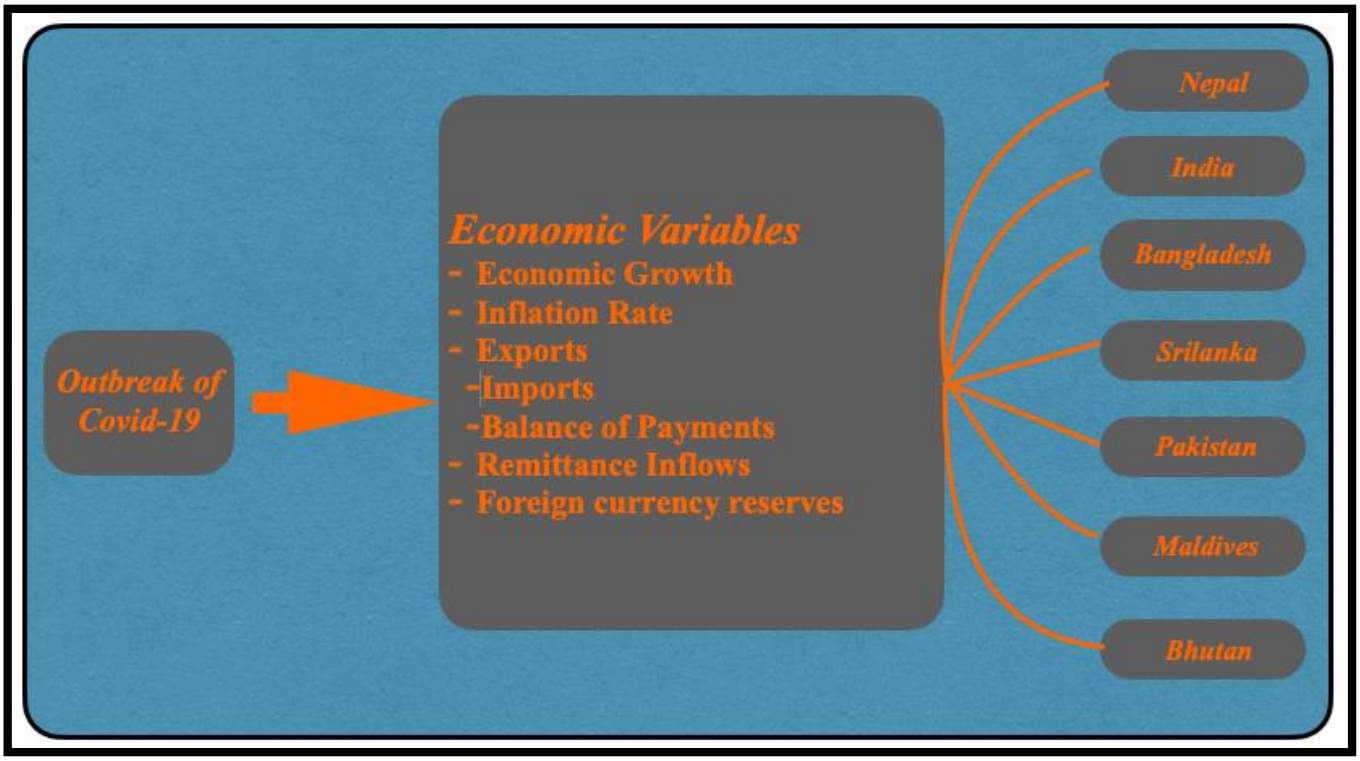
Nepal too saw cancellation of export orders, especially in the handicrafts sector for which EU and USA are major markets, amounting to nearly US$ 165 million, leading to exporters holding unsold inventory and bank loans. The handicraft sector provides direct and indirect employment to more than 1.1 million people (Prasain, 2020). India is also stated to have lost export orders worth US $ 25 billion with cancellation of 50 to 60% of orders of all sectors.

The sectors like apparel, leather (footwear), handicrafts and carpets have seen cancellation of 80 percent of orders during February- March 2020 (Mathew, 2020). Almost 80% of the gems and jewelry from India are exported to the US, Hong Kong, and China, which has seen a drastic fall with the cancellation of almost 25-30% of its orders (Ravichandran et. all., 2020). Pakistan's exports have seen a 54% reduction due to order deferrals and cancellations, mainly in the textile sector (Xinhua, 2020). Sri Lanka's apparel industry which accounts for almost 52% of merchandise exports is expecting to lose US $ 1.5 billion worth of orders during March to June 2020 due to COVID-19 (Hamza, 2020). Overall, in South Asia, export growth will be from −6.8 to −3.9% and import growth from −7.3 to −6.2% due to reduced external demand, which will be low even beyond the lockdown period in 2021 (World Bank, 2020a).

Keeping these views in to consideration in the light of mentioned literature here, it is reasonable to say that covid-19 changed the reality of the world. It has affected the entire economy and its variables globally, and Nepal as well as South Asia is not far from its effects. Therefore, this research topic has been selected as an appropriate context for the research because there is paucity of studies relating negative impact of covid-19 on macroeconomic variables of south Asian economies. Since the growth path, the dynamic responses to shocks and the transmission across sectors, markets or countries may substantially differ, it is unpalatable from an economic point of view, to treat all units symmetrically or just considering aggregates such as the EU or the ASEAN-area, or the SAARC region, disregarding country specific peculiarities. The presence of dynamic heterogeneities suggests that there is ample room to study the severity of the pandemic and how the shocks are transmitted across countries. This might help understand the potential sources of heterogeneities; to analyze how past tendencies have created the current status quo and how one should expect the current situation to evolve in the future; and to provide policymakers with facts that can help to build alternative scenarios and formulate policy decisions.

2.2 Conceptual Framework

Figure 1: Conceptual Framework



Source: Authors illustration

To address potential macro-economic impact due to the recent pandemic, a systematic literature review of peer-reviewed and grey literature, as well as the websites of national and international organizations was conducted to assess the current scenario. The conceptual framework was used to explore the probable effects of the COVID-19 on South Asian economies through reviewing research papers, articles, newspapers, newsletters, and bulletins. Macroeconomic consequences of the COVID-19 outbreak were formulated after reviewing a significant number of articles and literature. A diagram was drawn that represented cause-effect relationships. The impact of COVID 19 on macro-economic indicators of selected South Asian countries is depicted in Figure 1

Chapter 3: Data and Methodology

3.1 Research Method

This study uses a quantitative approach using secondary data published by the World Bank and IMF website. The variables chosen are proxies for macroeconomic variables, namely Gross Domestic Product (GDP), Exports, Imports and Foreign Currency Reserves. The objective of this research was to use five south Asian countries, namely Nepal, India, Bangladesh, Pakistan, and Sri Lanka. Bhutan and Maldives were excluded from the study due to the lack of data. The selection of the object was based on several criteria, namely the geographical location of each country which is close to each other in the South Asian region, having cooperative relations between countries, and the availability of published economic variable data during the research period.

3.2 Visualization and Exploratory Data Analysis

Under quantitative research design, this study is descriptive as well as analytical in nature. Data visualization and exploratory data analysis were used to identify initial patterns and correlations between COVID-19 and macroeconomic indicators, guiding further investigation. Analytical tool of the study is descriptive statistics to describe two periodical data sets of COVID-19 and macro-economic variables in the pre and post COVID-19 and analyze their dynamics. In the descriptive statistics, the study analyzes trend and pattern of COVID-19 and macro-economic variables of the South Asian countries.

3.3 Panel Vector Autoregressive Modelling (PVAR)

The data analysis model uses the Panel Vector Autoregressive (PVAR) method which combines time series and cross section data. Terms like “global economies”, “global interdependencies”, “global transmission” have become part of everyday discussions. This means that economies, regions or sectors can no longer be treated in isolation and spillovers are now prevalent. In this new global order, where shocks are quickly propagated and contagion effects are important, substantial heterogeneities remain. Heterogeneities have different origin, but income, initial conditions, geographical, trade and financial developments, institutions and culture are often indicated as the factors driving them. One tool that is able to consider dynamic and static global interdependencies as well as cross-sectional heterogeneities is the panel vector autoregressive (PVAR) model.

A PVAR model includes several countries and country-specific variables in one model. Thus, lagged foreign variables can impact domestic variables, meaning that dynamic interdependencies exist. Static interdependencies between two variables of two countries occur if the covariance between the two is nonzero. Finally, the PVAR model accounts for heterogeneity across countries since the coefficient matrices can vary across economies. Many authors have also argued that a rapidly rising degree of trade and financial market integration has induced closer international interdependences within the developed world and between developing and developed world (Kose et al., 2003, Canova et al., 2007, Kose and Prasad, 2010). Thus, a multilateral perspective is crucial, and failure to recognize this aspect of reality is likely to induce distortions in the evaluation of economic outcomes and erroneous policy decisions. Therefore, we employ Panel Vector Autoregressive model (PVAR) to study the impact of COVID-19 shock on the South Asian Economies: Nepal, India, Pakistan, Sri Lanka, and Bangladesh.

Chapter 4: Empirical Analysis

4.1 Economic growth rate of Global economies and South Asian economies

The effect of COVID-19 is projected to be more severe than that of the depression of 1930s and financial crisis of 2009, by IMF. During 2020 and 2021, due to this outbreak, a loss of about 9 trillion US Dollar equivalent in global GDP is estimated. Per capita income of 170 IMF member countries is projected to decline. The economic growth rate of world becomes negative during the COVID-19 period.

Table 2: Global Economic Growth rate (in Percent)

Economy	2015	2016	2017	2018	2019	2020	2021
World Economy	3.1	2.8	3.4	3.3	2.6	(3.1)	6.0
South Asia	7.3	7.7	6.5	6.3	3.9	(4.7)	8.3
Sub-Saharan Africa	2.9	1.3	2.4	2.6	2.6	(2.0)	4.2
East Asia and Pacific	4.7	4.7	5.1	4.8	4.0	(0.1)	6.1
Europe and Central Asia	2.1	1.9	2.9	2.2	1.8	(5.6)	6.0
North America	2.5	1.6	2.3	2.9	2.3	(2.9)	5.9
European Union Countries	2.3	2.0	2.8	2.1	1.8	(5.7)	5.5
Middle East and North Africa	2.7	4.4	1.8	2.1	1.2	(3.8)	4.4

Source: World Bank Data, 2023

Economic growth rate of South Asian nations was in better state as the economic growth was positive prior to the pandemic except the Sri Lankan economy. Sri Lanka was facing economic crisis before the start of the pandemic and it got worse during the pandemic period. During the pandemic, all the South Asian countries economic growth becomes negative except Bangladesh.

Table 3: Economic Growth Rate of South Asian Countries (in percent)

Countries	2015	2016	2017	2018	2019	2020	2021
Bangladesh	6.55	7.11	6.59	7.32	7.88	3.45	6.94
Bhutan	6.66	8.13	4.65	3.06	5.76	(10.01)	4.09
India	8.00	8.26	6.80	6.45	3.87	(5.83)	9.05
Maldives	2.88	6.34	7.21	8.12	7.10	(33.49)	41.75
Nepal	3.98	0.43	8.98	7.62	6.66	(2.37)	4.84
Srilanka	4.21	5.05	6.46	2.31	(0.22)	(4.62)	3.51
Pakistan	4.73	5.53	4.43	6.15	2.50	(1.27)	6.49

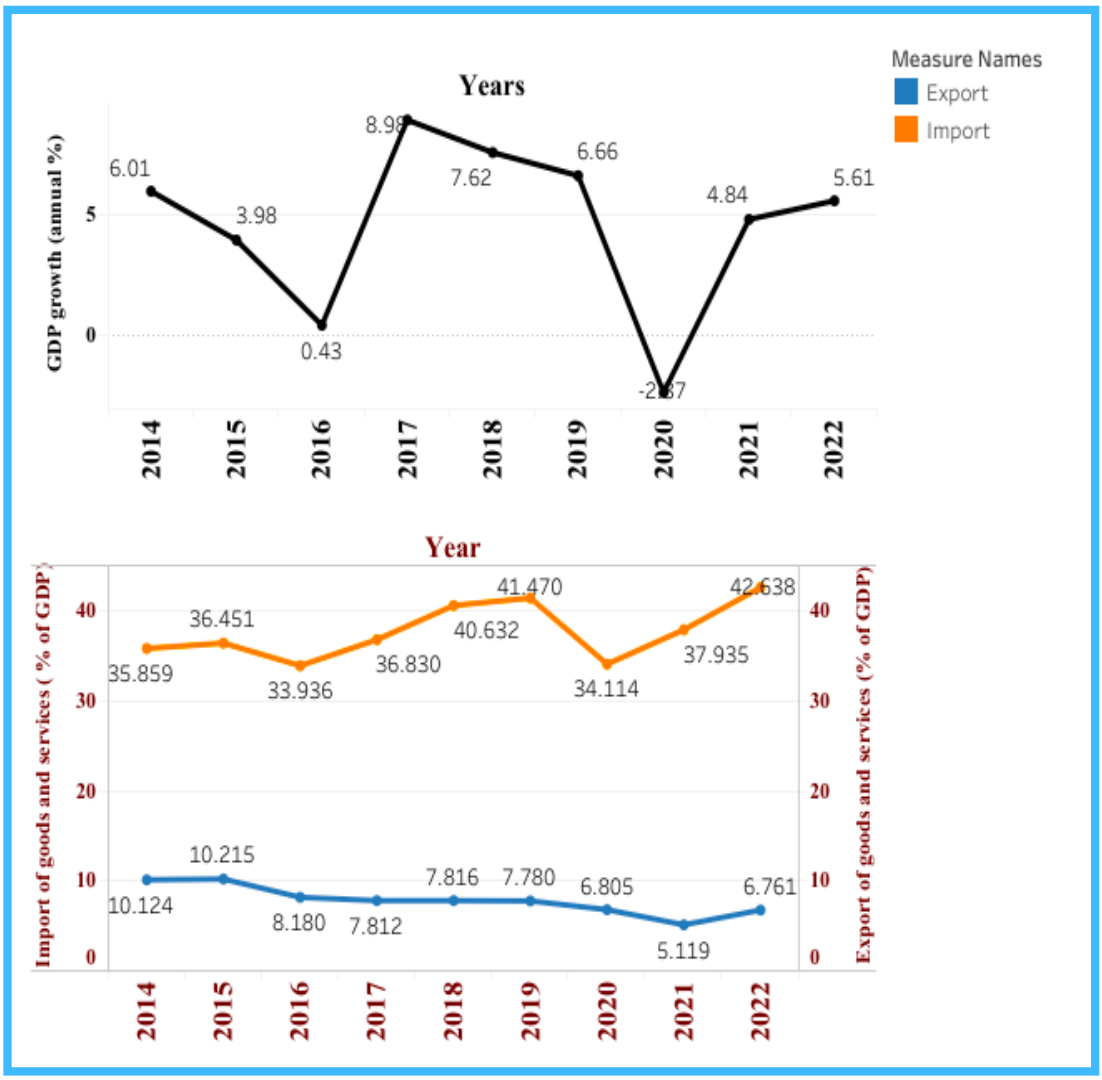
Source: World Bank Data, 2023.

4.2 The State of the Nepalese Economy on the Eve of Covid-19 Outbreak.

In order to assess the impacts of the Covid-19 shock, it is extremely important to review the state of the economy on the eve of the outbreak. Let us take a look at some of the common measures used to evaluate the overall health of an economy.

Till the mid-March of fiscal year 2019/20, before the Nepal Government announced a nationwide strict lockdown, the macroeconomic indicators were balanced and satisfactory. Macroeconomic indicators by mid-March of fiscal year 2019/20 are found satisfactory. Inflation rate, balance of payment situation, foreign exchange reserves, investment and financial indicators are found conducive to economic stability

Figure 2: GDP growth, Import and Export of goods and services

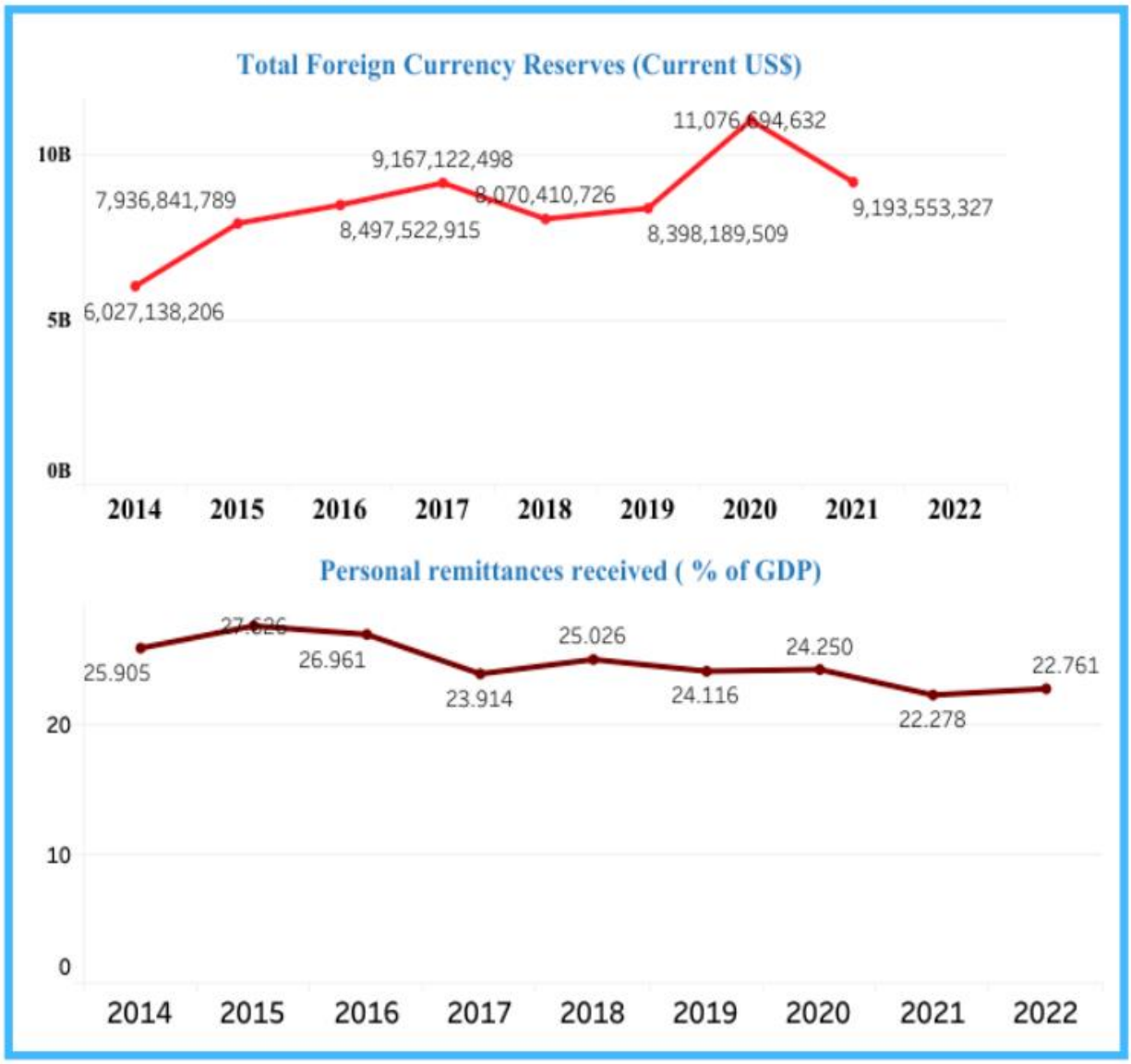


Source: World Bank Data

Due to the contraction in import and expansion in export there is an improvement in trade deficit and balance of payments is in surplus. Although rapid expansion in overall economic activities was experienced till mid-March of 2019/20, the pandemic of COVID-19 has affected the global economy and due to this, the growth of the Nepalese economy is preliminarily estimated to remain 2.3 percent. The average economic growth rate over the last three years has remained 7.3 percent (in producer's

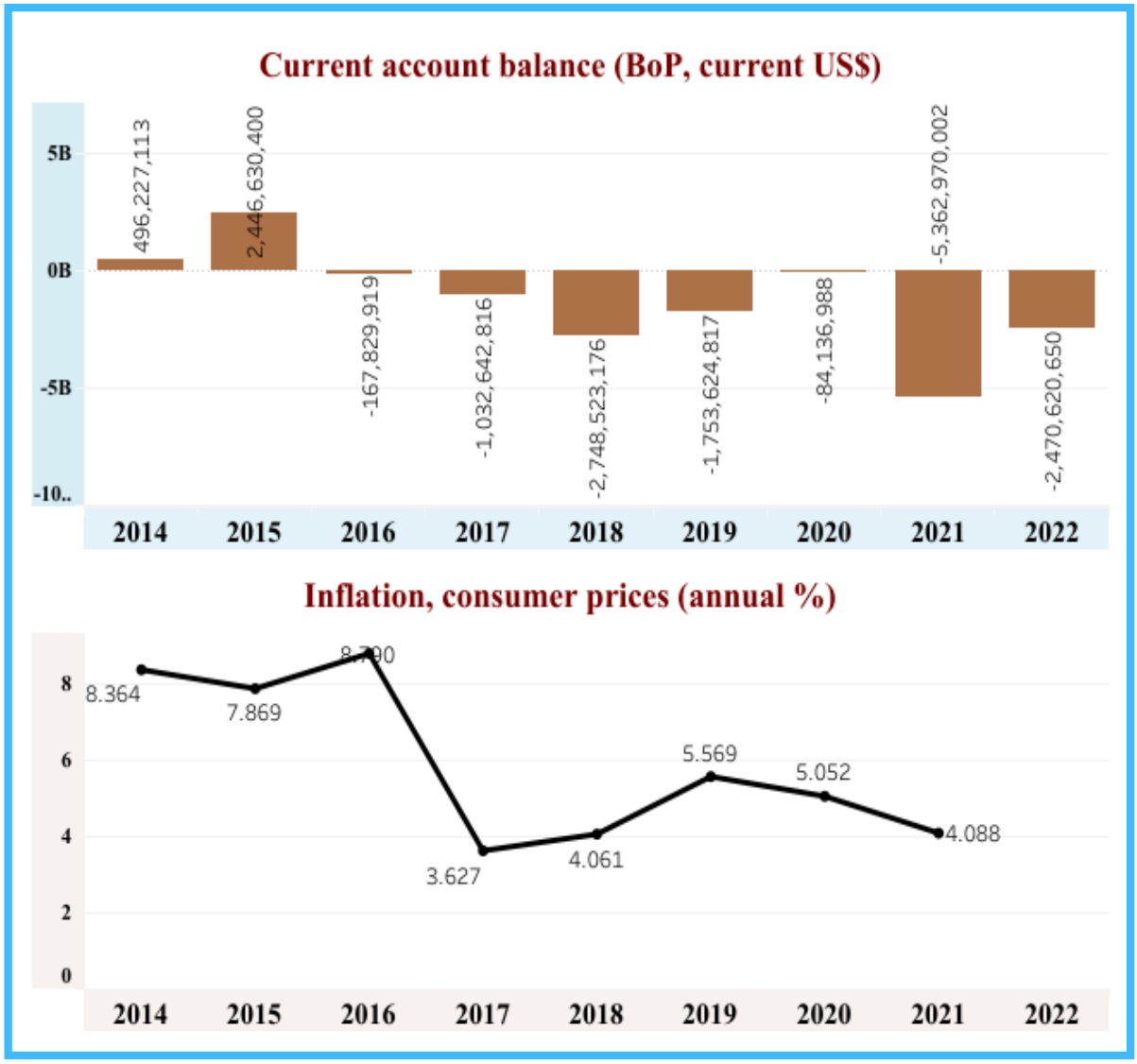
price). Per capita gross domestic product (GDP) (in current price) is estimated to increase by 7.5 percent in comparison to that of the last fiscal year and reach US Dollar 1,085 (Rs.126,018) in fiscal year 2019/20.

Figure 3: Total Foreign Currency Reserves and Personal remittances



In the last few years, the inflation rate has maintained below the average of a decade. Till mid-March of fiscal year 2019/20, the average consumer price inflation is 6.5 percent. In the corresponding period of the last fiscal year such inflation rate was 4.2 percent. The absolute level of poverty is estimated to remain at 16.67 percent in fiscal year 2019/20, which was 18.7 percent in fiscal year 2017/18. By mid-March of fiscal year 2019/20, export of merchandise has increased by 22.3% to Rs.74.91 billion whereas the import of merchandise has reduced by 2.6 percent to Rs.924.24 billion. During this

Figure 4: Current account balance and Inflation



Source: World Bank Data

period, deficit in trade in merchandise is reduced by 4.3 percent to Rs.849.33 billion. During the corresponding period of the fiscal year 2018/19 such trade deficit was increased by 24.4 percent to Rs.887.88 billion. Balance of payment situation till mid-March of 2018/19 was deficit by Rs.58.99 billion whereas it has become surplus by Rs.37.84 billion during the corresponding period of fiscal year 2019/20. During the mid-March 2018/19, the current account deficit was Rs.191.49 billion which was reduced to Rs.124.93 billion by mid-March of fiscal year 2019/20, due to some improvement. By mid-March of fiscal year 2019/20 the remittance inflow had increased by 1.8 percent to Rs.592.42 billion. During the corresponding period of the last fiscal year the remittance inflow had increased by 23.4 percent to Rs.582.19 billion. The total foreign exchange reserve has reached Rs.1136.51 billion in mid-March 2020 compared to Rs.1039 billions in mid-July 2019. This

reserve is adequate to meet the import of goods and services for 8.8 months and import of goods for 10 months. In totality, the basic indicators of the economy and development activities were satisfactory just before the measures adopted to prevent and control coronavirus. Since then, indicators of economic development and stability are under pressure due to the increased slowdown in economic activities.

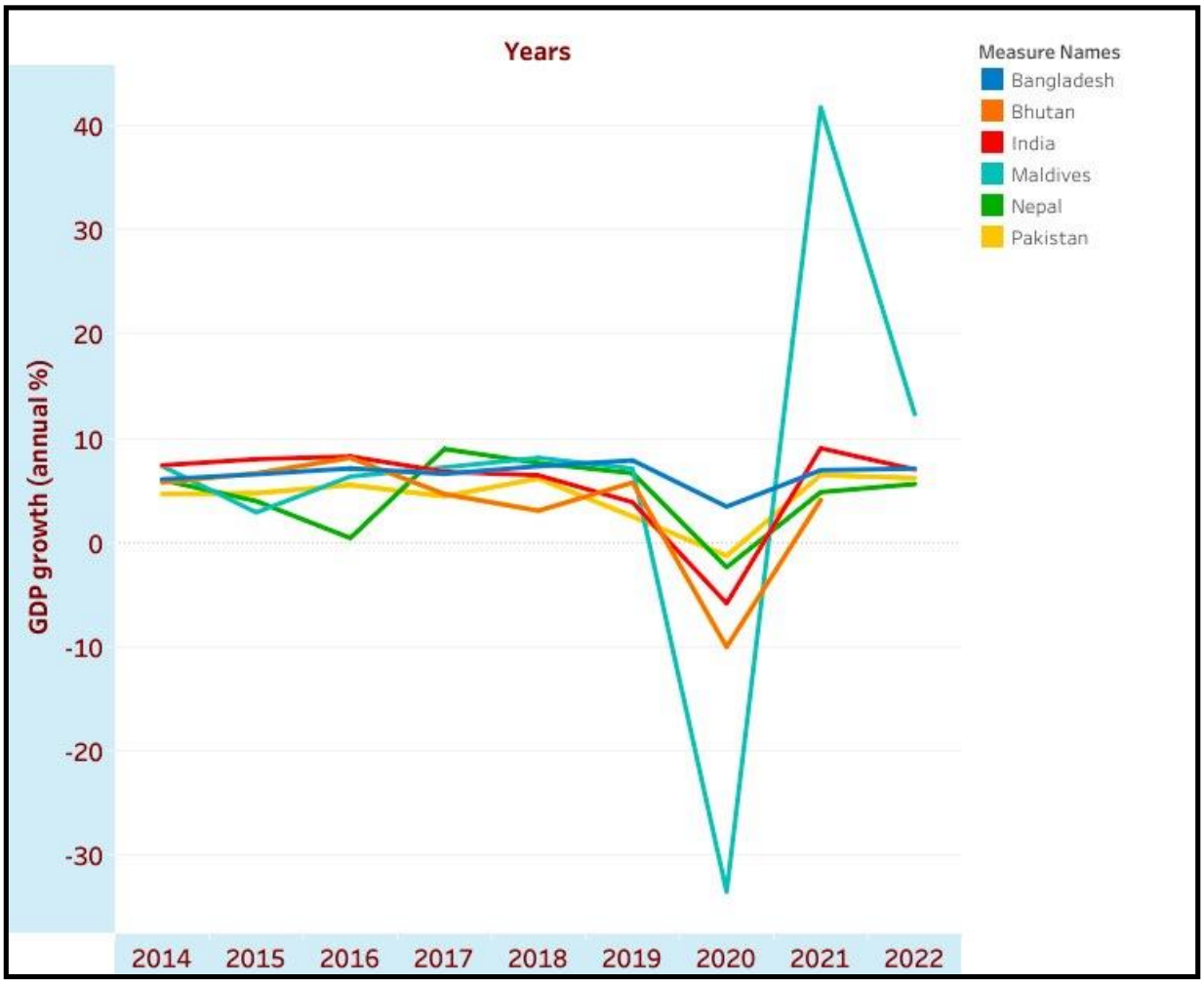
4.3 Effects of COVID-19 on the Major Macroeconomic Indicators of South Asia

4.3.1 GDP growth (annual %)

After the COVID-19 outbreak, the GDP growth of South Asian economies was analyzed using annual percentage change in GDP growth. The impact of the pandemic varied among these countries. The graphical presentation below shows that Bangladesh's GDP growth rate has an increasing trend compared to other South Asian countries. Bangladesh's GDP growth exhibited an upward trend compared to other South Asian nations. In 2020, its growth rate declined from 7.8% to 3.44% due to rising COVID-19 cases and reduced demand for garment exports. Although projected to reach 8.0% in 2021, the growth remained lower. According to World Bank data, Bangladesh's GDP growth was

6.9% in 2021 and 7.09% in 2022. Unlike other South Asian countries that experienced negative growth, Bangladesh's economy contracted significantly but remained positive.

Figure 5: GDP growth (annual %)



Source: World Bank Data, 2023

Pakistan's growth rate was 2.49% in 2019 but turned negative at -1.27% due to the spread of COVID-19 in 2020. Maldives, heavily reliant on tourism, saw its GDP growth drop from 7.09% in 2019 to a decrease of 33.49% in 2020 due to reduced travel. However, by 2021, as lockdowns eased and economic activities resumed, Maldives exhibited a remarkable recovery with a 41.74% growth in GDP.In Sri Lanka, heavily reliant on tourism and garment industries, the GDP growth was -0.22% in 2019, dropping further to -4.62% in 2020 due to economic challenges. A 3.5% growth was achieved in 2021, but issues like debt payment struggles, low exports, increasing imports, and significant tax cuts led to a negative GDP growth of 7.82% in 2022. For Nepal, the year 2018/19 showed promising economic growth with a 6.6% GDP increase. However, the global impact of COVID-19 affected Nepal as well, leading to a negative GDP growth of 2.36% in 2020. The economy rebounded in 2021,

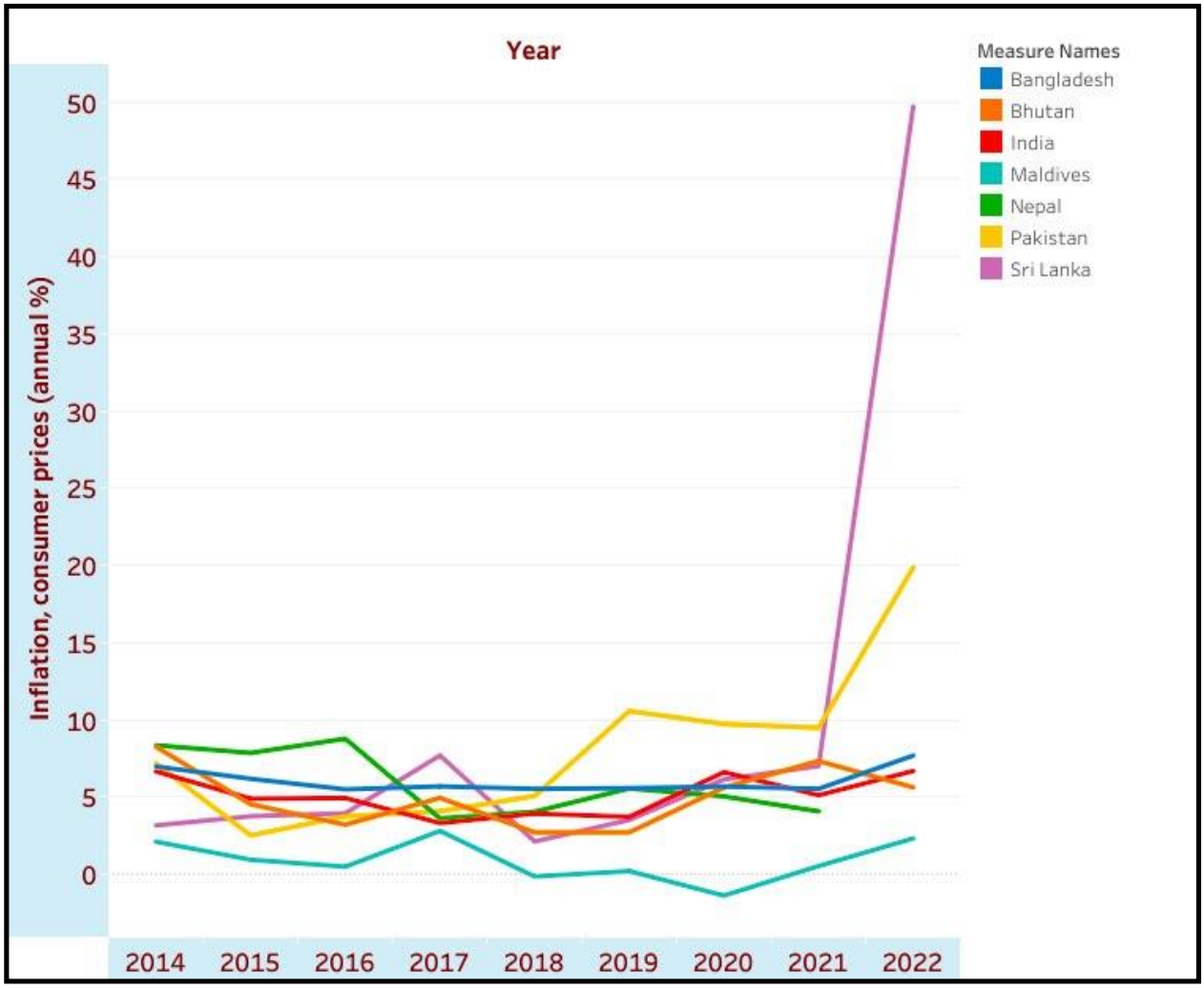
registering a positive growth of 4.83%. Overall, South Asian economies were adversely affected by COVID-19, with varying degrees of impact. Bangladesh maintained positive growth, while other countries experienced negative growth, with Maldives demonstrating a notable rebound in its GDP growth. These insights are based on data from the World Bank.

4.3.2 Inflation rate (consumer prices %)

Nepal had an inflation rate of 4.06%, in 2018 and rising to 5.5% in 2019. The inflation rate decreased slightly during COVID-19, likely due to lower demand. In 2020, inflation was at 5.05%, dropping to 4.08% in 2021. Bangladesh experienced stable inflation around 5.5% before COVID-19, showing no significant change. It is easily observable from the graph that the inflation experienced comparative stability before and after COVID-19 in Bangladesh. However, in 2022, inflation surged to 7.69% due to factors including food and fuel price rises, slow agriculture growth, and currency depreciation.

Bhutan's inflation was lowest at 2.7% in 2019, but it rose to 5.6% in 2020 and 7.4% in 2021 during the pandemic. India's pre-pandemic inflation was around 4%, rising to 6.62% during COVID-19 and further to 6.69% in 2023 due to global conflicts and supply chain restrictions. Maldives experienced negative or low inflation until 2021, but it increased in 2022 due to global oil and commodity price hikes. Inflation remained controlled due to policy-based controls on electricity and staple food prices (Ministry of Finance, Maldives, 2023).

Figure 6: Inflation, consumer prices (annual %)



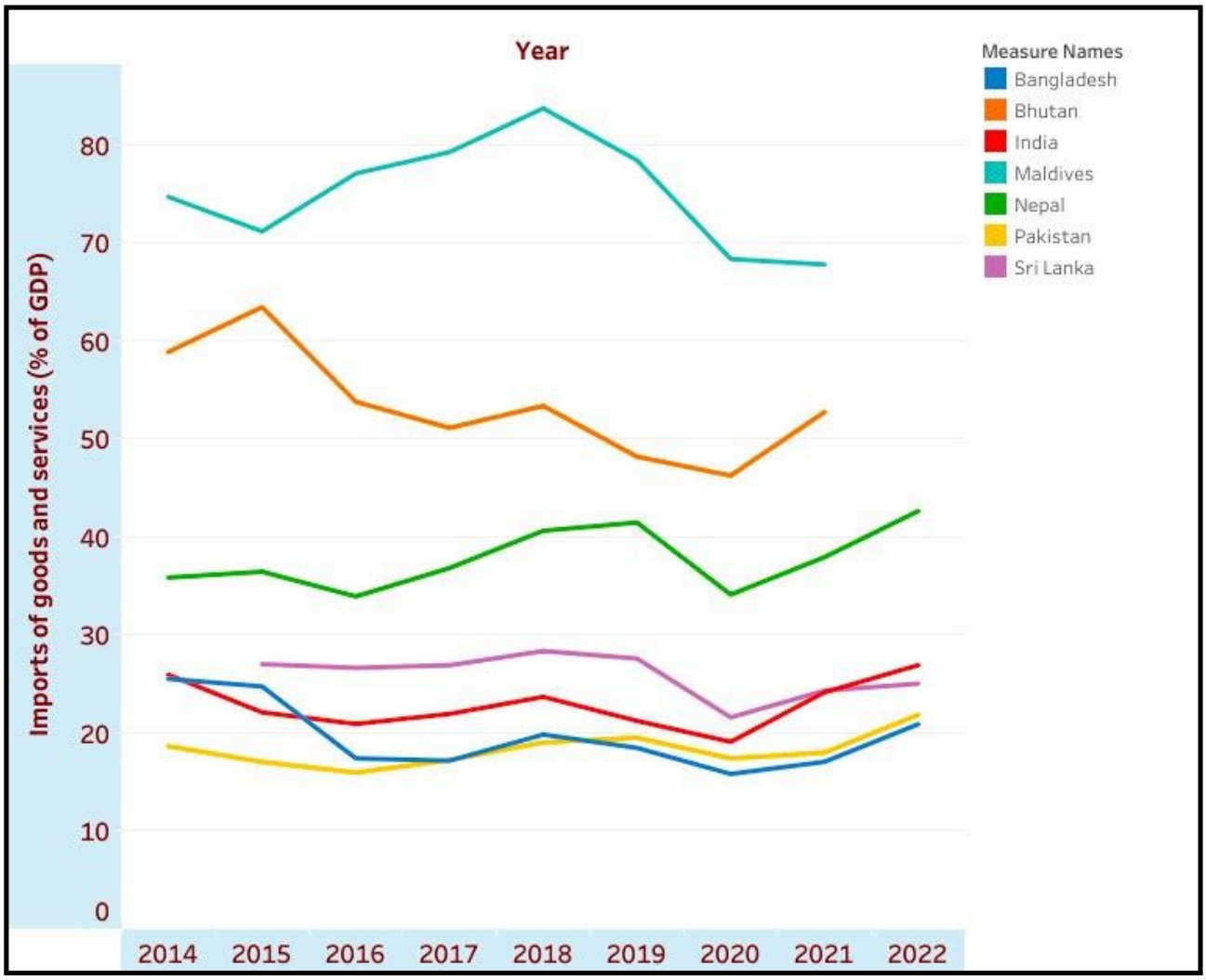
Source: World Bank Data, 2023

Pakistan's inflation was 5.07% in 2018 and rose significantly to 10.57% during COVID-19. In in 2022, it reached an all-time high of 19.87%, attributed to poor harvests, tariff increases, currency depreciation, and the aftermath of COVID-19. The results reveal that covid-19 is the main culprit responsible for double digit inflation. Similarly, other reasons for inflation acceleration are due to poor harvests, tariff increases, and Pakistan's rupee depreciation against the US dollar following the adoption of a more flexible exchange rate. In the year 2022, inflation rate was 19.87%, which was an all time high for the last 10 years and higher than during the peak time of COVID-19 (Ministry of Finance, Pakistan, 2023). Sri Lanka saw inflation rise from 2019, accelerating until 2022 due to factors like imported price increases and cost hikes in various sectors.

4.3.3 Imports of goods and services (% of GDP)

The pandemic spread worldwide and therefore affected not only the South Asian economy but also the markets to which South Asian Economies purchase products and services from abroad.

Figure 7: Imports of goods and services (% of GDP)



Source: World Bank Data, 2023

Imports of goods and services as a % of GDP in Nepal was reported at 36.45 % in 2015 and decreased to 33.93% in 2016 due to the economic blockade imposed by the India due to reservations in the newly formulated constitution of Nepal. And it was increasing until the start of the pandemic. By the end of 2019 it was 41.46% and continued to fall until 2020 and reached 34.11%. As seen in the graph below, imports slowly started to rise after the cross-border transactions started. Imports of goods and services (% of GDP) in Bangladesh was reported at 19.83 % in 2018 and decreased to 18.48% in 2019 due the COVID-19 pandemic and continued to fall till the year 2021 and reached to 17.06%. In the year 2022, it reached to 20.89%. Similarly, Bhutan's imports were 48.18% in 2019 and fall to

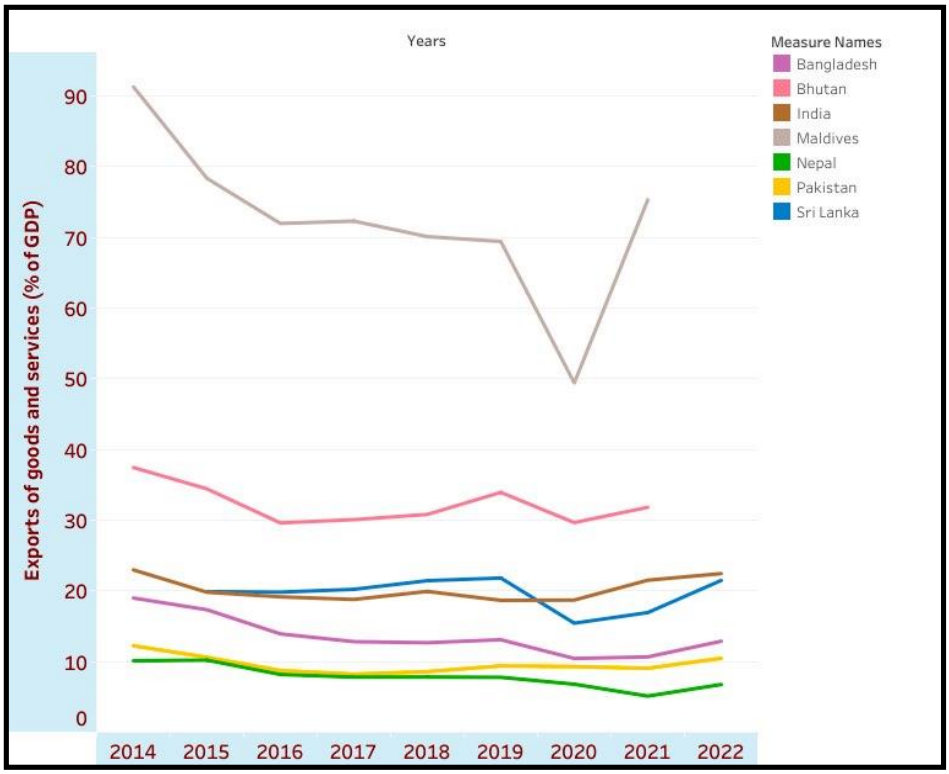
46.25% in 2020. Only after 2021, Bhutan imports were back to the previous position. For the Pakistan economy, the import of goods and services constitute 19.51% of the GDP in 2019. However, this decreased to 17.41% in 2020 and reached to 21.85% in 2022. Imports of Goods and Services data was reported at 19.09 % in 2020 for Indian economy. This records a decrease from the previous number of 21.24 % for 2019. For Sri Lanka, it was 27.60% in 2019 and reduced to 21.59% in 2020. The data shows that there was massive decrease in the percentage of imports in Sri Lanka due to COVID-19. Imports of goods and services (% of GDP) in Maldives was reported at 78.42% in 2018. In the aftermath of the epidemic, Maldives imports contracted to 68.75% in 2020. Overall, in respect of import of goods and services as a % of GDP, among the selected South Asian countries Nepal, Sri Lanka and Maldives imports were badly hit due to the outbreak of COVID-19.

4.3.4 Exports of goods and services (% of GDP)

In the aftermath of the epidemic, India's exports were 18.70% in 2020, compared to the preceding year, it was 18.66. There is slight increase in India's export share as a % of GDP. Bhutan's export was 33.93% in 2019 and declined to 29.66% in 2020. Similarly, Sri Lanka records the massive reduction in exports. It was 21.82% in 2019 and reduced to 15.43% in 2020. Sri Lanka was massive hit by the pandemic. The exports from Nepal, Pakistan, Maldives and Bangladesh reduced to 6.80%, 9.29%, 49.42% and 10.44% respectively from 2019 compared to their previous year. COVID-19

harmed the exports of Bhutan, Sri Lanka and Maldives compared to other countries selected for the study.

Figure 8: Exports of goods and services (% of GDP)



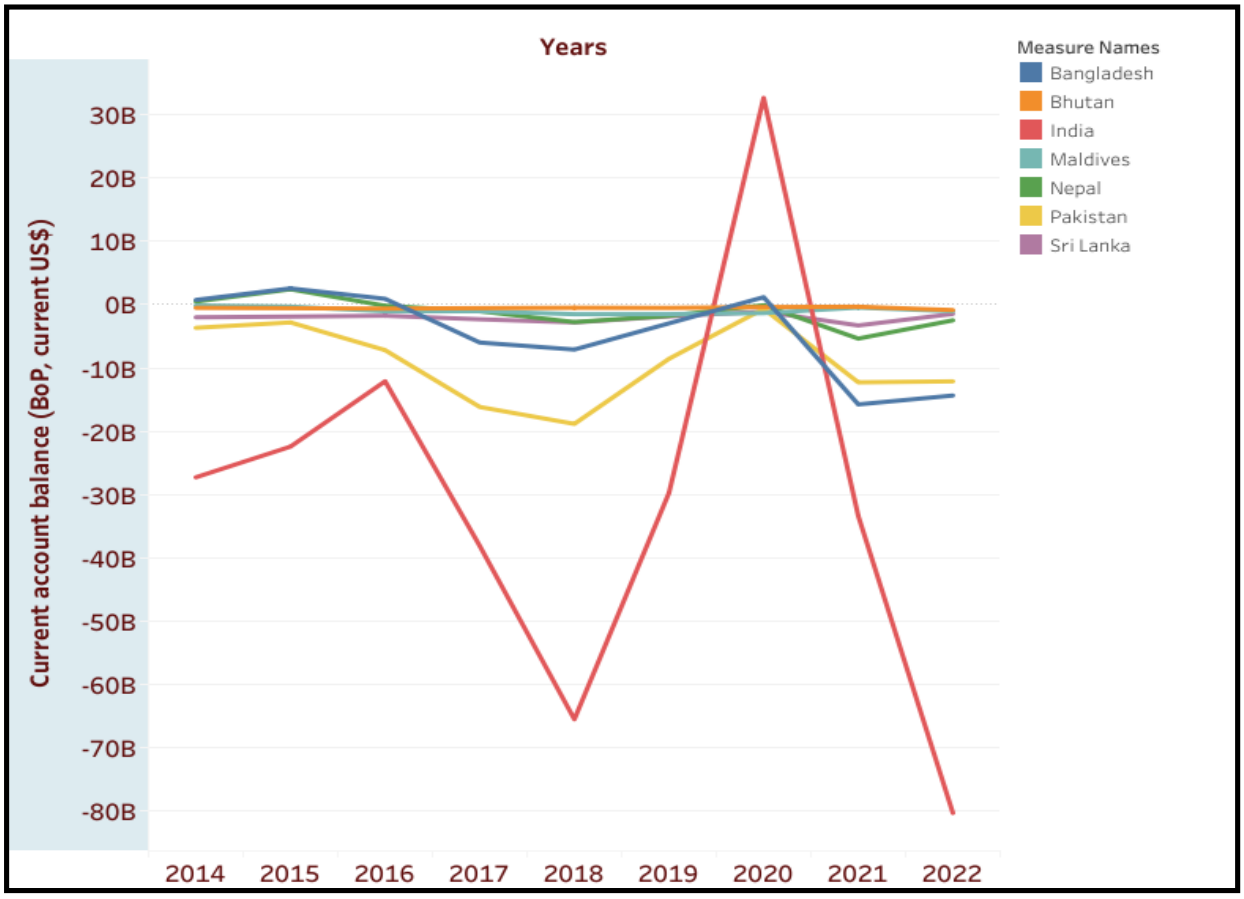
Source: World Bank Data, 2023

4.3.5 Current Account Balance

In 2020, Nepal's current account deficit was USD $ 84.13 million. Such a deficit was at USD $ 1.753 billion in the previous year. A current account deficit indicates that a country is importing more than it is exporting. There is improvement in the current account of Nepal because borders have been closed and national, regional and global supply chains have been disrupted. Due to the restrictions in the movement of goods and services across borders, Nepal's imports had been reduced significantly and this led to the improvement in the current account balance.

India's current account deficit was USD $ 29.76 billion in the year 2019. However, in the year 2020, India's current account surplus was USD $ 32.73 billion. If a country records a current account surplus, it means that it is exporting a greater value of goods and services to the world than it is importing, suggesting that the country is a net lender. The main driver of India's current account surplus was lower imports due to weak domestic demand and lower prices for oil which narrowed down the trade deficit (Choudhary, 2022). The lower value of import was behind current account surplus, and therefore, it's likely to be short-lived once economic activity normalizes post the

Figure 9: Current Account Balance, current US$



Source: World Bank Data, 2023

pandemic. It is seen in the diagram above that the current account deficit started to increase once again in the post pandemic years. Similarly, Bangladesh current account deficit was USD $ 2.94 billion in the year 2019. However, in the year 2020, Bangladesh's current account surplus was USD $ 1.1 billion. One of the biggest contributors to this surplus was the result of major remittances influx during this period (Financial times, 2021).

In 2019, the current account deficit was USD $ 8.55 billion for Pakistan. Such a deficit was at USD $ 650 million in the year 2020. Current account deficit is reduced by a significant amount because of trade restrictions across the border between the trade partner countries. It is seen from the diagram above that the current account deficit started to increase once again in the post pandemic years. Similarly, the current account deficit of Maldives, Bhutan and Sri Lanka is USD $ 1.48 billion, USD $500 million, and USD $1.84 billion in the year 2019 respectively. And all the countries current account deficit reduced significantly in the year 2020 due to the restriction of the flow of goods across borders.

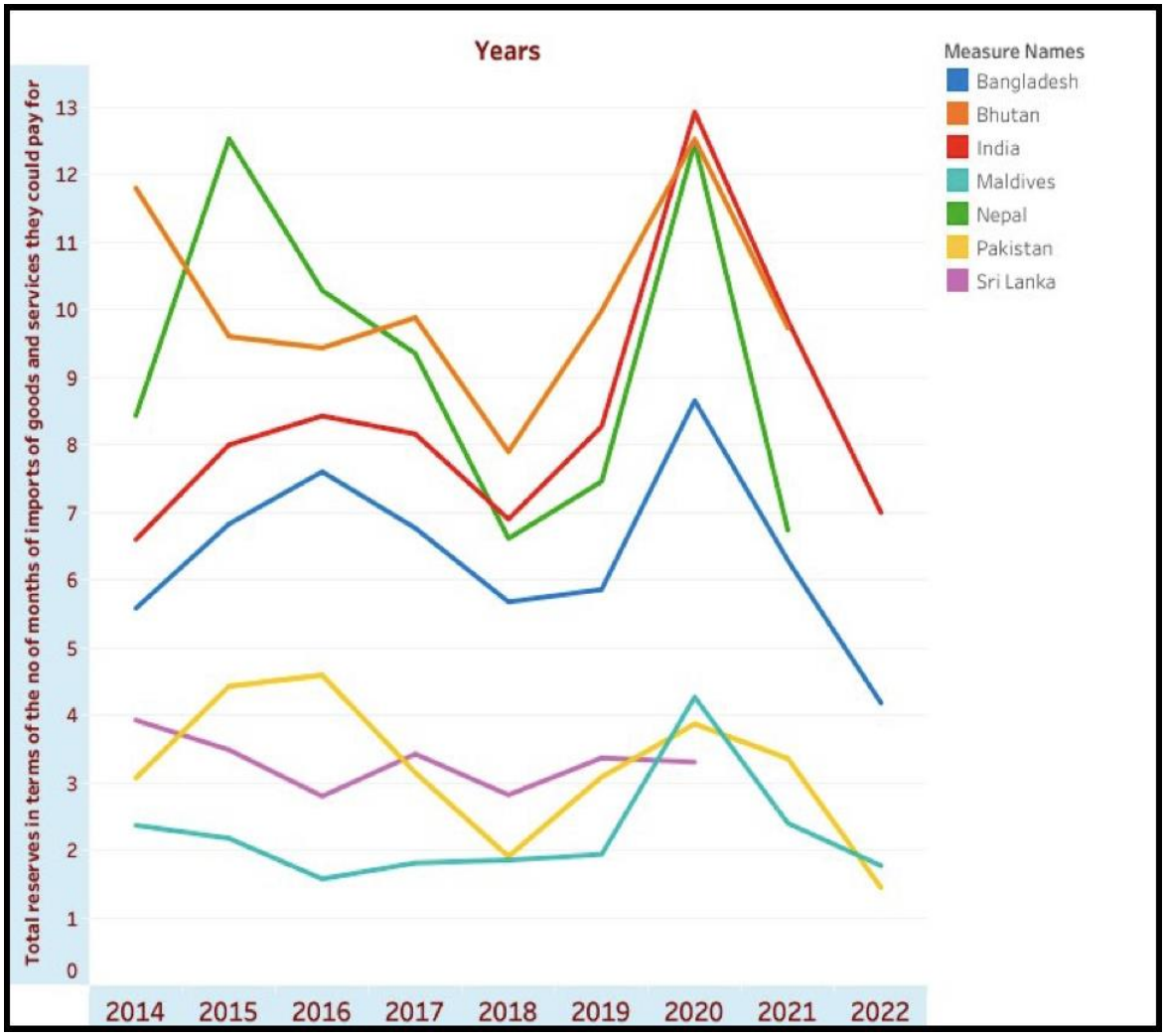
4.3.6 Foreign Currency Reserves

In times of crisis, the fiscal and foreign exchange reserves of a country are regarded as "buffers" for the stability of the financial system and the economy. Foreign exchange reserves are necessary for the central banks and governments, especially in times of crises and in pandemic. Central banks are responsible for maintaining the stability of the national currency and in case of turbulence in the world economy and other external shocks, the foreign reserves are one of the tools for intervention on the markets. According to the Bank for International Settlements (Bank for International Settlements, 2021) the major currencies that dominate the foreign exchange market are the US dollar, euro, Japanese yen, emerging market currencies, UK pound, Australian dollar, Canadian dollar, Swiss franc, etc.

Figure 10 illustrates the stock of international reserves expressed as the number of months of financing-coverage it represents for the given country's imports of goods and services. Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at year-end (December 31) London prices. In the present situation where the pandemic caused a serious economic crisis in the post-pandemic period, it is not a surprise that central banks focused more on the reserves as a buffer. Before the pandemic, South Asian country's ability to finance their imports of goods and services was low as shown in the figure below. Sri Lanka, Pakistan and Maldives were in bad condition compared to other South Asian

counterparts. As the spread of COVID-19 increases, the ability to finance their imports of goods and services also increases. This might be due to the impact of COVID-19 on the imports among the selected South Asian countries.

Figure 10: Foreign Reserves, Months Import Cover, Goods and Services



Source: World Bank Data, 2023

Government-imposed lockdowns, stringent measures, and border closure leads to the decline in imports of goods and services across the South Asian economies. When a country's imports decrease, it means that it is buying fewer foreign goods and services from other countries leading to decrease in outflow of foreign currency reserves.

A higher Months Import Cover indicates that a country is better equipped to absorb external economic shocks, such as a sudden rise in commodity prices or a decline in export revenues. Similarly, A strong reserve position helps them prepare for unforeseen events that could disrupt trade and capital flows.

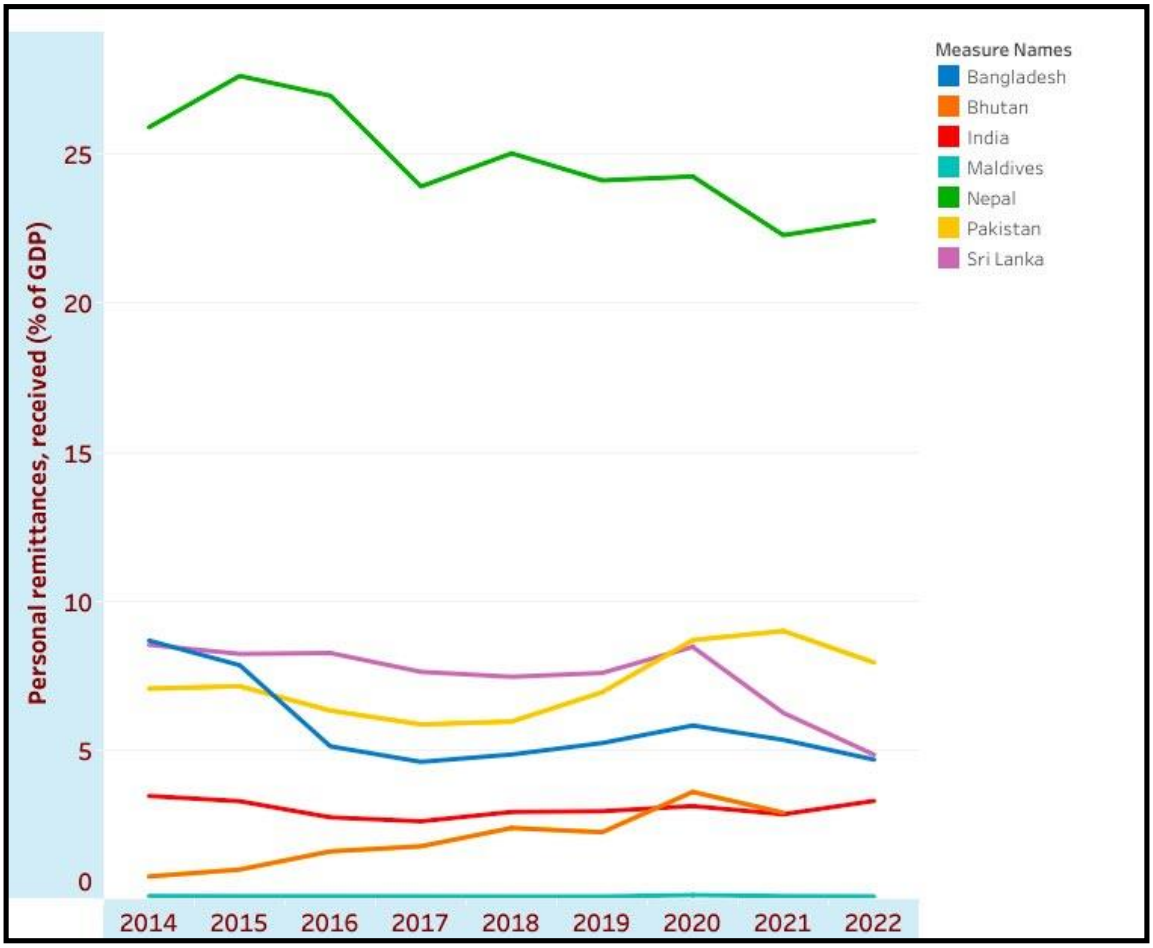
India, Bhutan and Nepal were in a better state as these countries were able to finance the imports for 12 months in the year 2020. However, other South Asian countries were in bad condition as they were only able to finance for only 3-4 months. However, the South Asian economy's ability to finance the imports of goods and services decreased as the cross-border transactions revived again after the end of the pandemic.

4.3.7 Remittance Inflows

International remittances play a major role for economic development in South Asia, with most inflows originating in Gulf countries. International remittances are important for most developing countries. This is particularly true for the South Asian Region, the region that receives the most remittances in the world as a share of gross domestic product (GDP). Remittance inflows increased in 2020 in all South Asian economies as seen in the graph above in the aftermath of COVID-19

pandemic. This occurred despite the Covid-19 crisis hitting economic activity in most migrant hosting countries. Ideas for development (2021) explained this seeming paradox:

Figure 11: Personal remittances received (% of GDP)



Source: World Bank Data, 2023

The first explanation highlights that national statistics typically record remittance inflows based on formal money wiring, which may not capture undeclared physical cash transfers. However, the COVID-19 pandemic and travel restrictions have compelled migrant workers to use official channels, leading to increased recorded flows. The second explanation focuses on some South Asian countries experiencing an increase in short-term remittance inflows as migrant workers who lost their jobs abroad returned home with their savings. However, there is concern that medium to long-term inflows may decrease, particularly due to the ongoing impact of the crisis on the job market in Gulf Cooperation Council (GCC) countries. The third explanation specifically relates to Pakistan and Bangladesh, where the surge in remittances during 2020 could be attributed to the "Haj effect". This refers to migrants from these countries sending money home that they would have otherwise used for a pilgrimage to Mecca, which they were unable to undertake due to travel restrictions.

The receipt of remittances was 24.11 % of GDP in 2019 and 24.25% of GDP in 2020 for Nepal. This shows that there has only been a marginal rise in the receipt of remittances. This is because the workers in the migrant's destination are still sending remittances and the possible reasons are identified above. Similarly, for Bangladesh, India, Maldives, Pakistan, Bhutan and Sri Lanka, personal remittances received as a percentage of GDP are 5.22%, 2.93%, 0.07%, 6.93%, 2.23%, 7.58% in 2019 and 5.81%, 3.11%, 0.12%, 8.68%, 3.58%, and 8.45% in 2020 respectively. Pakistan received more remittances than other South Asian Economies during the pandemic period. And it can be seen from the above graph that the personal remittances received of all South Asian Economies during the pandemic started to fall down after the end of the pandemic in 2022.

4.5 Panel VAR Estimation

4.5.1 Stationarity Test

Stationary test or unit root of panel data using Fisher's PP Test. The unit root test is a common procedure to determine whether variables follow a random walk. Birinci and Kirikkaleli (2021) explained that the unit root test is used to detect the stationarity of time series variables in panel modeling. That's because the use of non-stationary data in a regression model can lead to misleading results, implying invalid statistical conclusions.

According to Akay et al. (2020), the unit root test calculates the specifications for a time series data set including deterministic, trend, nonlinear, and structural breaks. This test can make stronger and more precise estimates, making it possible to describe the structure of the data accurately. Thus, incomplete data and/or misidentification results in inadequate and inaccurate predictions. For this reason, the stationarity of the series should be examined first and the predictions should be made on the series that are stationary.

The hypotheses for unit root tests areas:

□0: Series are not stationary.

□1: Series are stationary.

Table 4. Unit Root Test Results (with intercept, lags selected by Akaike info criterion)

Variables	Statistics	Value Probability	Information

Log_GDP	92.006	0.0000	Stationary at 1st Difference
Log_Imports	117.182	0.0000	Stationary at 1st Difference
Log_Exports	123.433	0.0000	Stationary at 1st Difference
Log_Reserves	107.371	0.0000	Stationary at 1st Difference

Source: Author (2023)

Table 4 above shows that the data used in the research is stationary at the first difference, this is seen from the probability value of each variable below the significance level (α) 5 percent or 0.05. Thus, the next test in this study uses data on the first difference.

4.5.2 Lag Selection

It is essential to select an appropriate lag for VAR estimation. Before the coefficient analysis and t-statistics, we analyze the structure of legs (VAR Lag Order Selection Criteria), in order to determine the exact number of legs in the model. Model offers different criterions like: LogL, LR (sequential modified LR test statistic), FPE (Final Prediction Error), AIC (Akaike information criterion), SC (Schwarz information criterion) and HQ (Hannan-Quinn information criterion). We can see that LR, FPE and AIC information criteria suggest 2 lags, while SC and HQ indicate 1 lag. We accept LR, FPE and AIC information criterions, and in the following analysis we will estimate VAR model with 2 lags.

We confirm that the number of lags to apply in the VAR is two (Table 5a). We also conclude that the VAR specification satisfies the stability conditions since all roots are inside the unit circle (Table 5b).

Table 5a : VAR Lag Order Selection Criteria

Endogenous variable: GDP, Exports, Imports, Foreign Currency Reserves, and CPI

Sample: 1980 - 2021

Included observations: 165

Lag	LogL	LR	FPE	AIC	SC	HQ
0	1031.636	NA	4.58e-11	-12.456	-12.380*	-12.426*
1	1050.010	35.634	4.45e-11	-12.484	-12.108	-12.332
2	1068.580	35.114*	4.31e-11*	-12.516*	-11.838	-12.241

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5 % level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn Information criterion

Table 5b: Roots of Characteristics Polynomial

Endogenous variables: GDP, Exports, Imports and Reserves

Lag specification: 1 2

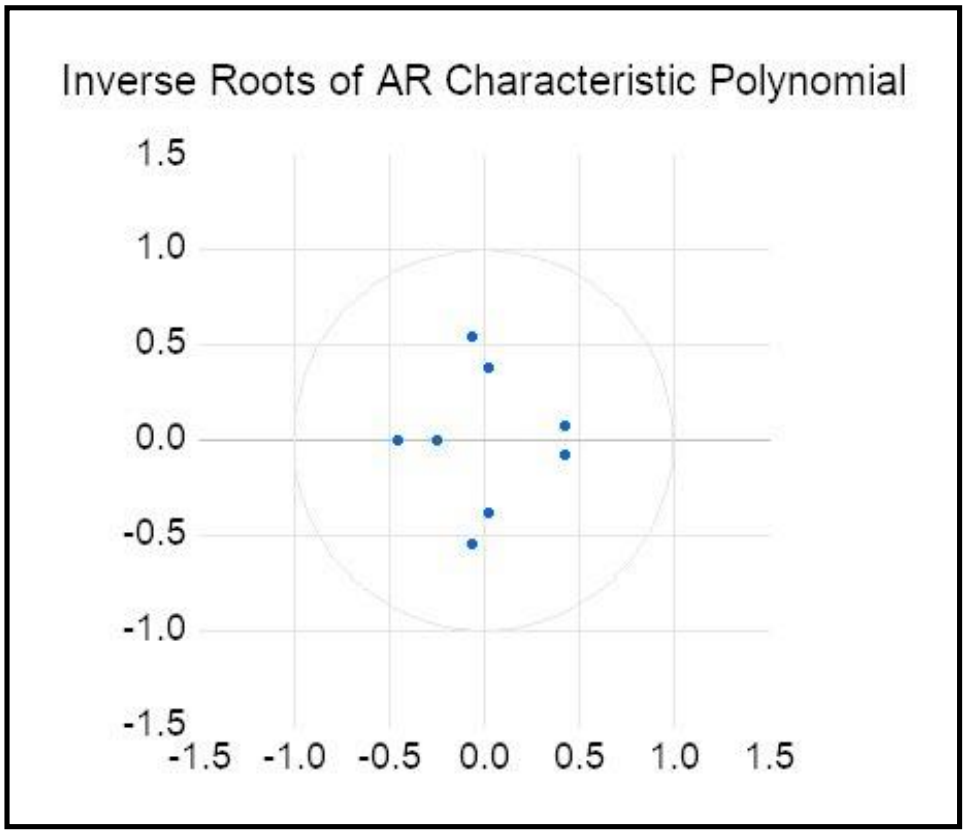
Root	Modulus
-0.062653 - 0.548908i	0.552472
-0.062653 + 0.548908i	0.552472
-0.456448	0.456448
0.428978 - 0.074864i	0.435462
0.428978 + 0.074864i	0.435462
0.027168 - 0.376472i	0.377451
0.027168 + 0.376472i	0.377451
-0.247583	0.247583

No root lies outside the unit circle. VAR satisfies the stability condition.

4.5.3 Co-integration Test

According to Taiwo and Olayemi (2015), the co-integration equation is estimated separately for each

Figure 14: Inverse Roots of AR Characteristics Polynomial



Source: Author's calculation

panel member, and the residue is examined to the unit root. If the null hypothesis of the unit root is rejected, then there is a long- term relationship in the model with different vectors in each cross-section. We are using Kao Residual Cointegration Test for cointegration test. The hypotheses tested in the co-integration test with Kao are as follows.

H_0: probability > 0.05 or no co-integration relationship

A co-integration test is carried out to ensure that the next test will be carried out because individually the variables that have unit root problems at the level will automatically create a co-integration relationship when combined.

The results of the panel co-integration test using the Kao Residual Cointegration test are shown in the Table 6. Table 6 below shows the results that there is no co-integration in the panel data used in

the study, this is seen from the probability value above the significance level (α) 5 percent or 0.05. Thus, this study can use the PVAR model for the first difference. According to Sulistiana et al. (2017) explained that if some variables contain unit roots and are not co-integrated with each other, the research model can still use VAR but variables containing unit roots must be differentiated and the results of the differentiation are free from unit root problems.

Table 6. Co-integration Test Results

ADF	t-Statistics	Prob
Augmented Dickey Fuller Test	0.141425	0.4438

Source: Author (2023)

4.5.4 Empirical Results

For the VAR estimates we use unrestricted VAR model, due to the fact that we need to use time series first difference in order to avoid non-stationarity. VAR model is estimated with 2 lags and detail results are in Table 8. Although the VAR estimates do not present the p-values for testing the corresponding parameters (in Eviews), based on each value of the t-statistics by using a critical point of *t =2 or 1.96*, we can determine whether or not a lagged variable has a significant adjusted effect on the corresponding dependent variable (Agung, 2009).

Table 8: Panel Vector Autoregression Estimates

Sample (adjusted): 1983 2021

Included observations: 195 after adjustments

t-statistics in ( )

	D(log_GDP)	D(log_Exports)	D(log_Imports)	D(log_Reserve)
D (GDP (-1))	**0.191 (2.151)**	**0.334 (1.969)**	**0.390 (2.315)**	-0.326 (-0.671)
D (GDP (-2))	0.123 (1.389)	-0.288 (-1.702)	0.202 (1.201)	-0.449 (-0.926)
D (Exports (-1))	0.008 (0.169)	-0.006 (-0.075)	0.157 (1.744)	-0.083 (-0.319)
D (Exports (-2))	-0.069 (-1.335)	0.033 (0.339)	0.063 (0.635)	0.169 (0.592)
D (Imports (-1))	-0.074 (-1.301)	-0.151 (-1.382)	**-0.225 (-2.074)**	0.356 (1.136)
D (Imports (-2))	0.062 (1.161)	0.082 (0.801)	-0.129 (-1.257)	0.159 (0.537)
D (Reserves (-1))	**0.045 (3.318)**	**0.051 (1.960)**	**0.074 (2.869)**	0.124 (1.653)
D (Reserves (-2))	**0.033 (2.410)**	0.045 (1.718)	**0.088 (3.329)**	**-0.161 (-2.116)**
C	0.018 (5.391)	0.029 (4.444)	0.013 (2.128)	0.047 (2.490)
R-squared	0.150928	0.084831	0.179065	0.048791
Adj. R-squared	0.114408	0.045469	0.143756	0.007879

Source: Author's calculation. Note: Significant coefficients are on bold letters.

Dependent variable in the model is GDP, while independent variables are GDP (-1) and (-2), Exports (-1) and (-2), Imports (-1) and (-2), and Reserves (-1) and (-2). Model results are presented and in the first row are coefficients of Vector Autoregression, while in the second row is t-statistics (shown in parenthesis). Based on the results of PVAR test, the model estimation equation is obtained as follows.

$$GDP_t = 0.018 + 0.191\ GDP\ (-1)_{t-1} + 0.123\ GDP\ (-2)_{t-1} + 0.008\ Exports\ (-1)_{t-1} - 0.069\ Exports\ (-2)_{t-1} - 0.074\ Imports\ (-1)_{t-1} + 0.062\ Imports\ (-2)_{t-1} + 0.045\ Reserves\ (-1)_{t-1} + 0.033\ Reserves(-2)_{t-1}$$

Exports has a positive effect on GDP at lag 1 and a negative effect on lag 2. Furthermore, Imports has negative impact on GDP at lag 1 whereas positive effect in lag 2. Finally, Reserve has a positive effect on GDP in lag 1 and 2.

$$\begin{aligned} Exports_t = {} & 0.029 + 0.334\ GDP\ (-1)_{t-1} - 0.288\ GDP\ (-2)_{t-1} \\ & - 0.006\ Exports\ (-1)_{t-1} + 0.033\ Exports\ (-2)_{t-1} \\ & - 0.151\ Imports\ (-1)_{t-1} + 0.082\ Imports\ (-2)_{t-1} \\ & + 0.051\ Reserves\ (-1)_{t-1} + 0.045\ Reserves(-2)_{t-1} \end{aligned}$$

GDP has a positive effect on Exports in lag 1 and negative effect in lag 2. Furthermore, Exports has a negative effect on Exports Rate in lag 1 and a positive effect in lag 2. Imports has a negative effect on Exports in lag 1 and negative effects in lag 2. Reserve shows a significant negative effect on Exports in lag 1, meaning that every time there is increase in reserve by 1% will reduce the exports by 5.1%. whereas reserve do not show a significant effect on exports because the estimation results show a probability value above 0.05.

$$\begin{aligned} Imports_t = {} & 0.013 + 0.390\ GDP\ (-1)_{t-1} + 0.202\ GDP\ (-2)_{t-1} \\ & + 0.157\ Exports\ (-1)_{t-1} + 0.063\ Exports\ (-2)_{t-1} \\ & - 0.225\ Imports\ (-1)_{t-1} - 0.129\ Imports\ (-2)_{t-1} \\ & + 0.074\ Reserves\ (-1)_{t-1} + 0.088\ Reserves(-2)_{t-1} \end{aligned}$$

GDP has a significant positive effect on Imports in lag 1 and whereas GDP don't show significant effect lag 2. Increase in GDP by 1% will increase the imports by 39% in lag 1 whereas increase in GDP by 1% will decrease the GDP by 20.2% in lag 2. Furthermore, Exports has a positive effect on Imports in lag 1and on lag 2 but do not show significant effect. Finally, reserve has a significant positive effect on Imports in lag 1 and in lag 2, meaning that every time there is an increase in Reserve by 1 %, it will increase Imports by 7.4% in lag 1 and by 8.8% in lag 2.

$$\begin{aligned} Reserve_t = {} & 0.047 - 0.326\ GDP\ (-1)_{t-1} - 0.449\ GDP\ (-2)_{t-1} \\ & - 0.083\ Exports\ (-1)_{t-1} + 0.169\ Exports\ (-2)_{t-1} \\ & + 0.356\ Imports\ (-1)_{t-1} + 0.159\ Imports\ (-2)_{t-1} \\ & + 0.124\ Reserves\ (-1)_{t-1} - 0.161\ Reserves(-2)_{t-1} \end{aligned}$$

GDP has a negative effect on Reserve in lag 1 and in lag 2. Similarly, Exports has a negative effect on Reserve in lag 1 and a positive effect on lag 2. Imports has a positive effect on Reserve in lag 1 and in lag 2. All variables do not show a significant effect because the estimation results show a probability value above 0.05.

4.5.5 Residual Autocorrelation Test

Residual LM test has been performed on the above VAR estimation to examine if there is any serial correlation in residuals. Existence of serial correlation violates the OLS assumptions. Table 9 presents the VAR residual serial correlation LM tests. The LM – stat cannot reject the null hypothesis of no serial correlation up to lag lengths of three. Hence, the model satisfies the OLS assumptions. Null hypothesis of the VAR Residual Serial Correlation LM test is: there is no series correlation for the legs - h. The calculated p-value for all 3 lags is > 0.05, which indicates that we cannot reject null hypothesis, which means that we can confirm no autocorrelation between residuals.

Table 9 : VAR Residual Serial Correlation LM Tests

Sample: 1980-2021

Lags	LM stat	Df	Prob
1	20.99	16	0.1786
2	20.93	16	0.1812
3	15.72	16	0.4723

Source: Author's calculation

4.5.6 Causality Test

Causality test by using the Granger Causality test. The causality test is used to see the mutual relationship between variables in the VAR. The results of causality test using the Granger Causality test are shown in the Table 10. Table 10 below shows that not all variables show a causal relationship.

Table 10. Causality Test Results

Null Hypothesis	Observation	F-Statistic	Probability
Exports does not Granger cause GDP	195	0.96000	0.3847
GDP does not Granger cause Exports		2.28237	0.0620

Imports does not Granger cause GDP	195	2.12264	0.1225
GDP does not Granger cause Imports		**4.62706**	**0.0109**
Reserve does not Granger cause GDP	**195**	**10.2193**	**6.E-05**
GDP does not Granger cause Reserve		0.03499	0.9656
Imports does not Granger cause Exports	195	0.40345	0.6686
Exports does not Granger cause Imports		2.26048	0.1071
Reserve does not Granger cause Exports	**195**	**5.08752**	**0.0070**
Exports does not Granger cause Reserve		0.61589	0.5412
Reserve does not Granger cause Imports	**195**	**13.3826**	**4.E-06**
Imports does not Granger cause Reserve		0.60315	0.5481

Source: Author's calculation (2023) Note: Variables that show causality are on bold letters.

GDP has a one-way effect on Imports with a probability value below 0.05. Reserve also has a one-way effect on GDP, but not vice versa. Similarly, Reserve has a one-way effect on Exports as well as Imports. While the other variables, namely Exports to GDP, GDP to Exports, Imports to GDP, GDP to Reserve, Exports to Imports, Exports to Reserve and Imports to Reserves have no causal relationship with each other because the estimation results show a probability value above 0.05.

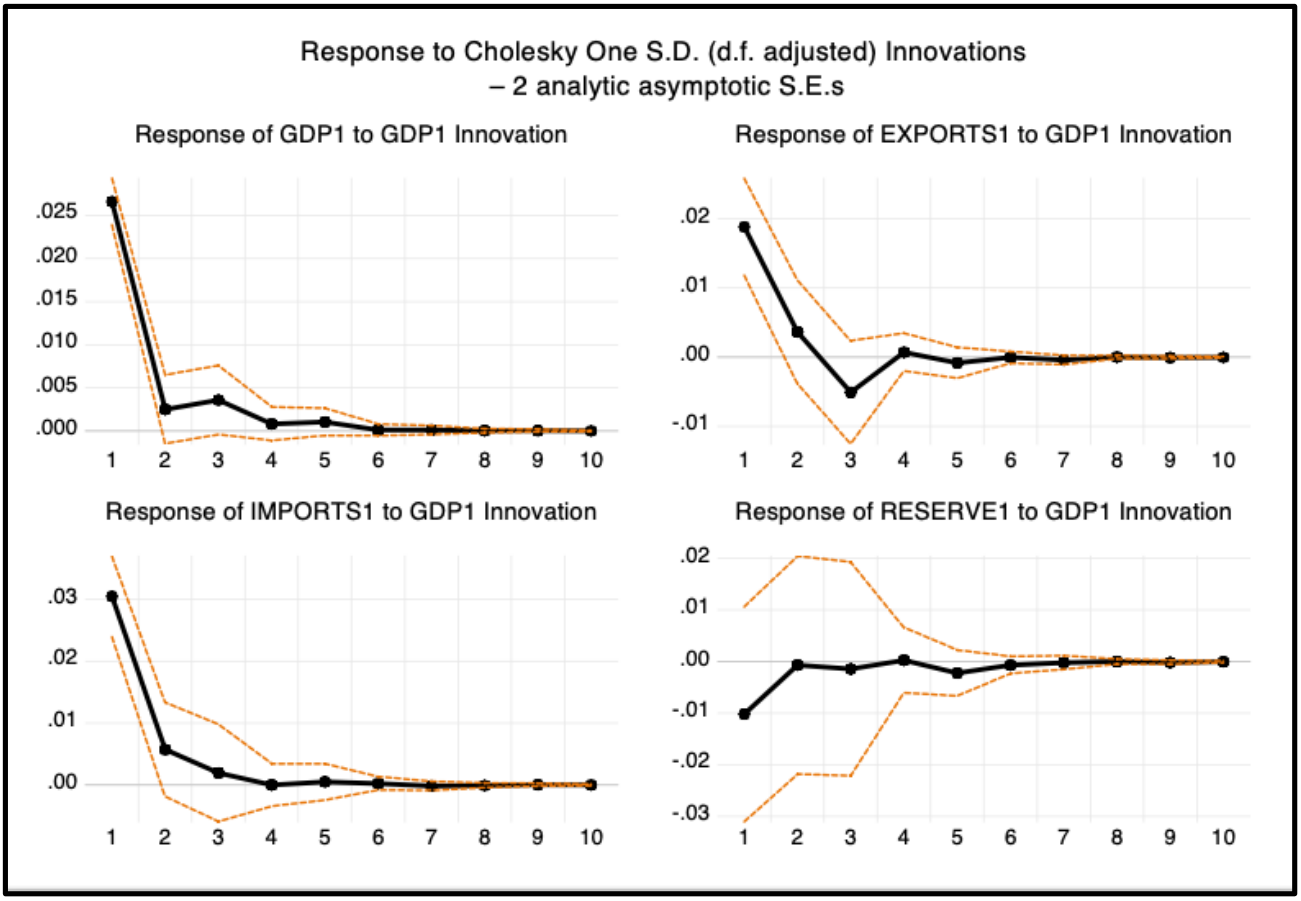
4.5.7 Impulse Response Function (IRF) test

Sebastine et al. (2016) explained that the function of IRF is to analyze the dynamic effects of the system when the model receives an impulse. The impulse response function shows the effect of shock

on the variable adjustment path. The impulse response function traces the effect of one standard deviation shock to one of the innovations on the values of current and future endogenous variables.

Figure 15: IRF Test Results

Source: Author's calculation



The results of the IRF test are shown in Figure 15. One standard deviation shock to GDP leads to 0.025 standard deviation increase in the variable itself in the first time period after the shock. In time period 2, this shock quickly dies as the impact returns closer to zero. A slight increase in GDP in periods 2-3, with a post-shock peak in period 3. The effects of the shock start to reduce after the third time period and the impulse response function converges to zero. Finally, the effects of the shock die out in time period 6. One standard deviation increase in GDP due to shocks leads to a 0.02 standard deviation increase in Exports in the first time period. The effects of the shock are less in the second time period. Moreover, the impulse response function becomes negative in the third time period. After the 3rd time period, effects of shock quickly die as the impact returns to almost zero in the fourth period. Likewise, Imports responded to GDP shocks of 0.03 points in the 1st period and after which the response continued to decline until the 10th period. On the other hand, GDP shocks to the Reserve variable during the 1st period is -0.01 points. After the first period, reserves increased and

reached positive in the 2nd period. After that, the response turned positive which initially was negative but continued to increase in the next periods.

4.5.8 Variance Decomposition (VD) test

According to Abidin et al. (2020) VD test is to identify the variation of a variable as a result of self-shock or shock on other variables. VD analysis can determine the percentage of variation values contained in one variable as a result of other variables in the system. Therefore, this method can provide information about the importance of a variable to other variables.

Table 11: Variance decomposition of GDP

Period	S. E	GDP	Exports	Imports	Reserve
1	0.026605	100.000	0.000	0.000	0.000
2	0.027802	92.38732	0.155973	2.060846	5.395857
4	0.028837	87.50515	0.738054	2.234886	9.521907
6	0.028869	87.44349	0.737625	2.256019	9.562868
8	0.028871	87.43600	0.738327	2.259848	9.565828
10	0.028871	87.43542	0.738326	2.260200	9.566051

Source: Author's calculation

The VD test results are shown in Table 11, Table 12, Table 13 and Table 14. Based on Table 11 above, it can be concluded that the variation in the value of macro-economic variables in 5 South Asian countries is more influenced by the variable itself than other variables throughout the study period. Variations in the value of GDP are more influenced by the variables themselves, both in the short and long term. Exports contribution was 0.15 percent in the short term and an increase of 0.73 percent in the long term. The contribution of Imports in the 2nd period was 2.06 percent and increased to 2.26 percent in the 10th period. Reserve contribution was 5.39 percent in the 2nd period and increased by 9.56 percent in the 10th period. Reserve variable is the biggest contributor compared to other variables.

Table 12: Variance decomposition of Exports

Period	S. E	GDP	Exports	Imports	Reserve
1	0.050744	13.73559	86.26441	0.00000	0.00000
2	0.051951	13.59332	82.74028	1.704954	1.961443

4	0.052993	13.99418	79.84457	2.000131	4.161120
6	0.053046	13.99041	79.76679	2.041100	4.201697
8	0.053049	13.99486	79.75622	2.045274	4.203648
10	0.053050	13.99483	79.75561	2.045861	4.203700

Source: Author's calculation

The variation in the value of Exports is influenced more by the variable itself in the 1st period by 86.26 percent and continues to decrease to 79.75 percent at the end of the period. The contribution of GDP is quite large to Export value in the long-term reaching 13.99 percent, while the contribution of Imports only reaches 2.04 percent and Reserve is 4.20 percent in the 10th period.

Table 13: Variance decomposition of Imports

Period	S. E	GDP	Exports	Imports	Reserve
1	0.050464	36.40999	18.09133	45.49869	0.00000
2	0.052919	34.27800	16.72781	44.98916	4.005034
4	0.055652	31.11609	15.15340	42.74060	10.98991
6	0.055764	31.00072	15.15948	42.72725	11.11255
8	0.055774	30.99048	15.15604	42.72333	11.12963
10	0.055774	30.99019	15.15599	42.72297	11.13085

Source: Author's calculation

Furthermore, the variation in the value of the Import variable is influenced more by the variable itself by 45.49 percent in the 1st period and decreases to 42.72 percent in the 10th period. The contribution to GDP was very high at the beginning of the period at 36.40 percent but continued to decrease significantly to reach 30.99 percent in the 10th period. This variable is also the biggest contributor to forming the Import value from other variables. Meanwhile, Exports and Reserve contributed 15.15 and 11.13 percent until the 10th period.

Table 14: Variance decomposition of Reserve

Period	S. E	GDP	Exports	Imports	Reserve
1	0.145409	0.490769	0.035715	4.769281	94.70424

2	0.146754	0.483901	0.112152	4.992886	94.41106
4	0.149062	0.478707	0.890315	5.353975	93.27700
6	0.149169	0.502313	0.891825	5.390894	93.21497
8	0.149180	0.502431	0.893470	5.393143	93.21095
10	0.149180	0.502538	0.893524	5.393343	93.21059

Source: Author's calculation

Finally, variation on the Reserve variable. Throughout the research period, variations in the value of Reserve are more influenced by reserve itself both in the short and long term. The influence of GDP is least to Reserves. That is 0.49 percent in the 1st period and slightly increases to 0.50 percent in the 10th period. Meanwhile, the export variable contributed 0.03 percent in the first period and continued to increase to 0.89 percent at the end of the period. Imports contributed 4.76 percent in the 1st period and increased to 5.39 percent at the end of the study period. From the four economic variables tested by VD, it can be concluded that GDP is the largest contributor to all economic variables in the model.

4.6 Discussion

4.6.1 Gross Domestic Product in South Asian Economies

Gross Domestic Product is one of the most important indicators in measuring a country's economic growth. According to Wu et al. (2021) GDP is a macroeconomic indicator that measures the level of economic development in a country or region. This variable has a major influence on the determination of macroeconomic goals and the formulation of regulations in the future. In addition, GDP is also influenced by several factors, such as the level of economic development, policy orientation, climate environment, and the standard of living of the population, etc.

The existence of a pandemic that rocked the world economy resulted in a simultaneous decrease in GDP in five South Asian countries in 2020. Economic growth contracted sharply in all 5 countries leading to a negative for 4 countries and Bangladesh was able to maintain a positive value in their GDP growth even though the trend was also experiencing a significant decline. Cases infected with Covid-19 and the number of people who died in India was highest among the studied countries and relatively low in Nepal and Sri Lanka when compared to other South Asian countries. In addition, the government made decisions quickly and comprehensively during the first wave of Covid-19, so quick and good handling resulted in the shocks not causing a recession.

The main factor causing the decline in GDP in South Asian countries is the result of policies taken by the government to reduce the spread of the Covid-19 virus. All countries implement a policy of limiting people's activities outside the home. As a result, businesses in various sectors experienced a decline, so the rotation of the economic wheel was hampered. Significant declines occurred in countries that rely on foreign trade and tourism. The results also show that the value of GDP cannot be separated from fluctuations in other economic variables. From these results, GDP becomes a variable that dominates other economic variables throughout the study period both in the short and long term. The test results show that GDP has a one-way relationship with influencing Imports. Furthermore, GDP shocks also can potentially affect the value of Exports, Imports, and Reserves. Therefore, GDP is also the largest contributor to variations in the value of Exports and Imports both in the short and long term.

Apart from affecting other variables, the research results also show that GDP is also influenced by exports, imports, and reserves even on a small scale. Shocks to Exports, Imports, and Reserves have little effect on changes in the value of GDP. Likewise, with the variation in value, GDP is more influenced by the variable itself than other variables. This shows that many other economic factors are not included in the model that also affects GDP. According to Yuliadi and Yudhi (2021), several economic variables affect GDP, namely total population, interest rate, money supply, human development index, energy consumption, foreign debt, corruption perception index, financial literacy index, foreign direct investment, and vice versa. Fluctuations in the value of GDP are generally used as a basis for consideration for decision- making and policy-making by the government.

4.6.2 Imports in South Asian Economies

COVID-19 has severely disrupted international and regional trade and supply chains (Baldwin and Tomiura, 2020). Many countries have temporarily closed their borders, reduced or halted non-essential imports, and canceled import orders from other countries. Selected South Asian countries imports were badly hit due to the outbreak of COVID-19. This variable has a major influence on the determination of countries GDP. In addition, Imports is also influenced by several factors, such as price or inflation rate, domestic demand, domestic income, exchange rate, government policy etc.

The main factor causing the decline in Imports in South Asian countries is the result of pandemic led widespread lockdowns, travel restrictions, and factory closures in many countries. This disrupted global supply chains, making it difficult for goods to be produced and shipped as usual. Many

industries faced shortages of raw materials, components, and finished products, leading to reduced imports. As economies were hit by the pandemic, many people experienced job losses, reduced incomes, and economic uncertainty about the future. Reduced economic activity and declining consumer spending contributed to lower demand for imports. The results also show that the value of Imports cannot be separated from fluctuations in other economic variables. The test results show that Reserves has a one-way relationship with influencing Imports. In the long run the influence or contribution of GDP is 30.99%, Exports is 15.15% and Reserves is 11.13% on Imports. GDP is also the largest contributor to variations in the value of Exports and Imports both in the short and long term. From these results, we can infer that any shock on GDP, Exports and Reserves account for variation of the fluctuations in Imports.

4.6.3 Exports in South Asian Economies

The outbreak of the COVID-19 pandemic in late 2019 triggered a series of unprecedented challenges for the global economy. One of the most significant consequences was the substantial decrease in exports across nations. The economic shock that occurred in 2020 caused almost all South Asian countries to experience a decrease in the value of exports. The highest decrease in exports is of Sri Lanka and lowest impacted countries is India. The government's policy to tackle the spread of the Covid-19 virus is a tradeoff for the economic sector which continues to experience a decline. Restrictions on social activities imposed by the government resulted in lockdowns, quarantines, and restrictions on movement led to disruptions in supply chains. Many factories and businesses had to close or operate at reduced capacity, leading to a decrease in production. This resulted in a shortage of goods available for export. Similarly, many countries implemented travel and transportation restrictions, including limitations on international flights and shipping. This impacted the movement of goods across borders and hindered the export process.

The results of the study show that shocks from all economic variables also affect the value of exports, with GDP as the variable that has the greatest influence followed by reserve and then imports. Likewise, with the variation in value, Exports are more influenced by GDP both in the short and long term. On the other hand, shocks and variations in the exports also affect all economic variables in this study, but only in small amounts. The shock caused by the Covid-19 pandemic impacted the movement of goods across borders and hindered the export process. This indicates a reduced flow of foreign currencies into economies and ultimately reduced level of people's welfare and can contribute to increasing the level of poverty in the country. To avoid this, of course, various countries are trying to formulate effective policy packages so that they can increase their economic well being again.

4.6.4 Reserves in South Asian Economies

In times of financial crisis or crisis like COVID-19, foreign exchange reserves of a country are regarded as “buffers” for the stability of the financial system and the economy. The impact of COVID-19 on the foreign currency reserves of South Asian countries varied based on factors such as their economic structure, dependence on certain industries, policy responses, and global economic conditions. Some countries might have experienced significant declines in their foreign currency reserves, while others might have managed the situation relatively better.

Except Bhutan and Sri Lanka, the rest of the South Asian economies experienced a rise in the stock of foreign currency reserves during the pandemic period. Tourism is an important source of foreign exchange earnings for Sri Lanka and Bhutan. Travel restrictions and lockdowns severely impacted the tourism industry, leading to a decline in foreign currency earnings of both nations. The results also show that the value of Reserves cannot be separated from fluctuations in other economic variables. The test results show that GDP has a one-way relationship with Exports and also the Imports. In the long run, the influence or contribution of GDP is 0.50%, Exports is 0.89% and Imports is 5.39% on Reserves. Import is the largest contributor to variations in the value of Reserves both in the short and long term. From these results, we can infer that any shock on GDP, Exports and Imports account for variation of the fluctuations in Imports. Shocks to GDP, Exports, and Imports have little effect on changes in the value of Reserves. Likewise, with the variation in value, Reserve is more influenced by the variable itself than other variables. This shows that many other economic factors are not included in the model that also affects GDP.

Chapter 5

5.1 Conclusion

The success of economic development in South Asian countries can be seen from the performance of economic variables including GDP, Imports, Exports, and foreign currency reserves. Indicators for measuring economic performance are not limited to these four variables, there are other variables such as exchange rates, interest rates, employment opportunities, inflation rate, the balance of payments, investment levels, and so on. However, all of these variables are not used in this research model. This is due to the limited availability of data published by the World Bank (WB) in 7 South Asian countries in the 1980 - 2021 period, which is a limitation in this study.

One year lag change in GDP has a statistically significant positive effect on GDP, Exports, Imports and negative insignificant impact on reserves. Two-year lag change has non-significant impact on economic growth. One year lag change in GDP is associated with 19.1% increase in GDP on average. Similarly, 1% increase in GDP is associated with 33.4% increase in Exports, 39% increase in Imports.

GDP, Exports, Imports and Reserves are significantly affected by change in reserves in both one-year lag and two-year lag. In one year, lag, 1% increase in reserve is associated with 4.5% increase in GDP, 5.1% increase in Exports, and 7.4% Imports. Similarly, in two-year lag, 1% increase in reserve is associated with 3.3% increase in GDP, non-significant impact on Exports, 8.8% increase in Imports and 16.1% decrease in Reserves. One-year lag change in Imports has a significant negative impact on Import self. 1% increase in imports is associated with 22.5% decrease in Imports itself.

GDP has a one-way effect on Imports with a probability value below 0.05. Reserve also has a one-way effect on GDP, but not vice versa. Similarly, Reserve has a one-way effect on Exports as well as Imports. While the other variables, namely Exports to GDP, GDP to Exports, Imports to GDP, GDP to Reserve, Exports to Imports, Exports to Reserve and Imports to Reserves have no causal relationship with each other because the estimation results show a probability value above 0.05.

It can be concluded from the results that the variation in the value of macro-economic variables in 5 South Asian countries is more influenced by the variable itself than other variables throughout the study period. In addition, GDP is also the largest contributor to variations in the value of economic variables both in the short and long term. Based on these results, this study can be input for policymakers in 5 South Asian countries to focus on achieving a high and stable GDP value. This is because, during the research period, GDP became the dominating factor in influencing the stability of Export and Import variables.

In the event of a shock that disrupts economic stability, policymakers can immediately respond with a policy package that prioritizes GDP to be immediately re-stabilized. The hope is that stability in GDP will automatically stabilize other economic variables. GDP performance reflects better economic growth and this is largely due to the positive interaction of economic, political, social, and institutional factors that effectively reflect sound policies into achieving sustainable growth that will bring prosperity to the whole society.

5.2 Policy recommendations

Based on the findings, here are some policy recommendations for policymakers in South Asian countries.

Export Promotion and Diversification: Given the positive effect of Exports on GDP at lag 1 policymakers should consider measures to promote and diversify exports. This may include providing incentives to export-oriented industries, improving trade infrastructure, and facilitating access to international markets. To mitigate the negative impact at lag 2, strategies to sustain export growth should be explored, such as enhancing product quality and market competitiveness.

Import Management and Balance: Recognizing the negative impact of Imports on GDP at lag 1 and its positive effect at lag 2, there is a need for careful import management. Policymakers should focus on policies that balance the benefits of imports, such as access to technology and inputs, with the potential risks of trade deficits. Measures to promote domestic production and reduce import dependency, particularly in essential sectors, could be beneficial.

Reserve Accumulation: The positive effects of Reserve on GDP at lags 1 and 2 emphasize the importance of maintaining robust foreign exchange reserves. Policymakers should continue to accumulate reserves to safeguard against external shocks and ensure macroeconomic stability. Moreover, strategies to optimize the utilization of reserves for productive investments should be explored to enhance their positive impact on economic growth. This can help mitigate potential negative impacts on the balance of payments.

Enhancing Import-Export Nexus: Recognizing the positive effect of GDP on Imports at lag 1, policymakers should focus on strategies to boost domestic economic growth. Efforts to improve domestic production and stimulate demand can help increase imports, which, in turn, can have a positive impact on economic activity. Encouraging productive linkages between the import and export sectors can further enhance the economic benefits.

Diversifying Revenue Sources: Recognizing the negative effects of GDP on Reserve, policymakers should focus on diversifying revenue sources to reduce reliance on GDP for reserve accumulation. Initiatives to attract foreign direct investment (FDI), promote remittances, and encourage exports can help increase foreign exchange inflows and, in turn, contribute to reserve accumulation.

Strengthen Fiscal and Monetary Policies: Recognizing that GDP is the largest contributor to variations in all economic variables, policymakers should focus on maintaining a stable and robust economic environment. This includes prudent fiscal management, such as controlling government spending and reducing deficits, as well as sound monetary policies to ensure price stability and exchange rate management.

Data Monitoring and Analysis: Continuously monitor and analyze macroeconomic data to detect trends and variations in economic variables. This proactive approach can help policymakers anticipate potential economic challenges and adjust policies accordingly.

Chapter 6

6.1 Economic turmoil in Sri Lanka and Lessons for Nepal

Sri Lanka has faced a significant political and economic crisis that stems from a variety of factors like political issues, economic mismanagement, a growing foreign debt, declining foreign reserves, a weakening currency, and rising prices. Efforts to address the situation included tax reductions, monetary interventions, and a shift towards organic and biological farming. However, additional challenges like the Easter bomb attacks in 2019 and the impact of the COVID-19 pandemic exacerbated the crisis. The Easter bombings, carried out by suicidal Islamists in April 2019, negatively affected tourism, and the subsequent years saw a decline in tourist arrivals. The coalition government lost its majority between March and April 2022, leading to heightened political instability.

The COVID-19 pandemic severely impacted Sri Lanka's economy by reducing international travel, a crucial revenue source (Sanghani, 2022). Additionally, Russia's actions in Ukraine had repercussions as Russians and Ukrainians formed a significant portion of Sri Lanka's tourists (Etsuyo, 2022). The country faced economic challenges due to lose fiscal policies, high foreign borrowing, increased imports, and substantial debt payments. These factors led to a steep decline in Sri Lanka's foreign reserves (Sanghani, 2022). Due to low foreign exchange reserves, Sri Lanka was unable to import necessities. Sri Lankans' living standards have significantly declined as a result of the country's total reliance on imported petroleum. Citizens started utilizing wood fuel in place of gas and spent days in line at gas stations. By 2022, the country was at risk of a sovereign default, as its available foreign exchange reserves were insufficient to meet external debt obligations. The government had

significant debt repayments due, including international sovereign bonds and both domestic and foreign debts. The Sri Lankan rupee depreciated sharply in April 2022, reaching its lowest value, with the US dollar gaining strength against it (Lockett, 2022).

Sri Lanka is combating a severe economic crisis that has led to high inflation, shortages of food and fuel, and dwindling foreign reserves. This crisis has pushed millions of people into poverty, endangering their access to healthcare, education, and a decent standard of living. The impact of the crisis has been particularly harsh on families, as the percentage of those reducing food consumption has risen from 36% during late 2020 to 70% in April 2022, compounding the effects of the ongoing pandemic (Human Right Watch, 2022).

6.1.1 Tax reductions and money creation

In 2019, during the presidential campaign, promises were made to reduce taxes if the current government was re-elected, raising concerns about revenue generation. Despite this, voters and the government didn't focus on the financial implications. The government secured over 52% of the vote in the November 2019 election and proceeded with substantial tax reductions. However, these tax cuts, aligned with the president's policy, have led to a decline in government revenue and fiscal health, leading to significant budget deficits (Sumathi, 2022).

6.1.2 The external debt of Sri Lanka

Sri Lanka's external debt has doubled from 2010 and 2020. Foreign debt was approximately 42 percent of its GDP in 2019, however it has gone up to 119 Percentage of its GDP in 2021 (Sharma, 2022). Despite criticisms blaming China, the Australian Lowy Institute indicated that Sri Lanka's debt crisis wasn't solely due to a Chinese debt trap, with only 10% of its total debt owed to China by April 2021. The majority of foreign debt (47%) is from international capital markets, followed by international development banks (22%) and Japan (10%). Sri Lanka faces a repayment of $4 billion to creditors by the end of 2022, while its government reserves stand at $2.3 billion as of April 2022 (Dupuy, 2022).

6.1.3 The Sri Lankan agriculture crisis

In April 2021, the government's decision to allow only organic farming by banning inorganic and agrochemical fertilizers impacted the Sri Lankan economy heavily. While the government cited health benefits, critics say the move as a response to financial constraints rather than health concerns.

The ban aimed to conserve foreign reserves by curbing fertilizer imports, impacting agriculture production (George and George, 2020). Tea production, in particular, suffered substantial losses, and a 20% decline in rice production led to rice imports. Tea farmers highlighted the challenges, noting that organic farming is significantly costlier and less productive than conventional methods.

6.1.4 The Sri Lankan Tourism Sector

Sri Lanka's tourism industry faced setbacks due to the 2019 Easter bombings and the COVID-19 pandemic (Dupuy, 2022). With closed borders, tourism revenue drastically declined, impacting the country's GDP as tourism contributes 13% and also serves as a foreign exchange source. The number of tourists plummeted from 2.3 million in 2018 to just 173,000 in 2020. This decline led to a tourism revenue reduction to $2.8 billion by 2021. Economists suggest a well-structured taxation system and an export-oriented growth strategy to aid recovery from the debt crisis, and it was hoped that the country would achieve a full financial recovery (World Bank Group, 2021).

6.1.5 Tea exports and tourism have been affected by the Russian-Ukrainian war

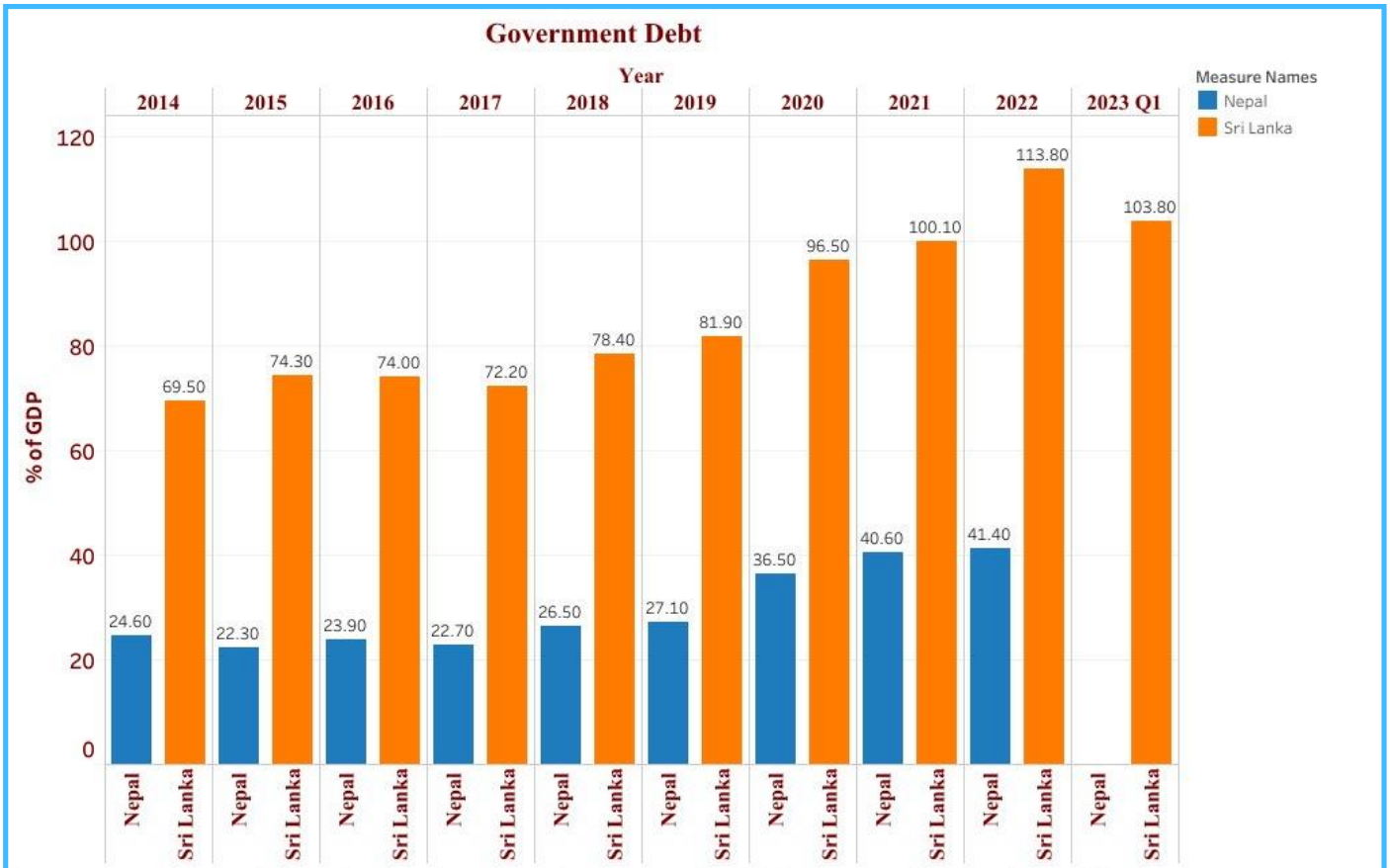
Because of the ongoing tense situation between Russia and Ukraine due to the Russian-Ukrainian War, Sri Lanka's economic conditions are already sluggish (Weerasooriya, 2022). Due to the Russian invasion of Ukraine in 2022, Sri Lanka has suffered further economic hardship, as Russia is the second biggest market for Sri Lanka's tea exports. Additionally, Sri Lanka's tourism industry is heavily dependent on these two nations, as the majority of visitors arrive from either Russia or Ukraine (www.dw.com, 2022). As a result, the Ukrainian crisis has put a halt to economic recovery in Sri Lanka, which has been adversely affected by both the tea and tourism sectors (Parkin, 2022).

6.2 Comparison between Nepal and Sri Lanka

The recent political and economic crisis in Sri Lanka has prompted people to compare Nepal’s economic environment to that of Sri Lanka. But the nature and extent of problems in the respective economies are different. Though a few indicators look similar for both countries, Nepal’s growth rate in the year 2022 was 5.61% whereas the growth rate of Sri Lanka was - 7.82% in the year 2022 according to the World Bank Data. The Sri Lankan economy was left shattered by the terrorist attacks in 2019 and later, the Covid-19 pandemic. Sri Lanka is facing the worst economic crisis since the

pandemic period. Nepal's growth rate was revitalized by rising economic activities after a two-year suffering, primarily caused by the COVID-19 pandemic.

Figure 11: Government debt as a % of GDP



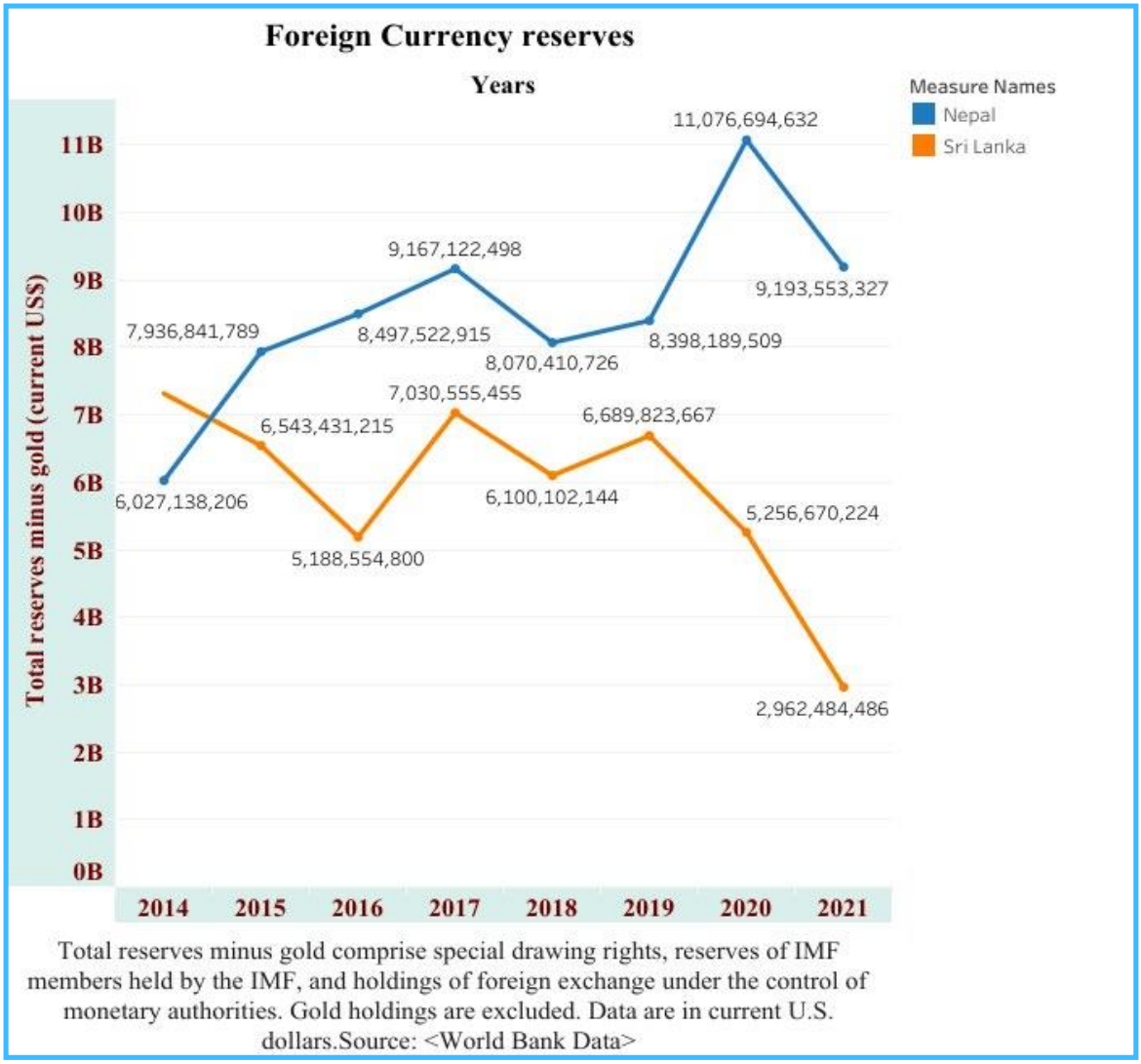
Sri Lanka: From 2010 onwards, data are based on rebased GDP estimates (base year 2015) of the Department of Source: Ministry of Finance Census and Statistics released on 15 March 2023. Central Bank of Sri Lanka. The annual GDP estimate, based on the GDP estimates of the relevant quarter and the preceding three quarters, was used to compute the outstanding central government debt stock as a percentage of GDP.
Nepal: Since 2010/11, GDP based on revised estimates published by CBS in April 2021 following SNA 2008.Data Source: < Nepal Rastra Bank>

In the year 2022, Sri Lanka's total foreign debt amounted to 113.80% of their GDP whereas in the same year, Nepal had only 41.40% of their GDP. This clearly shows Sri Lanka's debt is increasing rapidly compared to Nepal. Sri Lanka has declared that it is incapable of paying foreign debt as the foreign currency reserves are declining and the widening trade deficit. Although, like Sri Lanka, Nepal is also facing rising foreign debts, the situation of the Nepalese economy is not as bad as theirs. Though export of goods and services have increased from 16.93% in 2021 to 21.48% in Sri Lanka, their size and rates of growth are not sufficient to compensate for the cumulative loss in other sectors. However, there is marginal increase in the export of goods and services from the year 2021 to 2022 in Nepal. The current account deficit widened significantly in both countries mainly due to a COVID-

19 pandemic and a substantial loss in tourism income. However, remittances, despite pandemics, increased marginally in both countries.

Before the pandemic, the foreign currency reserves in Sri Lanka were 6 billion US$ in the year 2019. Due to the COVID-19, its foreign currency reserves reduced significantly in the following years and reached 2 billion US$. Due to low foreign exchange reserves, Sri Lanka was unable to import necessities. Sri Lankans' living standards have significantly declined as a result of the country's total reliance on imported petroleum. Citizens started utilizing wood fuel in place of gas and spent days in line at gas stations. In March of 2022, irate individuals discreetly started to take to the streets. Along

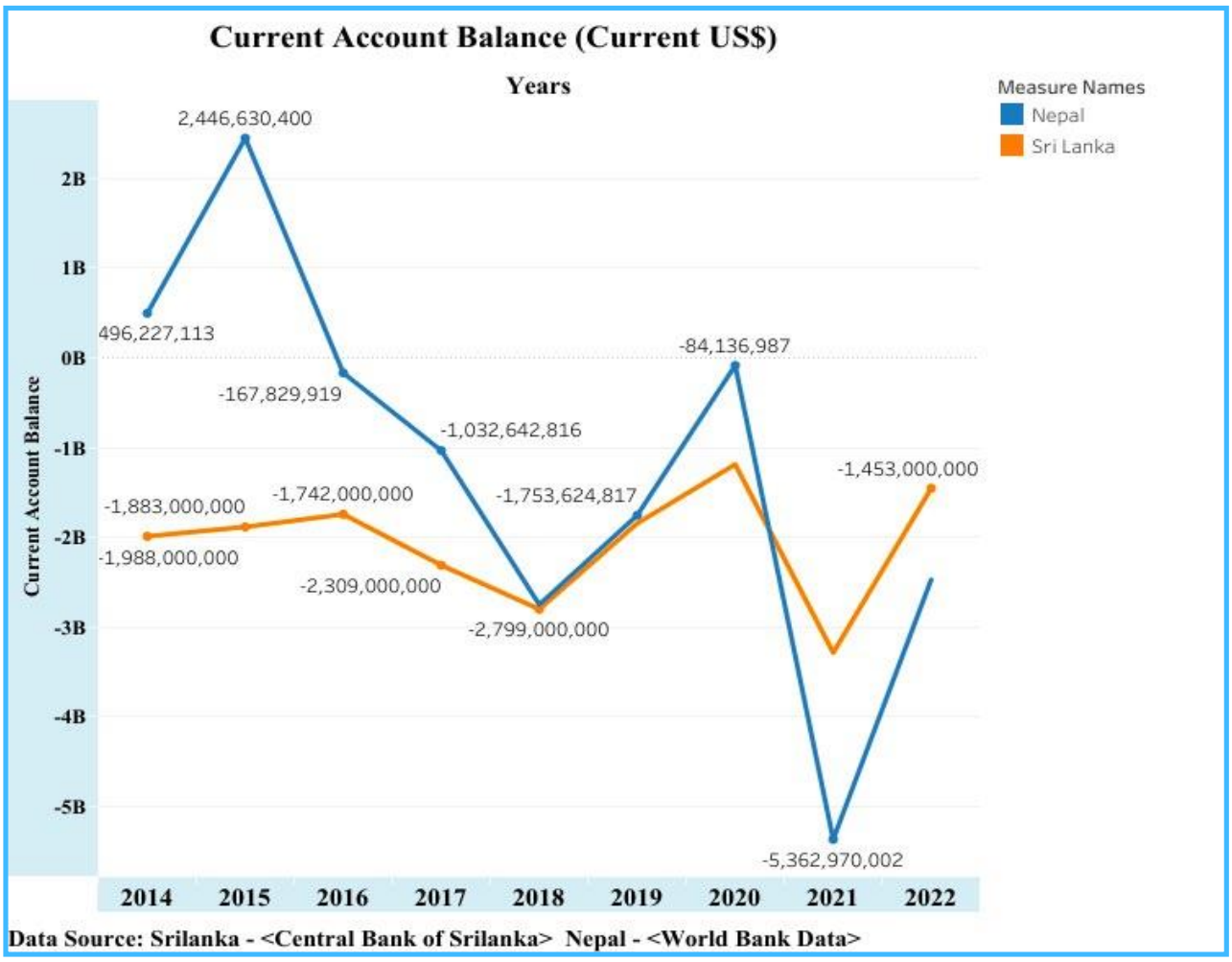
Figure 12: Foreign Currency Reserves (Current US$)



with the reduction in commodity export, remittances from Sri Lankans working abroad also declined. Sri Lanka doesn't have enough foreign currency to cover import costs or pay off debt. Through cash exchanges with Bangladesh and India, the government was able to survive until 2022. However, Sri Lanka's lack of foreign exchange reserves damaged its reputation and prevented the opening of import

letters of credit, which are necessary to facilitate imports (Etsuyo, 2022). However, the situation in Nepal is not like that of Sri Lanka. Nepal's foreign currency reserve was reduced in the pandemic period but it has managed to increase its reserve in the coming years as the number of Nepali workers taking approval for foreign employment has given some confidence for the future.

Figure 13: Current Account Balance



Nepal also adopted an expansionary policy after the devastating earthquake of 2015 followed by the Covid-19 pandemic and public debt rose to more than 40 per cent of the GDP, including external public debt which is nearly 23 per cent of the GDP. However, Nepal's public debt remains low. Both domestic and external loans for Nepal are small in comparison to the size of the economy. Interest rates and maturity periods are also highly favorable for Nepal. Nepal's decline of foreign exchange cannot be attributed to public debt and its debt-servicing requirements and reflects a different situation from that of Sri Lanka.

Nepal has taken a number of steps to discourage imports and increase foreign exchange earnings. That includes prudent economic policy, the temporary ban on imports or a requirement to keep a 50-100 per cent margin to open letters of credit to import a few luxury and non-essential goods, and increased interest rates. However, import restrictions and restricting foreign exchange in trade and services are not long-term solutions. It will raise inflation, increase unauthorized trade and capital flight, and suppress growth. Having said that, Nepal is trying to reduce the external sector vulnerability in the medium and long term by exporting a higher volume of electricity to India and Bangladesh. The recent visit of the Nepalese Prime minister Pushpa Kamal Dahal signed an agreement with the counterpart of India, Prime minister Narendra Damodar Das Modi to export 10,000 Megawatts of Electricity to neighboring India in the coming 10 years. This will help to increase Nepalese export earnings and ultimately help in reducing the current account deficit in the coming future.

6.3 Lessons for Nepal

The crisis in neighboring Sri Lanka has sent an important message to developing countries like Nepal, which have unstable politics and weak external sectors. Like Sri Lanka, Nepal is also dependent on tourism, remittances, external debt, grants and imports. Thus, the policy makers should learn from the Sri Lankan experience and implement the economic policies cautiously.

The Sri Lankan case serves as a cautionary tale illustrating the consequences of ill-advised political decisions. It underscores how electoral promises made by political parties, driven by a desire for immediate popularity, can jeopardize the overall economy. Consequently, Nepal should also avoid such cheap popularity in the election that can aggravate the economic crisis. Nepal should carefully evaluate the feasibility and potential effects of the policies before putting them into effect. For instance, the government's distribution of fertilizers to farmers has led to a scarcity, resulting in complaints of inadequate access during critical agricultural periods, ultimately impacting crop yields. Populist policies seem good initially but can prove detrimental to society, often favoring select interest groups. Hence, a comprehensive evaluation of the long-term consequences of such policies is imperative before their implementation.

Moreover, instead of heavily relying on foreign investment to fund major projects, the government could explore alternative approaches such as introducing appealing development bonds, initiating IPOs for state-owned enterprises, and engaging in Public Private Partnerships (PPPs). These strategies could enhance project completion within timeframes. Gradual reduction of dependency on remittances and foreign loan grants for foreign currency reserves should be facilitated through export

promotion and fostering a favorable climate for foreign investors. Given Nepal's limited production and export scope, economic diversification is pivotal. Mitigating vulnerability to external shocks can be achieved by prioritizing sectors with inherent growth prospects and comparative advantage, such as hydropower, tourism, and information technology. Addressing flaws in policy formulation, decision-making, and debt management is imperative. Sri Lanka's crisis serves as a crucial lesson, illustrating how a once vibrant economy can decline significantly.

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