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Original Article

Effect of International Trade on Economic Growth of Nepal

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Abstract *- International trade is a significant source of economic revenue for any country. This study investigated the impact of international trade on Nepalese economic growth. The objectives of this study were to ascertain the effects of import, export, remittance, and foreign financing trade on the Nepalese economy. The data used for the study was extracted from the Ministry of Finance, the Government of Nepal, the Nepal Economic Survey, and the Nepal Rastra Bank, covering the period from 1978 to 2020. The data were analyzed using the software E-views 12. Multiple regression analysis techniques were employed in estimating the various components of international trade. The empirical evidence indicated a significant effect of international trade on the economic growth of Nepal.*

Keywords *- Gross Domestic Product, Import, Export, Remittance, International Trade.*

1. Introduction

In the classics, Adam Smith and David Ricardo argued that trade positively influenced economic growth since bigger accumulations of technical advancement and capital would boost productivity and lead to higher welfare gains as well as higher growth. Economic growth has existed throughout history, but the rate of expansion has evolved from slow and irregular to more dynamic, quick, and consistent, particularly following the Industrial Revolution (Baines, 2003). Some authors propose this as an explanation for economic expansion. This phenomenon now plays a key role in endogenous growth models. According to Grossman and Helpman(1991) and Afonso (2001), international trade became one of the primary engines of growth since it allowed for technology transfers from industrialized to developing countries.

International trade is regarded as a critical factor in promoting economic development. Most countries engage in overseas commerce to create jobs, enhance the propensity to save, increase foreign exchange earnings, and increase the productivity of investment by shifting it from less productive to more productive usage (Hussain 1996). Because of the benefits of openness, it has become an essential component of any country. Trade is the major means for developing countries to reap the benefits of globalization. Imports increase competitiveness and diversify domestic markets, which benefits consumers. Foreign trade benefits businesses by providing access to enhanced capital inputs such as machines and tools while also increasing productivity. Foreign trade promotes the redistribution of labor and money to more productive industries. It has, in particular, contributed to the ongoing movement of some manufacturing and service operations from industrial to developing countries, opening up new economic potential.

International trade is the type of trade that is done between or among different countries. It is also known as "external trade," as it is the process of exchanging goods and services between different countries. The international trade theory helps countries export and import goods and services. In particular, there are two types of profit during trade: maximum wealth through export and maximum satisfaction through imported goods and services. Economic growth occurs when an economy achieves sustained development, which supports positive changes in social indicators, as it is one of the major indicators for development. It can be affected by social factors like social values and norms and economic factors like the availability of resources and their state of utilization. There is a relationship between foreign trade and economic growth, as "foreign trade promotes the economic growth of a country" (Chen, 2009). There can be a positive effect on economic growth, trade openness on economic growth, exports, imports, FDI, and remittances of the country (Manni et al., 2012).

A country's trade volume is affected by the country's size, distance to trade partners, transportation costs, world demand, etc., but not only by its trade policy. Thus, to capture a country's degree of openness to trade, it directs trade policy measures like tariffs and non-tariff barriers (Ulasan, 2012). There is a long-term relationship between international trade and economic growth as it allows deviations in the short run when there are adjustment mechanisms for variables to equilibrium when values take place. In the long run, policy considerations are formulated according to the equilibrium value of variables (Caleb et al., 2014). In Kenya, the effect of trade openness on investment level influenced the economic growth rate in the long run interaction with physical growth (Musila & Yiheyis, 2015).

2. Statement of Problem

In the past decades, there has been debate about the degree of influence that international trade has on the economic growth rate. The interconnection between international trade and economic growth encourages sharing of production and information technology ideas (Khobai & Chitauro, 2018). In both theoretical and empirical research, there has been a long controversy about the effect of international trade on economic growth. There is a positive effect of trade on output and growth (Singh, 2010). Exports have a positive and significant effect on economic growth, while imports have a positive but non-significant effect (Kalu et al., 2016). There is a significant effect on economic growth in both the long and short run (Sikwila et al., 2014). Sarkar (2008), in the study of time series analysis in India, found a negative impact of trade openness on growth. There is a long-term stable relationship between trade openness and economic growth (Kong et al., 2021). International trade and economic growth have inconclusive relationships (Balaguer & Cantavella, 2002).

3. Objectives of the Study

The major objective of the study is to analyze the effect of international trade on the economic growth of Nepal.

4. Hypothesis of the study

H1: There is a significant effect of international trade on the economic growth of Nepal

5. Literature Review

A huge amount of literature is used to determine the relationship between international trade and economic growth. Many studies have demonstrated the relevance of international trade for economic growth. Some countries accept the export-led hypothesis, while others support the import-led hypothesis.

Growth and trade liberalization can have a negative or positive relationship. Data from 1920-1940 showed a negative relationship, which has since turned positive, while data from 1869-1913 showed a negative relationship, which has since turned positive (Vamvakidis, 2002).

Trade openness and growth have a good and significant relationship. Because of the lack of imports, the effect of capital expansion on GDP growth has shifted to the negative. It is due to capital stock series flaws or capital being variable. FDI and remittances exhibit rapid growth in the post-liberalization period, while GDP rises and accelerates. Both exports and imports surged after the liberalization period, while imports increased faster than exports soon after liberalization. With liberalization, the inflation rate declined due to the availability of cheaper imported commodities from international financial organizations. The availability of imported intermediate and investment goods is the primary driver of growth. Following the post-liberalization period, there was a significant increase in FDI. As a result, after liberalization, those elements result in a larger GDP (Manni et al., 2012).

The link between trade openness and long-run economic development was investigated using Bayesian model averaging approaches to account for model uncertainty. There was a strong inclusion of varying proxies of trade openness in the analysis, and none of the proxies was highly associated with economic growth (Eris & Ulasan, 2013).

Cointegration was approached using an autoregressive distributed lag (ARDL) strategy (Umer, 2014). The research was conducted in South Africa to determine the effect of trade openness on economic growth, and the results suggest a considerable effect on economic growth in both the long and short run (Sikwila et al., 2014).

The impact of trade openness on economic growth in Nigeria was studied from 1991 to 2013. Using the conventional linear regression model (CLRM), the results reveal that exports positively and significantly affect economic growth. In contrast, imports have a positive but non-significant effect (Kalu et al., 2016).

The determinants of trade openness were strongly and positively linked with economic growth in the long run during the study period from 1960–2000. (Ulasan, 2012). It was discovered that there was a bidirectional association between trade openness and economic growth in several developed and developing countries (Rahaman et al., 2017).

Agbo et al. (2018) researched the influence of export trade on the Nigerian economy and the impact of import trade on the Nigerian economy. The technique of multiple regression analysis was used to estimate the various components of foreign trade. The study's data was obtained from the 2012 issue of the CBN statistics bulletin, which covered the years 1980 to 2012. The study's findings revealed that export commerce substantially impacts Nigerian economic growth. The study also found that import-export trade had no substantial impact on Nigerian economic growth.

Acharya (2019) investigated the growth, composition, and direction of Nepalese foreign trade. The analysis was based on secondary sources, and data was gathered from several Ministry of Finance publications spanning the years 1990/91 through 2016/17. The analysis relied on simple statistical tools such as ratio and percentage. This analysis demonstrated Nepal's dismal export performance.

In a very recent period, Rana (2020) investigated trade openness's impact on Nepal's economic growth from 1975 to 2019. The study results revealed a long-run relationship between Nepal's international trade and economic growth over the study period using the ARDL limits testing approach to cointegration in the multivariate framework. The long-run estimations of the ARDL model revealed

that Nepal's level of trade openness predicts the country's rate of economic growth favorably and significantly in the long run. The study also found that the amount of investment had a positive and significant long-run effect on growth in Nepal across the study period, lending support to the trade-induced investment growth hypothesis. It asserted that trade openness influences economic growth via the channel of investment.

6. Research Methodology

6.1. Research Design

Descriptive and analytical research designs are used to show the relationship between international trade and economic growth.

6.2. Nature and Sources of Data

Data are gathered from the Ministry of Finance, the Government of Nepal, the Nepal Economic Survey, and the Nepal Rastra Bank from 1978 to 2020.

6.3. Model Specification

A Keynesian consumption function can be used to analyze the effect of international trade on the economic growth of Nepal. An econometric model shows the relationship between dependent and independent variables.

$$C = f(Y) \quad \text{..... (1)}$$

Where

$$GDP = a + b1M + b2M + b3Rem + b4FF + \varepsilon \quad \text{..... (2)}$$

Where GDP represents the economic growth, X is for export, M represents import, REM represents remittance, and FF represents foreign financing.

6.4. Introduction to Variables

Gross Domestic Product (GDP): GDP is the total amount of goods and services produced inside a country's borders over a specific period. It also assesses the monetary worth of the final goods and services the final user brings and generates in a country over a certain period (Callen, 2008).

6.4.1. Import

An import is a product or service purchased in one country but manufactured in another. International trade is made up of imports and exports. A country has a negative trade balance, also known as a trade deficit, when the value of its imports exceeds the value of its exports (Segal, 2021).

6.4.2. Export

Exports are goods and services manufactured in one country and sold to purchasers in another. International trade consists of both exports and imports. Exports are extremely significant in modern economies because they provide people and businesses with many additional markets for their goods. One of the primary responsibilities of government diplomacy and foreign policy is to promote economic commerce by stimulating exports and imports to the advantage of all trading parties (Segal, 2021).

6.4.3. Remittance

A remittance is a transfer of funds from one party to another. A remittance is broadly defined as any payment of an invoice or bill. Remittances are becoming increasingly important in the economies of small and underdeveloped countries. They also contribute significantly to disaster relief, frequently exceeding official development contributions (ODA). They contribute to raising living standards in low-income countries and combating global poverty. Indeed, since the late 1990s, remittances have outpaced development aid and, in certain circumstances, account for a major portion of a country's GDP (Murphy, 2022).

6.4.4. Foreign Financing

Foreign financing provides external money and better financing circumstances to developing world exporters. This channel boosts their export survival rates and may also promote economic development. Domestic finance refers to any business and economic transactions within a country's domestic boundaries. On the other hand, foreign finance refers to transactions that occur across international borders (Shakti & Vaidya, 2022).

6.5. Method of Data Analysis

Secondary source data was evaluated utilizing a variety of statistical methods and approaches. The study employed both descriptive and inferential statistics. The collected data were processed and analyzed using Microsoft Excel and E-views 12. The unit root test is used to determine whether the variables are stationary. The normality test, the LM test for serial correlation, the heteroscedasticity test, and lastly, the regression analysis were utilized.

7. Empirical Results and Analysis

7.1. Augmented Dickey-Fuller Test

The Augmented Dickey-Fuller (ADF) test has been performed to confirm the presence of stationarity between the variables. E-views 12 data software tests the stationarity of the variables at the level and first difference. The table shows the outcome of the ADF test.

Table 1. Summary of Augmented Dickey-Fuller Unit Root Test of Level Series

Variables	Constant	Constant and Trend	None
GDP	-0.891144 (0.7816)	-1.054064 (0.9245)	2.757519 (0.9981)
Import	-0.405065 (0.8991)	-2.304096 (0.4222)	9.916469 (1.0000)
Export	-1.495560 (0.5263)	-0.531832 (0.9781)	2.253345 (0.9933)
Rem	0.201068 (0.9696)	-2.531834 (0.3121)	5.185651 (1.0000)
FF	-1.986690 (0.2914)	-2.752289 (0.2221)	5.487505 (1.0000)

Table 2. Summary of Augmented Dickey-Fuller Unit Root Test at First Differenced Series

Variables	Constant	Constant and Trend	None
D(GDP)	-11.84867 (0.0000)	-11.90788 (0.0000)	-12.00648 (0.0000)
D(Import)	-9.184732 (0.0000)	-9.030712 (0.0000)	-9.302129 (0.0000)
D(Export)	-6.438858 (0.0000)	-6.498121 (0.0000)	-6.497039 (0.0000)
D(Rem)	-12.83927 (0.0000)	-12.68929 (0.0000)	-13.00202 (0.0000)
D(FF)	-7.324109 (0.0000)	-7.337939 (0.0000)	-7.421217 (0.0000)

To see the effects of GDP, Import, Export, Remittance, and Foreign Financing on international trade should run a regression equation to analyze the coefficients of the variables. Variables must be stationary, so the regression equation must be fitted in an appropriate econometric model. The unit root test is used to check whether the variables are stationary. The ADF test result, as given in table 1, explains why all five variables (GDP, Import, Export, Remittance, and Foreign Financing) are not stationary at the level. So, in the investigation, ordinary differencing was applied. Here, the P-value of export is less than 5 percent, so we reject the null hypothesis and accept the alternative hypothesis.

Similarly, the P-value of foreign finance, GDP, import and remittance are also less than 5 percent, so we reject the null hypothesis and accept the alternative hypothesis. As a result, these five variables are differentiated. We conclude that the variables are stationary. As a result, after the first difference, the five variables become stable, and the integration of order one is I (1).

7.2. Descriptive Statistics Result (Normality Test)

Table 3. Normality Test

Statistics	Results
Mean	-212e-10
Median	-8423.287
Maximum	140186.4
Minimum	-14837.9
Std. Dev.	56253.41
Skewness	0.553293
Kurtosis	3.374523
Jarque- Bera	2.746011
Probability	0.253344

From table 3, the skewness value is 0.55, and the kurtosis value is 3.374523, which indicates the variables are normally distributed. Similarly, the Jarque-Bera value is 2.746011, which is greater than the 5% significance level, indicating that we accept the null hypothesis, i.e., the data are normally distributed.

7.3. LM Test for Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

Table 4. LM Test for Serial Correlation

F-statistic	3.159540	Prob. F(2,37)	0.0657
Obs* R-squared	6.418407	Prob. Chi-Square(2)	0..0610

Table 4 shows that the p-value of the Breusch-Godfrey Serial Correlation LM Test is 0.0610, which is greater than the level of significance of 5 percent. It means that there is no serial correlation.

7.4. Heteroskedasticity Test

Null hypothesis: There is No Heteroskedasticity; Alternative hypothesis: Presence of Heteroskedasticity.

Table 5. Heteroskedasticity Test

Heteroskedasticity Test: ARCH			
F-statistic	0.011827	Prob. F(1,41)	0.9139
Obs* R-squared	0.012401	Prob. Chi-Square(1)	0..9113

Table 5 depicts that the Probability chi-square is greater than 0.05 or 5 percent, which means the researcher cannot reject the null hypothesis. Therefore, the researcher has to accept the null hypothesis, concluding there is no problem with Heteroskedasticity. There is homogeneity in the variance of error terms or variance are equal.

7.5. StabilityTest(CUSUM)

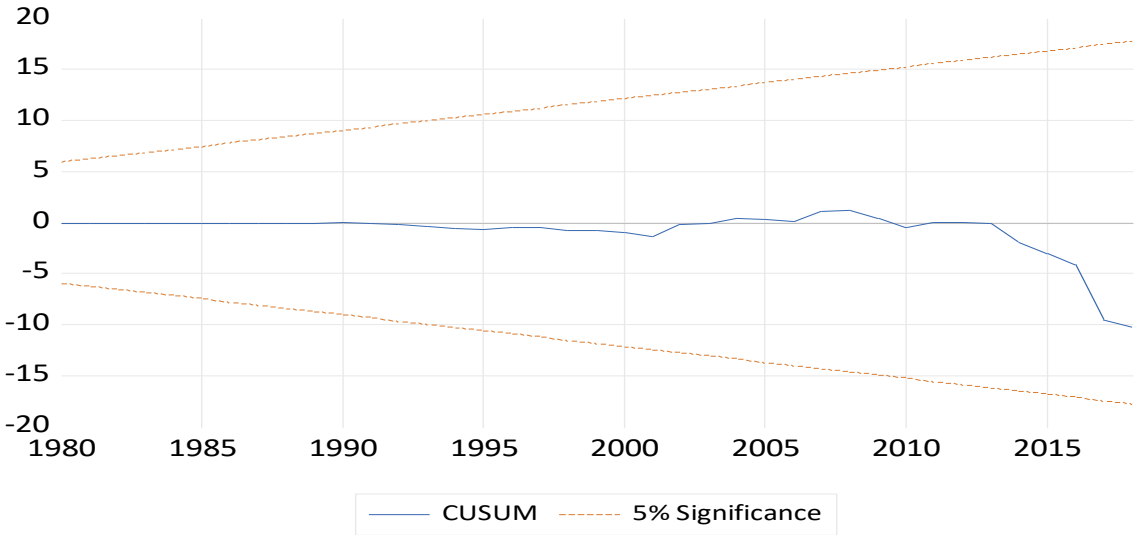

Fig. 1 Stability Test

Fig. 1 shows the stability of the model. The diagram shows that the model is stable for the study because the CUSUM line is between a 5 percent significance level.

7.6. Regression Analysis

Table 6. Regression Analysis

Variable	Coefficient	Std. Error	t-statistic	Prob.
Import	-2096539	0.305439	-6.864019	0.0000
Export	5.728046	0.589915	9.709943	0.0000
Rem	3.717559	0.261981	14.19019	0.0000
FF	13.72533	2.269728	6.047123	0.0000
C	18060.36	14814.01	1.219141	0.2301
R-Squared	0.993556			
Adjusted R-Squared	0.992895			
F-Statistic	1503.212			
Prob(F-statistic)	0.000000			
Durbin Watson Test	1.801979			

Import, Export, Remittance, and Foreign Financing were used as predictors to regress the dependent variable GDP. We reject the null hypothesis since Import, Export, Remittance, and Foreign Financing all have P-values less than 5% of the significance level, indicating that they impact the dependent variable. Import harms growth (GDP) as indicated by a coefficient value of -2096539 and statistically significant at 5 percent. This implies that imports have an inverse relationship with growth; the higher the import values, the lower the growth rate and vice versa. Likewise, export positively affects Growth (GDP) as indicated by a coefficient of 5.728046 and statistically significant at 5 percent. It implies that an increase in exports positively impacts growth; that is, growth increases as exports increase and vice versa.

Moreover, remittance positively affects Growth (GDP) as indicated by a coefficient of 3.717559 and statistically significant at 5 percent. Furthermore, foreign financing positively affects Growth (GDP) as indicated by a coefficient of 13.72533 and statistically significant at 5 percent.

The table above shows the relationship existing between the dependent and independent variables as stated thus:

GDP=18060.362096539*IMPORT+5.728046*Export +3.717559*Rem+13.72533*FF

According to the import coefficients, every unit change in import will result in a -2096539 unit change in GDP. Since the export coefficient is 5.728046, every unit

change in export will result in a 5.728046 unit change in GDP. On the other hand, the coefficients of remittance are 3.717559, meaning that every unit change in remittance will result in a 3.717559 unit change in GDP. Similarly, the coefficient of foreign financing is 13.72533, meaning that every unit change in foreign financing will result in a 13.72533 unit change in GDP.

According to Table 6, the R-squared value is 0.993556, meaning that 99.35 percent of the dependent variable can be predicted by the independent variables (Import, Export, Rem, and FF), and the remaining percent can be explained by additional factors not included in this study. A strong regression model should have a Durbin Watson Stat of 2. The Durbin Watson Stat in this result, which is 1.801979, is close to 2. The Durbin-Watson figure of 1.801979shows that there is no incidence of autocorrelation. The whole model is statistically significant since the F test is significant at a level of significance of 5%.

8. Conclusion and Recommendations

This study examined the impact of trade openness on economic growth in Nepal over the period 1975-2020. This study has examined the impact of international trade on Nepalese economic growth. Import, export, remittance and foreign financing were used as the explanatory variables or regressors, while GDP growth rate was used as the dependent variable. Using an ordinary least squares regression process, the study concluded that all the variables favourably impact growth in the Nepalese economy.

As a result of the debate above, the following proposals must be carefully considered while creating policies. Nepal's foreign commerce has consistently suffered from deficits, which can negatively impact the nation's foreign currency reserves and attract macroeconomic instability. In the long run, ineffective population management could spell disaster for the nation's economy. The import substitution policy necessitates a comprehensive assessment to promote only those successful industries in global marketplaces. Therefore, the government should support a program of adequate investment in industries focusing on exports that incorporates a "right mix" of import substitutes and export promotion. It is advised that the government and policymakers adopt measures that would encourage domestic production and export because the study shows that international trade adds to economic growth.

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