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EFFECT OF EXPORTS AND IMPORTS ON THE ECONOMIC GROWTH OF NEPAL

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Abstract

This research investigates correlations and dynamic impact between economic growth, exports, and imports in Nepal using time-series data from 1988 to 2021. The data was gathered from the Nepal Rastra Bank's quarterly economic bulletins and the government of Nepal's annual economic assessment. The data was analyzed using EViews 12 software. The coefficients of correlation and regression were calculated. Exports were shown to have a negative association with GDP, while imports were found to have a strong positive correlation with GDP. The regression analysis results indicated that the volume of exports and imports had a high degree of influence on the expansion of Nepal's economy. Therefore, the "right mix" of export promotion and import substitutes is exemplified by export-oriented industries, justifying a strategy of adequate investment in these sectors.

Keywords: *Export, Import, Gross Domestic Product*

I. INTRODUCTION

In macroeconomics, we study the broad trends and forces that can have an impact on businesses and the general public. Economic growth, price stability, the inflation rate, investment, employment, and government balance sheet performance are just a few of the goals that can be analyzed (Prasetyo, 2009). Since embracing globalization, the Nepalese economy has been increasingly dependent on foreign markets and companies. A large number of nations have

signed trade agreements with Nepal, allowing both imports and exports. International trade has become the blessing of globalization for developing countries like Nepal, which must import a wide range of commodities from overseas due to insufficient access to resources. Truth be told, international trade is what keeps the world's economy afloat. Every nation on Earth engages in international trade, including exporting and importing goods and services. If a country has a surplus of something, it will export it while importing whatever it needs. Gross domestic product measures the economic output of an economy by tallying the value of all final goods and services produced within its borders during a certain time period. As a broad gauge of the country's economic health, it serves as a scorecard of sorts for the country's overall performance.

The economic liberalization program of Nepal was first implemented in the middle of the 1980s and accelerated in the early 1990s, following the arrival of democracy in 1990. As a part of its economic liberalization, Nepal has sold off a number of state-run companies to private investors. The difference between exports and imports as a percentage of GDP in Nepal's economy widened substantially as the country embraced economic liberalization measures. Even after implementing the liberalization program, the import growth pattern persisted. It would be a disservice to the economy to minimize the significance of exports and imports. The difference between a country's exports and imports is called its trade balance. Exports are widely acknowledged as a key factor in economic progress and the alleviation of poverty, earning them the label "engine of economic and social development." They are the focus of development policies in emerging economies. The current industrial and agricultural sectors would be unable to function without the modern technology and machinery made possible by international trade. Trade with other countries is widely viewed as a key enabler of economic growth. Most countries trade with other countries to help their economies grow (Hussain, 1996). This is done by creating jobs, getting people to save more, bringing in more money through exports, and making investments work better.

Throughout the last two decades, Nepal has participated in a number of different trade agreements in an effort to boost its international trade. Nepal has joined several regional and global trade agreements and has actively participated in others. Having signed or approved the SAARC Agreement on a South Asian Free Trade Area, Nepal is a member of the South Asian Association for Regional Cooperation (SAFTA). More than four thousand products are given favorable duty treatment in member countries thanks to this trade agreement between eight south Asian countries (Nepal, Bhutan, India, Bangladesh, Pakistan, Sri Lanka, Maldives, and

Afghanistan). Carpets, textiles, floor covering, tea, coffee, drinks, spirits, vinegar, fruit or vegetable juices, spices like nutmeg, synthetic yarn woven fabrics, knit or crochet garments, accessories, food industry waste,animal feed etc. are the most valued exports from Nepal. The United States, India, Turkey, Bangladesh, and Germany are among Nepal's most important trading partners. Oil, gold, iron and steel, clothing, pharmaceuticals, cement, electronic equipment, food, and cars are among Nepal's most often imported goods. India is Nepal's primary trading partner for imports. Other countries include China, Indonesia, Argentina, South Korea, Malaysia, Japan, and Germany.

The world economy would collapse without international trade. Due to its many advantages, openness has become a fixture in every country. The benefits of globalization can only be realized by emerging countries through commerce. There is little doubt that consumers benefit from the increased competition and diversity that imports provide to domestic markets. Foreign trade is advantageous because it increases a company's access to capital inputs like machinery and tools that can be used to increase the company's productivity. A positive effect of international commerce is that it promotes the reallocation of resources, such as labour and capital, to industries that are more productive overall. To be more specific, it has helped move some manufacturing and service jobs from industrial countries to emerging countries, which has opened up new opportunities for growth. The purpose of this research is to examine how international trade has influenced Nepal's economic growth. Furthermore, the aim of this work is to investigate the relationship between exports, imports and the economic growth of Nepal. This begs the question, to what extent does international trade affect economic growth?

II. LITERATURE REVIEW

Empirical Review

Sharma and Bhandari (2005) attempted a study to deal with the role and impact of export and import, along with many other essential elements, with the goal of understanding the effects of foreign trade on the economic growth process of Nepal. Capital stock, labor force, average propensity to save (APS), relative price index (RPI), and government development expenditure as a share of GDP have all been taken into account, with export as a key determinant. GDP, PCI, and GDP growth rate were also used as the underlying measures of progress. Various econometric models were used to introduce these macro factors. The estimated empirical

results use annual data from 1974–1975 through 2002–2003. Several linear and log-linear models showed that growth in exports was linked to economic growth.

Taghavi et al. (2012) investigated the VAR technique between import, export, and economic growth in Iran from 1962 to 2011. The import and export variables were stressed in the examination of economic growth output cointegration analysis, allowing one to test for instances of direct long-run relationship, indirect long-run relationship, and impulse response function between export and import and economic growth. The empirical findings confirmed a long-run link between the variables studied. According to the findings, export has a long-term, direct, and positive association with economic growth. Also, there was a strong and negative link between imports and economic growth, and imports had a long-term effect on economic growth that was not good.

Bakari and Mabrouki (2017) investigated the relationship between Panama's exports, imports, and economic growth in a study. To do this, annual data from 1980 to 2015 were evaluated using the Johansen co-integration analysis of the Vector Auto Regression Model and the Granger causality tests. According to the findings of the investigation, there is no correlation between exports, imports, and economic development in Panama. On the other hand, the results revealed strong evidence of bidirectional causality between imports and economic growth as well as exports and economic growth. These results indicate that exports and imports are therefore viewed as the sources of economic growth in Panama.

Kartikasari (2017) performed research on the impact of export, import, and investment on the economic growth of the Riau Islands in Indonesia. The Riau Islands Provincial Economic Report, which covers an 8-year period from 2009 to 2016, was mined for information. The FOB value was declared by the importer and exporter to Indonesian customs for all exports and imports. The expansion of the economy was tracked by the gross regional domestic product figures issued by the central bureau of statistics, while investments were evaluated based on the amount of credit extended for such purposes by all banks in Indonesia to the Bank of Indonesia. The impact of independent factors on the dependent variable was investigated using panel data regression analysis. In this investigation, a random effect model proved to be the most effective framework for the analysis of panel data. The analysis indicated that whereas imports and investment both had large negative effects on economic growth, exports had a far smaller negative effect. All three factors affected the economic growth of Indonesia's Riau Islands province at the same time.

In a very recent period in the context of Nepal, using time-series data from 1965 to 2020, Panta et al. (2022) analyzed the equilibrium correlations and dynamic causation between economic growth, exports, and imports in Nepal. This study investigated the role that exports and imports play in Nepal's GDP growth and provided empirical evidence for the growth-led exports and growth-led imports hypotheses as well as the growth-led exports and growth-led imports short- and long-run assumptions. As expected, neither the export-led growth nor the growth-led export hypotheses were supported by the data. The research, however, backed up both the imports-led growth hypothesis and the growth-led imports hypothesis, at least in the long run. In the end, this article did not find any evidence to back up the claim that long-term economic growth is caused by international trade in Nepal.

Research Framework

To put it simply, a conceptual framework is a representation, either written or visual, of a hypothesized connection between factors. In this research paper export and import are taken as independent variables and Gross Domestic Product as dependent variable. The Conceptual Framework of the study is:

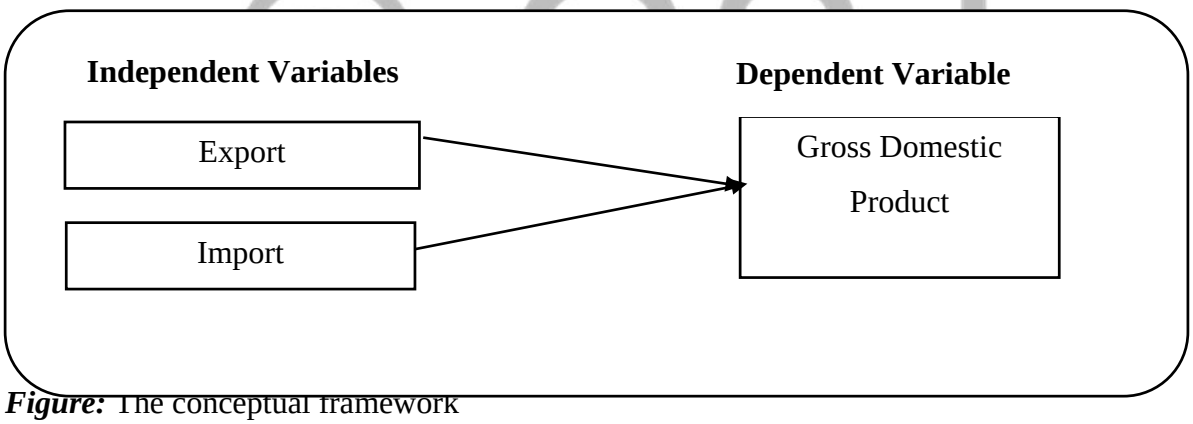


Figure: The conceptual framework

III. RESEARCH METHODOLOGY

Research Design: The research design is a comprehensive outline of the methods and procedures for gathering and analyzing the necessary data. This study employs a deductive approach based on both descriptive and analytical data to examine Nepal's economic growth. Exports, Imports and Gross Domestic Product (GDP) are the variables considered in the study.

Data Source: The information used here is secondary and based on macroeconomic indicators. This study is based on yearly time-series data for Nepal from 1988 to 2021. As a result, 35 observations were made. The data originates from the government of Nepal's economic survey

and the Nepal Rastra Bank's quarterly economic bulletin. The Nepalese rupee is used for trade and economic transactions.

Method: In this study, correlation and multiple regressions are employed. It's a method of statistical analysis wherein multiple independent variables are used to forecast a dependent one. In order to model the linear connection between the independent factors and the dependent variable, multiple linear regressions are performed. The multiple regression model is an extension of the ordinary least-squares (OLS) regression technique that allows for more than one explanatory variable.

Model Specification: Early empirical formulations have been well-tested to trace down and establish the causal relationship between imports, exports, and GDP growth by incorporating exports and imports into the aggregate production function, as utilized by Ramos (2001); Awokuse (2007); Khan et al. (2012) and, Saaed and Hussain (2015). The enhanced production function, which includes both exports and imports, is written as follows:

$GDP_t = f$ (exports, imports)…… (1)

The function can also be represented in a log-linear econometric format thus:

$\text{Log (GDP)}_t = \beta 0 + \beta 1 \log (\text{exports})_t + \beta 2 \log (\text{imports})_t + \epsilon_t$ ……..(2)

Where:

β0: The constant term

β1: coefficient of variable (exports)

β2: coefficient of variables (imports)

t: The time trend

ϵ: The random error term is assumed to occur normally, identically, and independently distributed

IV. EMPIRICAL ANALYSIS

Descriptive Statistics

Before employing any econometric technique to test for a relationship between key variables, it is important to examine and comprehend the statistical and descriptive behavior. Analyzing raw data quantitatively is the task of descriptive statistics. A quantitative, easily digestible

summary of the sample is provided. The data set is described and validated using measurements such as mean, median, standard deviation, minimum and maximum values of the variables, kurtosis, and skewness. Descriptive statistics is an important tool when figuring out how well a time series analysis worked. The demographic characteristics of the respondents were elucidated using descriptive statistics. The mean represents the average value of all observations, whereas the standard deviation illustrates the degree of difference between the values of the data.

Table No.1 Descriptive Statistics of Independent and Dependent Variables

	GDP	EXPORT	IMPORT
Mean	2866278.	24558.69	68081.49
Median	459443.0	8531.900	63679.50
Maximum	30310336	200030.9	192044.8
Minimum	76906.00	3998.560	8447.000
Std. Dev.	7431397.	39936.79	47727.07
Skewness	3.016149	3.250584	0.590351
Kurtosis	10.35382	13.53170	2.569595
Jarque-Bera	131.9315	223.3902	2.303157
Probability	0.000000	0.000000	0.316137
Sum	1.00E+08	859554.2	2382852.
Sum Sq. Dev.	1.88E+15	5.42E+10	7.74E+10
Observations	35	35	35

Table 1 depicts that Gross Domestic Product ranges from 76906.00 to 30310336 with a mean of 2866278 and a standard deviation of 7431397. The Export ranges from 3998.560 to 200030.9 with a mean of 24558.69.and a standard deviation of 39936.79. Similarly, the value of Import ranges from 8447.000 to 192044.8 with a mean of 68081.49.and a standard deviation of 47727.07. Distribution is considered normal if kurtosis and skewness are 3 and 0. From the table, it can be observed that skewness values of GDP, Export and Import are positively skewed.

Correlation Analysis

The Pearson correlation describes the degree to which two variables move together or independently. Pearson correlation is a technique used to establish the linear relationship between two data sets. It is essentially the product of the standard deviations and covariances of two variables. It's a type of econometric instrument for demonstrating the connection between dependent and explanatory variables. It's a pair of phrases that expresses how a shift of one variable causes a similar shift in another variable, either immediately or after some time elapses. The r-valued correlation coefficient is the most important output of the correlation analysis. The correlation coefficient was applied to describe the relationship between the dependent and independent variables.

The value of the correlation coefficient varies between -1 and 1. When the correlation coefficient is precisely -1, it is said that the variables have a perfect negative correlation. Conversely, the variables are said to have a perfect positive correlation if the correlation coefficient equals exactly +1.

Table No.2 Correlation Analysis

	GDP	EXPORT	IMPORT
GDP	1		
EXPORT	-.139	1	
IMPORT	.357*	.701**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The aforementioned table shows that there is a positive correlation, or a positive significant association, between the dependent variable GDP and the independent variable Import. If the values of independent factors rise, then the values of GDP rise as well, and vice versa. The value of GDP drops when the value of Export increases, and vice versa. This is because there is a negative correlation between GDP and Export.

Regression Analysis

Multiple regression analysis is a statistical technique for predicting the value of a dependent variable using the values of two or more independent variables. It analyzes the link between

multiple independent factors and one dependent variable. To make future projections, regression analysis is utilized to demonstrate the functional relationship between variables. It is used to examine the influence of independent variables on dependent variables. In this research, the dependent variable is Nepalese Economic Growth as measured by GDP, whereas the independent variable is Export and Import.

Table No.3 Regression Analysis

Dependent Variable: LOG(GDP)

Method: Least Squares

Included observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.056628	2.345356	3.435141	0.0017
LOG(EXPORT)	-1.246420	0.269241	-4.629385	0.0001
LOG(IMPORT)	1.580575	0.309358	5.109203	0.0000
R-squared	0.466895	Mean dependent var		13.34973
Adjusted R-squared	0.433576	S.D. dependent var		1.457789
S.E. of regression	1.097149	Akaike info criterion		3.105124
Sum squared resid	38.51955	Schwarz criterion		3.238439
Log likelihood	-51.33966	Hannan-Quinn criteria.		3.151144
F-statistic	14.01285	Durbin-Watson stat		1.858157
Prob(F-statistic)	0.000043			

According to Table 3, the R-squared value is 46.68 percent, meaning that 46.68 percent of the dependent variable can be predicted by the independent variables export and import 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 1.85, is close to 2. The whole model is statistically significant since the F test is significant at a level of significance of 5%. Export and Import were used as predictors to regress the dependent variable Gross Domestic Product (GDP). We reject the null hypothesis since

Export and Import have P-values that are less than 5% of the level of significance, indicating that they have an impact on the dependent variable. Results are comparable to those of Azeez et al. (2014), and Shreesh and Kishore (2012), who concluded that international trade is essential to economic growth and prosperity. According to the coefficients of Export, every unit change in export will result in a -1.246420 unit change in GDP. The Coefficients of Import, on the other hand, are 1.580575, meaning that every unit change in Import will result in a 1.580575 unit change in GDP.

Diagnostic Test

To assess the adequacy of the model specification, diagnostic tests are performed. It consists of three tests, namely serial correlation, heteroscedasticity, and normality, and the results of diagnostic tests are favourable to the model, indicating that model selection was appropriate.

1. Serial Correlation Test

Table No.4 Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.182862	Prob. F(2,30)	0.1303
Obs*R-squared	4.446301	Prob. Chi-Square(2)	0.1083

Null hypothesis: there is no serial correlation

According to Table 4, Prob. Chi-square is greater than 5 % which means we cannot reject the null hypothesis. So, we accept the null hypothesis, which concludes that there is no auto correlation.

2. Heteroskedasticity Test

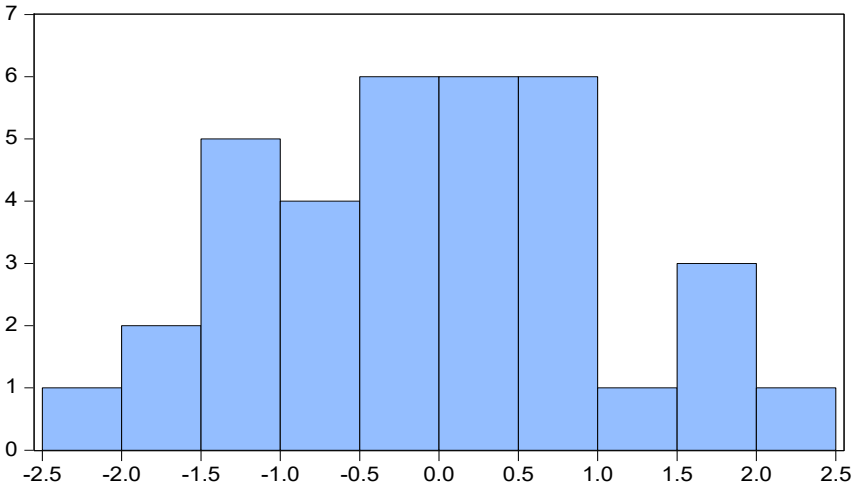
Table No.5 Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
autocorrelation	1.662473	Prob. F(2,32)	0.2056
Obs*R-squared	3.294361	Prob. Chi-Square(2)	0.1926
Scaled explained SS	2.393101	Prob. Chi-Square(2)	0.3022

Null hypothesis: there is no heteroscedasticity.

According to Table 5, Prob. Chi-square is greater than 5 % which means we cannot reject the null hypothesis. So, we accept the null hypothesis, which concludes that there is no problem with Heteroscedasticity.

3. Normality Test



Series: Residuals	
Sample 1 35	
Observations 35	
Mean	-1.19e-15
Median	-0.002922
Maximum	2.449922
Minimum	-2.223237
Std. Dev.	1.064391
Skewness	0.209820
Kurtosis	2.738025
Jarque-Bera	0.356895
Probability	0.836568

Null hypothesis: Residuals are normally distributed

Prob. Value is greater than 5 % which means we cannot reject the Null hypothesis. So, we accept the null hypothesis, which concludes that residuals are normally distributed.

V. CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to determine how international trade has influenced Nepal's economic growth. Furthermore, this work aimed to investigate the relationship between exports, imports, and the economic growth of Nepal. This research employs widely used econometric methodologies such as correlation and ordinary least-squares (OLS) regression using Nepal's data from 1988 to 2021. The results revealed that there is a significant impact of imports and exports on the economic growth of Nepal.

The findings of our research may have substantial ramifications for the development of macroeconomic and trade policies by national governments to achieve a long-run equilibrium between exports and imports. The study's findings stress the importance of acting swiftly and steadily to solve Nepal's foreign trade issues. Trade and industry policies, including export and import policies, should be carefully analyzed before being implemented to maintain a stable export and import balance over the long term. If it wants to spur industrialization and economic

expansion, the government must make export diversification a top priority. The government should also encourage industrial production and establish industries that can replace costly imports. If the government takes steps to increase imports of capital goods and boost manufacturing capacity, Nepal will be able to increase exports and decrease imports, which will reduce the country's large trade deficit.

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