Effect of International Trade and Economic Growth of Nepal

Nirma Kandel* and Mr. Gaurav Kumar Yadav

Abstract

This study investigated the influence of International Trade on the growing economy of Nepal. Data was collected from 1990/91 to 2020/21 AD. This study uses import, export, remittance, balance of trade as an independent variable and GDP as an economic growth of Nepal. This study finds that export(X), remittance(R) is not significant to explain GDP while import (M), and balance of trade (T) are significant to explain GDP of Nepal. The results suggest that the presence of International Trade has a substantial influence on the growing economy of Nepal. Therefore, the economic growth of Nepal somehow depends on the international trade.

Keywords: *International trade, Import, Export, Remittance, Balance of trade, GDP and Economic growth.*

Ms. Nirma Kandel*
MBS-F Scholar at the Lumbini Banijya Campus Nepal
Email Id: truth.amrin@gmail.com

Mr. Gaurav Kumar Yadav
Asst. Professor in Management, Haridwar University, India
Email Id: gauravky0107@gmail.com
**Corresponding author*

INTRODUCTION

International trade refers to the process of transferring capital, commodities, and services between other countries or regions (Grozdanovska, Jankulovski & Bojkovska). It is required for a minimum of two nations to participate in the activities including the collective engagement of merchants in cross-border trade. Traders participate in economic endeavors with the aim of maximizing profits, which arise from disparities in the international economic conditions of various countries (Adedji, 2006). The significance of international commerce arises from the inherent inability of any one country to create all the products and services necessary for consumption due to variations in resources and limitations (Adeleye, Adeteye, & Adewuyi , 2015). Consequently, this trade association implies that economies must engage in the export of products and services to create cash that may be used to fund the acquisition of commodities and services that are not feasibly produced inside domestic boundaries.

Foreign trade is widely recognized as a crucial determinant in expediting the pace of economic development. Many nations engage in international commerce with the aim of generating job opportunities, enhancing savings rates, boosting foreign currency revenues, and improving the efficiency of investment by transitioning from less efficient to more profitable uses (Hussain, 2005). Due to the advantages associated with openness, it has been widely acknowledged as an essential component of any nation. Trade serves as the principal mechanism via which developing nations may effectively harness the advantages associated with globalization.

The advantages derived from international commerce in Nepal may be enumerated as follows. To begin with, commerce plays a crucial role in facilitating the acquisition of essential resources such as capital goods, equipment, raw materials, and semi-finished goods, which are vital for fostering economic growth. Furthermore, commerce serves as a mechanism and channel for the diffusion of

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technical information, the exchange of ideas, the acquisition of expertise, proficiency in management, and the cultivation of entrepreneurial abilities. Additionally, commerce serves as the means through which international movement of capital occurs, particularly from industrialized nations to developing nations (Meier, 2005)

LITERATURE REVIEW

Jung and Marshall, (1985) examined the correlation between Gross Domestic Product (GDP) and exports in a sample of 37 developing nations over the period of 1950 to 1981. Their findings indicated that, with the exception of Israel, no significant causal link existed between these two variables.

Grossman and Helpman, (1991) and Ram (1990), claim that imports play a crucial role in facilitating the dissemination of capital and technological advances in international commerce. This is attributed to the ability of imported expertise to enhance domestic production capacities. Imports also play a crucial role in promoting economic interactions between individuals inside a country and those from outside nations. Jiadong Tong, (1995) conducted an examination of the association between economic expansion and import. He observed that the impact of import on the economy varied across various historical periods. However, overall, Tong identified a positive link between import and economic development.

Tang, (2006) revealed that there exists no enduring association between exports, GDP, and imports. This research provides more evidence that there is no direct relationship, both in the long-term and in the short term, between increased exports and economic development in China. This conclusion is drawn using the Granger causality test, which indicates that economic development does not have a causal influence on imports in the short term.

Shrestha, (2008) conducted an analysis on the impact of foreign employment and remittances on the economy of Nepal. The researcher reached the determination that remittances sent by migrant laborer's serve as an efficacious mechanism for reducing poverty. While foreign employment might be advantageous for the economy, there is a lack of sufficient infrastructure to support the growing trend of migration. The active involvement of the government in promoting overseas employment via the implementation and adherence to an economic outreach programme is vital.

Karagoz, (2009) conducted empirical study examining the relationship between remittances and economic development. The findings of the research indicate that there is a statistically significant and negative relationship between remittance flow and economic growth. In contrast, it can be shown that both exports and domestic investments have a beneficial impact on economic growth, however foreign direct investment does not provide a significant effect. Turkey, a country that saw consistent and substantial labor movement abroad starting from the 1960s, continues to be one of the leading nations in terms of remittance inflows.

Asmatullah and Muhammad, (2011) carried an analysis on the influence of employee's remittance on the economic progress of Azerbaijan and Armenia. They used a log linear regression technique to investigate this

relationship and ultimately determined that employee's remittance plays a key role in fostering favorable influences on economic growth.

Dahal, (2018) conducts a study on the influence of remittances on the economic progress of Nepal, specifically by investigating their implications on financial stability, productivity, global trade, and human capital development. This research examines the impact of remittances on economic development by analyzing their impacts on entrepreneurship and production. The results indicate a favorable correlation between remittances and entrepreneurship, while demonstrating a negative correlation between remittances with manufacturing. The impact of mixed effects on several parameters of productivity yields an inconsistent outcome.

Empirical research has consistently shown robust evidence supporting the notion that global trade has a favourable influence on economic development. This is primarily achieved via the facilitation of capital accumulation, upgrading of industrial structure, and advancements in technical and institutional domains. To be more precise, the augmentation of imports pertaining to capital and intermediary goods that are not readily accessible within the local market has the potential to enhance production efficiency (Sun and Heshmati, 2010).

International commerce has a significant role in promoting economic progress in emerging nations. The use of an econometric model led to the determination of a positive correlation between trade and economic growth (Busse & Kaniger, 2021). The use of a descriptive methodology revealed that Nepal's export achievement is significantly poor, leading to the issue of a quickly expanding trade imbalance. Nepal has challenges in diversifying its commerce both in terms of nations and goods (Acharya, 2021). The impact of import and export is contingent upon factors such as the specific origins and destinations involved, along with whether these trade activities are conducted between emerging or advanced countries (Lewis, 2021).

Singh and Khanal, (2010) studied the trade trends between India and Nepal in the post-1990 period. It has been observed that the escalating share of trading with India in Nepal's overall commerce has resulted in an augmented reliance on this adjacent nation for trade. Altaee, (2016) used the Autoregressive Distributed Lag (ARDL) and Error Correction Model (ECM) methodologies to examine the impact of trade on the economy in both the long-term and short-term. The findings of their research indicate that the act of exporting has a favorable influence on the overall economic development of Saudi Arabia. Conversely, the act of importing has a detrimental effect on the rise of the country's actual Gross Domestic Product (GDP).

Hypotheses of the study

- H_1: There exists a substantial correlation between imports and gross domestic product.
- H_2: A substantial correlation exists between the export sector and the gross domestic product.
- H_3: A substantial correlation exists between the balance of trade and gross domestic product.
- H_4: The presence of imports has a substantial impact on the level of gross domestic product.
- H_5: The impact of exports on gross domestic product is statistically significant.

H_6: The balance of trade has a considerable impact on the gross domestic product.

Research Framework

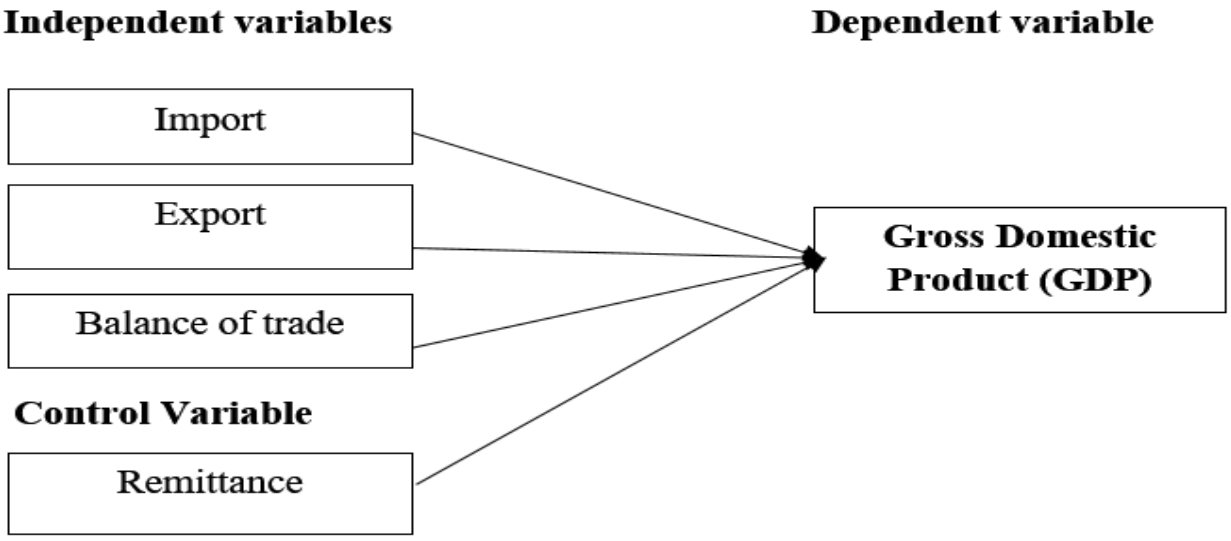

Fig 1: Conceptual framework (Note: Adapted from (Adeleye, Adeteye, & Adewuyi , 2015)

RESEARCH METHODOLOGY

The research methodology encompasses the many methodologies and procedures used during the whole of the investigation. Research technique refers to a structured and methodical procedure used to address research inquiries and examine them in an impartial manner. The data are taken between the years 1990-2021. The analysis was initially focused stationary part of the concerned sequence by using ADF Test. Non stationary time series will be tested by taking first order or second order differences. After this procedure, the analysis will made on the effect of independent variable on the economic growth.

Research design

The study employs a research strategy that combines descriptive and analytical approaches. The objective of this research is to evaluate the correlation between the growing volume of international trade and the rise of Gross Domestic Product (GDP) in Nepal. The majority of the data used in this study has been sourced from pre-existing data found in a range of published works.

Nature and sources of data

This research relies on secondary data. The data used in this study have been obtained from reputable institutions such as the Ministry of Finance (MOF), reports of NRB, Economic survey, World Bank (WB), International Monetary Fund (IMF) etc. Time series spanning for research is from 1990-2021.

Model Specification

The links between exports, imports, the balance of trade, remittance, and economic development may be represented using a mathematical equation. The equation representing the model of regression is as follows:

Economic Growth (EG) = f (Export, Import, Balance of trade, Remittance)

$GDP = \alpha + \beta 1X + \beta 2M + \beta 3T + \beta 4R + el$

The term GDP refers to Gross Domestic Product, which serves as a measure of growth in the economy and is employed as a dependent variable in the present research. The variable X is used to represent the context of exports. The letter M is often used to represent imports, whereas the letter T is utilized to designate the balance of trade, and the letter R is assigned to signify remittance explanations. The independent variables included in this study are export, import, balance of payment, and remittance. The parameters β1, β2, β3, and β4 represent the coefficients in the model. The error term is denoted as e1.

Results and Analysis

Descriptive Statistics of Independent variable and Dependent variable

	DLNGDP	DLNM	DLNR	DLNT	DLNX
Mean	0.119017	0.139805	0.203757	0.058318	0.098323
Median	0.112112	0.151830	0.139216	-0.010352	0.096436
Maximum	0.270121	0.318565	1.316106	11.07498	0.618081
Minimum	0.007686	-0.169974	-0.167284	-9.177291	-0.196232
Std. Dev.	0.051930	0.116462	0.250836	2.673221	0.164313
Skewness	0.730484	-0.801447	2.927406	1.008177	0.885509
Kurtosis	4.334592	3.134345	14.07621	15.37149	4.870797
Jarque-Bera	4.894452	3.234151	196.2015	196.3994	8.295486
Probability	0.086533	0.198478	0.000000	0.000000	0.015800
Sum	3.570507	4.194138	6.112708	1.749528	2.949679
Sum Sq. Dev.	0.078206	0.393341	1.824642	207.2372	0.782964
Observations	30	30	30	30	30

It is stated that every variable has positive mean having the highest mean at remittance and lowest in balance of trade. From the above preview, standard deviation of balance of trade (T) is the highest value of 2.6732. This finding indicates that the data points are dispersed throughout a broader range of values relative to the mean.

Next, Skewness is a statistical metric that indicates the degree of symmetry in the probability distribution for a random variable with real values with respect to its mean. In the table, skewness value of GDP, remittance, export, balance of trade is positive which suggests data are skewed right having long right tail to the left tail. This situation suggests that variable is positively skewed. However, the skewness of import is negative which suggest that data are skewed left having long left tail to the right. This situation suggests us that import is negatively skewed.

Likewise, kurtosis defines how heavily the tails of a distribution differs from normal distribution. A distribution is considered normal if the kurtosis is 3. From the above table, we can conclude that no one have the value under 3.

From the probability values of variables in Jarque- bera statistics, variables have p-value greater than 5% level of significance indicating that we are accepting null hypothesis implying that the variable have normally distributed curve.

Stationary Test

Unit Root Test At Level

Variables	T-stat	P value
LNGDP	-0.9650	0.7515
LNM	-0.3015	0.9127
LNX	-2.9545	0.0510
LNT	0.8686	0.9936
LNR	-1.2555	0.6366

At 5% significance level

At First Difference

Variables	T-stat	P value
dlnGDP	-4.1608	0.0031
dlnM	-4.0054	0.0059
dlnX	-4.9630	0.0004
dlnT	-8.6093	0.0000
dlnR	-6.016	0.0000

At 5% level of Significance

The table provides information on the stationarity of five variables LnGDP, LnM, LnR, LnX, and LnT. The H_0 for the stationary test posits that there is no presence of non-stationarity or a unit root in any variable, whereas the H_1 suggests that the variable in question is really stationary. The first column of the table lists the variables, the second column indicates whether the variable is non-stationary or stationary based on the p-value of the ADF test at level. A p-value above 0.05 suggests that there is insufficient evidence to reject the H_0 of non-stationarity. implying that the variable is non-stationary. Conversely, a p-value less than or equal to 0.05 indicates that the null hypothesis of non-stationarity can be rejected, implying that the variable is stationary.

The second table provides the results of the ADF test after taking the first difference of each variable. The first difference is calculated as the difference between the current value and the previous value of the variable. This transformation can make a non-stationary series stationary. The unit root tests provide important information about the stationarity of the time series data. A non-stationary time series can be difficult to model and can lead to unreliable results. Therefore, it is important to determine if the variables in the dataset are stationary or not.

The outcomes of the unit root test indicating the presence of four variables, lnGDP, lnM, lnX lnT, and lnR, are non-stationary at the 5% level of significance with p-values greater than 0.05. This suggests that these variables have a unit root, indicating non-stationarity. However, after taking the first differences, lnGDP, lnM, lnX, lnT and lnR become stationary with p-values of 0.0031, 0.0059, 0.0004, 0.0000, 0.0000 respectively. This indicates that these variables exhibit a trend and can be made stationary by taking first differences.

In summary, the results of the unit root tests show that variables in the dataset are non-stationary and require differencing to achieve

stationarity. The information obtained from these tests is important for selecting appropriate modeling techniques and for obtaining reliable results.

Table: Heteroscedasticity Test: Breush- Pagan-Fodfrey

Heteroscedasticity Test Breusch-pagan-godfrey (Null hypothesis: homoskedicity)		
F-Statistic	0.522265	prob F (4,25) 0.7202
Obs *R squared	2.313545	Prob. Chi-Square (4) 0.6783
Scaled explained	2.914026	prob. Chi-square (4) 0.5723

In the above table results shows that probability value of chi-square is 0.6783 and 0.5723 which is more than 5%, here we have to accept null hypothesis, meaning there exist homoscedasticity for good regression model, which is free from heteroscedasticity which is desirable. We need homoscedasticity to fit good regression model.

Test for Serial Correlation

Breusch-godfrey serial correlation LM Test			
F-statistics	1.628602	Prob. F (2,23)	0.2180
Obs *R-squared	3.721498	prob. Chi-Square (2)	0.1556

In the above table, the analysis results shows that Breusch- Godfrey serial correlation LM Test gives the probability value of Chi-square is 0.1556 which is higher than 0.05 or 5% here we cannot reject null hypothesis. So, we can conclude that this model is not suffering from serial correlation. So, the model is free from serial correlation where we can us this model for hypothesis testing of prediction with accuracy.

Multiple Regression Analysis

Variable	Coefficient	t- statistic	Prob
C	0.071211	5.348632	0.0000
dlnM	0.281920	3.849248	0.0007
dlnX	0.008995	0.176439	0.8614
dlnR	0.034599	1.159384	0.2573
dlnT	0.007847	2.657862	0.0135
R squared	0.485302		
Adjusted R- squared	0.402950		
Durbin- Watson stat	1.248716		
F- statistic	5.893032		
Prob (F- statistic)	0.001752		

From the above table, results obtained showed that p-values of Export to GDP and remittance to GDP are 0.8614 and 0.2573 respectively which suggest p- values are more than 5%

meaning that export (X) and remittance (R) are not significant to explain the GDP for economic growth. Likewise, the p-values for remaining variables, Import (M) to GDP and Balance of trade (T) to GDP has p- value 0.0007& 0.0135 which is less than 5% is considered significant to explain GDP growth.

Next, checking the sign of coefficients, our variables import (M), export (X), remittance (R), balance of trade (T) has positive coefficient sign which suggest positive meaning that when these variables go up, GDP goes up and when variables go down, GDP follows down.

Now moving towards R-squared analysis, the value of R-square is 0.485302 which means 48.5302% variation or fluctuation in GDP can be explained by our four independent variables as import(M), export(X), remittance(R), balance of trade(T). In other words, observed variables jointly can influence 48.5302% variation in GDP. The rest 51.4698% variation in GDP can be explained by other variables which are not taken in this model, known as residual of the model. The model is fitted because 48.5302% variations in GDP can be clarified by observed independent variables.

DISCUSSION

The relationship between imports and GDP exhibits a favorable and statistically substantial correlation. The obtained outcome aligns with (Ahmed,2022) and not consistent with (Altaee,2016)

Export to GDP has positive relation. This result is consistent with (Erfani, 1999 and Jung and Marshall, 1985) and not consistent with (Tang,2006 and Acharya,2021)

Remittance and GDP are not significant to explain the GDP. This result is consistent with (Karagoz, 2009) and not consistent with (Asmatullah and Muhammad,2011 and Dahal,2018).

Balance of trade and GDP are significant. This result is consistent with (Bakari and Tiba,2019) and inconsistent with (Busse and Koniger,2012).

Discussion Table

Variables	Results	Consistent	Not consistent
Import to GDP	There is positive and significant to GDP	(Ahmed, 2022)	(Altaee, 2016)
Export to GDP	There is positive and insignificant to GDP	(Tang,2006 and Acharya, 2021)	(Efrani,1999)
Remittance to GDP	There is positive and insignificant to GDP	(Karagoz, 2009)	(Asmatullah and Muhammad, 2021 and Dahal, 2018)
BOP to GDP	There is positive and significant to GDP	(Bakari and Tiba, 2019)	(Busse and Koniger, 2012)

CONCLUSION

This research exhibits that flow of remittance income is increasing every year but there is insignificant effect of remittance but positive relation on GDP. There is a substantial and positive association between import and balance of trade respectively with GDP. This research also finds that there is insignificant effect of export but with the positive relation on Gross Domestic Product. Its means that

increase of export helps to increase in GDP of the country.

IMPLICATIONS

Within, the framework of those explicated above, the study acknowledges the role of country's economy and international trade of Nepal and therefore, it is important to overcome the existing difficulties and failures to enhance the economic growth. Finding from the above discussion have an important implication of policy recommendation:

- This study found that export to GDP is not significant to GDP with positive impact. Therefore, government of Nepal should develop industry which focus more on export business with the favorable business environment for the growth of economy.
- From the study shows import to GDP is significant to GDP means importing the goods via international trade helps Nepal to grow economically. It is recommended, the government should focus more on the technical things and other goods for the productive sector to get more growth by import.
- As per the result, remittance is not used in productive sector as it is insignificant to GDP so that government of Nepal should use the remittance fund in productive sector so that it helps in economic growth of Nepal.
- To the future researcher it is recommend to take the more other affecting variables to conduct the results so that we can get the relation of different sector like foreign loan, balance of payment etc. with GDP.
- It is recommended to the future researcher to use the different model to get the different results.
- This research can be useful to the government of Nepal for the different purpose.
- It is suggested to the future researcher to add the normality test for the better result.

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