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Effect of Import and Export on Gross Domestic Product of Nepal

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Abstract*: this study investigates specifically effect of import and export on GDP. Data were collected from period 1994/95 to 2017/18. Multiple regression approach was used defining import and export as independent variable and GDP as dependent variable. Furthermore, this study uses Natural logarithm of import (LNIMP), Natural logarithm of export (LNEX) and Natural logarithm of GDP (LNGDP) .The result shows that import has been positively significant with GDP of Nepal and export has also positively significant relationship with GDP of Nepal .Which concludes import and export both trigger the increase in gross domestic product of Nepal.*

Key words: Import, Export, Gross domestic product.

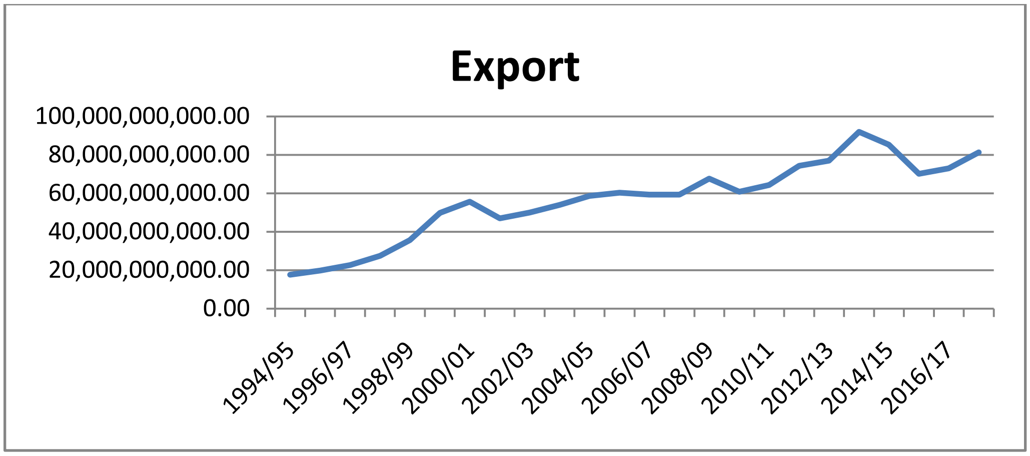
Introduction

Foreign trade refers to the exchange of capital, goods and services across the international borders. Usually in most of the countries it represents a significant share of GDP. Foreign trade involves two major activities i.e. import and export. Import means buying foreign goods and services by individual, business houses and government of the country. On the other hand export means goods and services which are produced in home country and are delivered to foreign market for consumption. Foreign trade is considered as an essential aspect for accelerating the growth of economic development. Most economies are associated to international trade to create employment, increase foreign exchange earnings, and raise the productivity of investment from less productive use to high productive use. Foreign trade promotes the redistribution of labor force and capital force to relatively more productive section of the economy and contributes to provide new opportunities for economic growth. Nepalese foreign trade performance has been poor in comparison to other economies. Several factors are responsible for this and Nepal geographical location or its landlockedness is one of the major causes for Nepal's weak production base. Nepal has to use port facility from India. In order to enhance the international trade Nepal has involved in various trade agreement in last two decades. Nepal has become a member or participated in regional and international trade agreements. Nepal has signed or ratified the South Asian Association for Regional Cooperation (SAARC) Agreement on a South Asian Free Trade Area (SAFTA). Under this trade agreement, the eight south Asian nations (Nepal, Bhutan, India, Bangladesh, Pakistan, Sri Lanka, Maldives, and Afghanistan) have pledged to cut down tariff on a product-by-product basis, and more than 4,000 items are sanctioned to preferential duty treatment in member countries. In April 2004, Nepal joined as the 147th member of the World Trade Organization (WTO). In February 2004, Nepal became a member of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) which includes Bangladesh, Bhutan, India, Burma, Sri Lanka, and Thailand. BIMSTEC attempts to establish a more comprehensive free-trade area through stronger and more substantial sector coverage of services and a free trade and competitive international regime. Nepal has signed bilateral trade treaties with more than fourteen countries, including the United States, United Kingdom, Yugoslavia, India, Russia, South Korea, North Korea, Egypt, Bangladesh, Sri Lanka, Bulgaria, China, Czech Republic, Pakistan, Romania, Mongolia, and Poland. The treaty Nepal signed with India in 1996 and amended in 2009 is its most important in terms of trade volume. The trade treaty puts Nepal in a unilateral duty-free trade regime with India, which accounted for more than 60 percent of Nepal’s total trade in FY 2016/17.

Nepal foreign trade with rest of the world

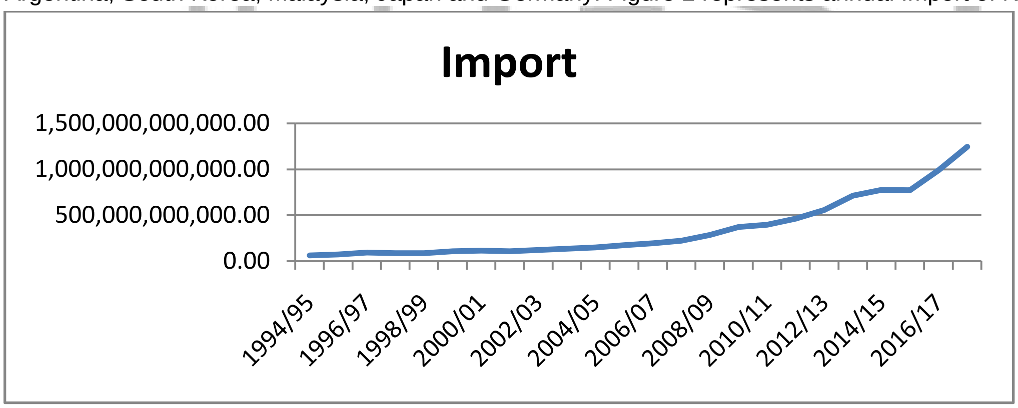
Export

Nepal's most valuable exported good is yarn made from synthetic staple fibers, carpets, textiles floor covering, tea, coffee, beverages, spirits, vinegar, fruit or vegetable juices, spices including nutmeg, synthetic yarn woven fabrics , knit or crochet clothing, accessories , food industry waste ,animal fodder etc. Nepal major trade partners are India, United States, Turkey, Bangladesh and Germany. Figure 1 below shows the Annual export of Nepal.



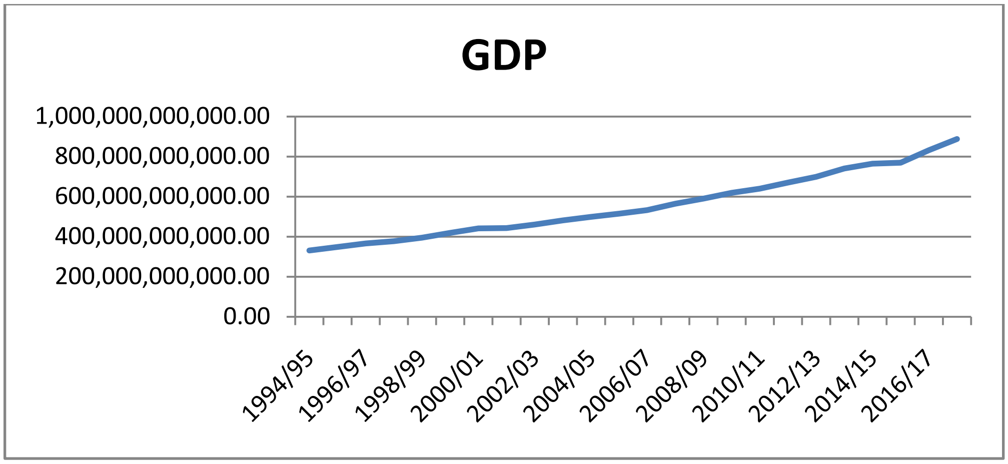
Import

Nepal mainly imports oil, gold, iron and steel, clothes, pharmaceutical products, cement, electronic appliances, food and vehicles. Nepal's main imports partner is India. Others include China, Indonesia, Argentina, South Korea, Malaysia, Japan and Germany. Figure 2 represents annual Import of Nepal.



Gross Domestic Product

GDP is the total market value or monetary value of all the finished goods and services produced within a country's territory in a specific time period. As a broad measure of overall domestic production, it functions as a comprehensive scorecard of the country's economic performance.



Literature review

(Bhattarai, 2012) Inspect the impact of international liberalization on the Indian economy, performing the Solow's model as a basis of analysis. Their result shows to the fact that international trade and openness of the economy has triggered the overall level of output, leading to a faster economic prosperity. (umo, 2007)

Umo (2007) examined that Nigeria's exports and imports constitute a substantial component of GDP and both exports and imports have grown rapidly over the last four decades. He furthered continued by saying that a good proportion of the import trade of Nigeria is on non-oil products such as foods, raw materials, capital goods etc. and the export of Nigeria is on primary items such as, crude oil, raw materials, staple foods and food stuffs. Despite the fact that, it has been said that foreign trade is against the developing nations, but it is critically vital for the survival of the Nigeria economy.

(zahoor, 2012) Examined the relationship between international trade and economic growth using the OLS technique in their study; their result showed an increase in import of raw materials, production, employment and output is boosted up as a result of foreign trade. They thus concluded that international trade plays a significant role to enrich the economic growth of a country.

(Azeez, 2014) Observed that international trade has a significant and positive impact on economic growth.Their result showed a positive relationship between imports, exports and openness on the economy.

(Abou-Stait, 2005)export is a catalyst, compulsory for the overall development of an economy. which increases the earnings of the country, thereby creating an avenue for growth by triggering the national income of the country. It also triggers the level of employment in the economy as higher demand for exports needs more production which in turn leads to employment generation. Exportation also helps a country to attain a favorable balance of trade and balance of payment position provided exports reasonably exceed imports.

(Hussaini, 2015) They tested the Export Led Growth Hypothesis for India with annual time series data from 1980 to 2013. Their result showed that variables were co-integrated and there is a bidirectional relationship between GDP and Export.

Nepalese literature review

(Upreti, 2012) Has examined the effect of trade liberalization on Nepalese international trade both in pre and post-liberalization periods using Philip Hanson Fully Modified Ordinary Least Square Co-integration Model. The main empirical outcome of his study is that there is no significant positive impact of trade liberalization on export, import and trade balance both in the pre-liberalization and post-liberalization period both in the long-run and short-run. The study also shows no positive impact of trade liberalization on economic growth and balance of payment.

Trade openness generally refers to export plus import divided by gross domestic product or trade to GDP ratio (EX-IM)/GDP. (Chaudhary, 2011) has studied the sensitivity of trade openness in Nepal using numerous aspects of trade openness which include sensitivity, vulnerability and harmonization and the impact on per capita income growth for the research period(1990/91 to 2010/11). Further, it shows that overall trade openness vulnerability of Nepal is low with the secondary and service sector being more open in comparison to the agriculture and energy sectors of Nepal. More ever, there is a strong performance of the openness growth rate for the review period, the average ratio of the openness growth and per capita income growth with nominal income, is negative which shows a low sensitivity of per capita income growth to the trade openness growth. Later, it showed that the productivity benefits from additional trade are higher for the trading partners of Nepal than themselves. He argued that Nepal has liberalized trade practices without introducing appropriate measures, internal policies and institutions.

Theoretical framework

The theoretical framework generally refers to the structure that holds or supports a theory of a research study. The theoretical framework introduces and describes the theory that explains the relationship between the dependent and independent variables. Since the general purpose of research is to develop theories about problems and questions, it is important that the theoretical framework be carefully developed and presented. In this research paper export and import are taken as independent variables and Gross Domestic Product as dependent variable

Data and Methodology

Data source

This study has taken annual data of Export, Import and Gross Domestic Product of Nepal from period 1994/95 to 2017/18. Data has been taken from Quarterly economic bulletin published by Nepal Rastra bank and economic survey published by government of Nepal. Export, import and gross domestic product are in Nepalese rupee.

Model

In this research paper, multiple linear regressions or multiple regressions are used. It is a statistical tool that uses several explanatory variables to predict the outcome of a response variable. The objective of multiple linear regressions is to model the linear relationship between the explanatory (independent) variables and response (dependent) variable. Multiple regressions model are the extension of ordinary least-squares (OLS) regression that involves more than one explanatory variable.

The Formula for Multiple Linear Regression Is

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \ldots\ldots + \beta_p x_{ip} + \epsilon$$

where,

$i = n$ observation

y_i = dependent variable

x_i = explanatory variables

β_0 = y-intercept (constant term)

β_p =slope coefficients for each explanatory variable

ϵ=the model's error term (also known as the residuals)

In this research model following function is specified

GDP = F (IM, EX) ……………………………………….1

To make equation linear, Natural logarithm of variables are taken which is stated as follows natural logarithm of GDP as lngdp, natural logarithm of import as lnim and natural logarithm of export as lnex .

$$lngdp = \beta o + \beta 1 lnim + \beta 2 lnex + \in \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

Where , *Lngdp* represents natural logarithm of GDP, *lnim* represents natural logarithm of import, *lnex* represents natural logarithm of export, βo is constant (intercept),β1 is coefficient of import ,β2 is coefficient of export and ϵ represent error term (residuals).

Result and discussion

Dependent variable: LNGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.254385	1.526478	4.097265	0.0006
LNEX	0.052060	0.019385	2.685630	0.0146
LNIM	0.098775	0.023175	4.262186	0.0004
LAGLNGDP	0.626128	0.092002	6.805559	0.0000

R-squared	0.998028	Mean dependent var	27.02672
Adjusted R-squared	0.997716	S.D. dependent var	0.278969
S.E. of regression	0.013332	Akaike info criterion	-5.640553
Sum squared resid	0.003377	Schwarz criterion	-5.443076
Log likelihood	68.86636	Hannan-Quinn criter.	-5.590888
F-statistic	3204.607	Durbin-Watson stat	1.568430
Prob(F-statistic)	0.000000		

LNGDP = 6.254385 + 0.098775 LNIM+ 0.052060 LNEX + ϵ

The above table result analysis gives adjusted R-square of 0.997716 which tells about how closely the data are fitted to the regression line or tells about the goodness of fit. which is 99.77% fitted. Further, the result shows positive and significant coefficient of independent variables i.e. 0.098775 coefficient of import and 0.052060 coefficient of export which tells that both variables move in same direction. 1 percent increase in export results to .052060 point increase in gross domestic product of Nepal. Similarly 1 percent increase in import results to 0.098775 point increase in Gross domestic product. Results are similar to Azees et al. (2014), Zahool et al. (2012) and Shreesh and Kishore (2012) which conclude that international trade play a vital role in enrichment of the economic growth and prosperity.

Diagnostic test

Diagnostic tests are carried out to evaluate the adequacy of the model specification.it includes three test which are as follows serial correlation, heteroscedasticity and normality test and the result of diagnostic test are in favor of the model which suggest that model selection is adequate.

Serial correction

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.605050	Prob. F(2,17)	0.5574
Obs*R-squared	1.528399	Prob. Chi-Square(2)	0.4657

Null hypothesis: there is no serial correlation

Prob. Chi square is greater than 5 % which means we cannot reject null hypothesis. so, we accept null hypothesis, which conclude that there is NO auto correlation.

Heteroskedasticity test

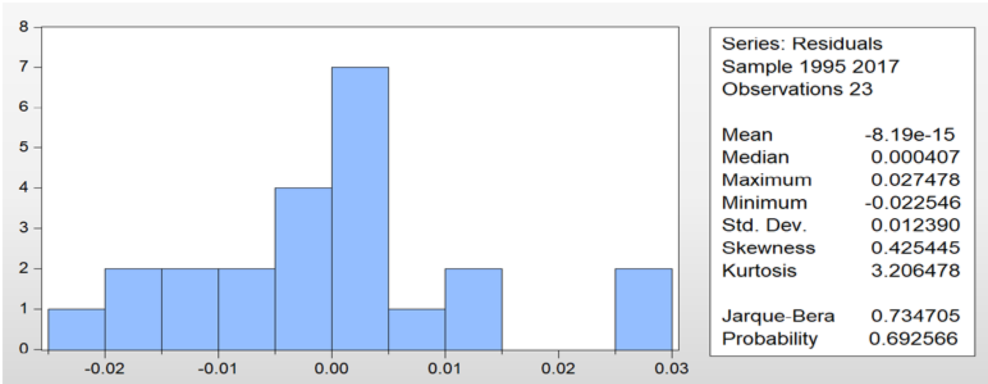
Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.489480	Prob. F(3,19)	0.0914
Obs*R-squared	6.489772	Prob. Chi-Square(3)	0.0901
Scaled explained SS	4.885968	Prob. Chi-Square(3)	0.1803

Null hypothesis: there is no heteroscedasticity

Prob. Chi square is greater than 5 % which means we cannot reject null hypothesis. So, we accept null hypothesis, which conclude that there is NO problem of Heteroscedasticity.

Normality test



Null hypothesis: Residuals are normally distributed
Prob. Value is greater than 5 % which means we cannot reject Null hypothesis. so, we accept null hypothesis, which conclude that residuals are normally distributed.

Conclusion

this study concludes that export and import both are positively significant in relation to the Gross Domestic Product of Nepal. Which implies that export and import or international trade plays a very vital role in enrichment of economic growth and overall development .the import over export has widening which has result to trade deficit there are several reasons for poor performance one of the major reason is geographical location i.e. landlockedness but the involvement of Nepal in regional and international trade agreement has played significant role in maintaining the relationship with other trade partners. So, In order to trigger the pace of economic development government should encourage more export and try to import less. Special economic zones (SEZ) should be encouraged to produce more. SEZ are those zones which get tax exemption and more liberal policies in comparison to other places. Liberal policies and tax exemption will encourage peoples to start their own business to support the export of the economy which will later contribute to the economic growth and development.

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