

# **Nepali International Trade Before and After the World Trade Organization**

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## ***Abstract***

*Nepal got the membership of the World Trade Organization through the negotiation process in 2004. The objective of Nepal in achieving the membership was to diversify its trade and to liberalize the trade regime. The paper attempts to evaluate whether Nepal achieved its objective as compared to the international trade regime before its accession to the WTO. The paper uses the secondary data retrieved from the World Bank and Nepal Rastra Bank. On the other hand, we have evaluated the trade diversification by using data from Nepal Rasta Bank. It was found that the objective of trade diversification was not found statistically significant, even after the accession to the WTO. Finally, the findings of the study can be translated to the trade policy to serve the national interest of trade balance in the backdrop of rocketing trade deficit of Nepal.*

**Keywords:** *Nepal, international trade, WTO*

**JEL Code:** *F13*

## **Introduction**

In the international trade and economic development, trade liberalization is a key to achieve higher efficiency (OECD, 2017). However, barriers, like tariff and the non-tariff, are the major determinants of the efficiency in the trade. Therefore, the World Trade Organization (WTO) was instituted on January 1, 1995 (WTO, 2015) to remove the non-tariff barriers and to encourage trade by reduction of the tariff. Therefore, the basic objective of all members of the WTO is to broaden the market access and to diversify their trade.

Nepal is become 147th member on 23 April 2003 (Pandey, Adhikari, & Wagle, 2014) through a "full working party negotiation" process (Adhikari, Dahal, & Pradhananga, 2008). It is a land-locked country between China and India. Its total international trade was Rs. 1,030 billion in 2016. In this period, Rs. 74.59 billion (7.24%) was export and Rs. 956.5 billion (92.86%) was import

(TEPC, 2017). The share of export in the GDP is quite small, which was just 3.1% in 2015/16, whereas the share of import was 34.4%, which were 7.3% and 27.2% respectively in 2007/08 (MoF, 2017). Remittance is the major foreign currency earning, which was Rs 665.1 billion in 2015/16 and it is significantly dependent on foreign aid for its economic development goals (Jull, 2006). Nepal is trading with its immediate neighbours as major trading partners, which jointly occupied 58.8% (NRB, 2017).

During 2009 to 2016, Nepal's major exports are dominated by agricultural products like Big Cardamom, Ginger, Lentils Woolen Shawls, juices, etc along with carpet and some iron products and its imports were - "Petroleum", "M.S. Billet", Gold, "Liquefied Petroleum Gas", Crude soybean oil, "Motorcycle", "Telephone", "Rice", "Medicines" and "Cement clinkers" (TEPC, 2017).

## **Objective**

The paper attempts to assess the Nepali international trade sector by comparing it before and after the accession to the WTO.

## **Methodology**

### **Data**

The data from 1965 to 2015 from the World Bank databank on an export and an import of "Goods and Services", value addition of agriculture, industry and service sectors, the Gross National Income (GNI) and the Exchange rate was accessed. To evaluate the diversification of the destination for Nepal's international trade, data from fiscal year 1994/95 to 2016/17 were used from the Nepal Rastra Bank, the central bank of Nepal ([https://nrb.org.np/red/publications/economic\\_bulletin/Quarterly Economic Bulletin--2017-04\\_\(Mid\\_April\)-new.pdf](https://nrb.org.np/red/publications/economic_bulletin/Quarterly_Economic_Bulletin--2017-04_(Mid_April)-new.pdf)).

### **Model specification**

To assess the difference between before and after accessions to the WTO Welch's t-test is used. The t-test is specified as below.

$$t = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

Where,  $\bar{X}_1$ ,  $S_1^2$  and  $N_1$  means sample mean, population variance and sample size of sample 1  
Subscript 1 and 2 represent sample.

Similarly, f-test is given as

$$F = \frac{\text{explained variance}}{\text{unexplained variance}}$$

In order to assess the trade diversification, a trend analysis was carried out for export and import with India and rest of the world.

### **Data Analysis**

The data was analyzed using t-test, F-test and the trend analysis.

## Results

The obtained results have been presented hereunder.

### T-test

To assess the difference between after accession to the WTO and before accession to the WTO, Welch's t-test was performed at 95% level of confidence interval. The table below presents the detail of the t-test result.

Table1: T-test results

Variables (X, Y)	t-value	Df	p-value	Mean	
				X	Y
A.TV, B.TV	5.35	12.01	$1.75 \times 10^{-05}$	6829.49	2585.08
A.AgVA, B.AgVA	6.02	11.62	$6.90 \times 10^{-05}$	4640.50	1861.19
A.SerVA, B.SerVA	6.95	12.07	$1.50 \times 10^{-06}$	6449.13	1775.76
A.IndVA, B.IndVA	6.44	12.24	$2.92 \times 10^{-07}$	2133.18	954.71
A.GNI, B.GNI	6.45	11.74	$3.53 \times 10^{-05}$	14652.42	4903.43
A.Ex, B.Ex	3.66	22.00	0.001	79.91	61.80
A.Export, B.Export	4.46	17.71	$3.11 \times 10^{-05}$	1674.53	1031.28
A.Import, B.Import	5.43	11.48	$1.78 \times 10^{-05}$	5154.96	1553.80

(Note: A: After the WTO and B.: Before the WTO)

The Welch's t-test results revealed that all variables were found significantly different between before accession to the WTO (1992 – 2003) and after accession to the WTO (2004-2015) since all p-values are highly significant.

## F-Test

To assess the variance before and after the WTO, F-test was implemented and the results are presented hereunder.

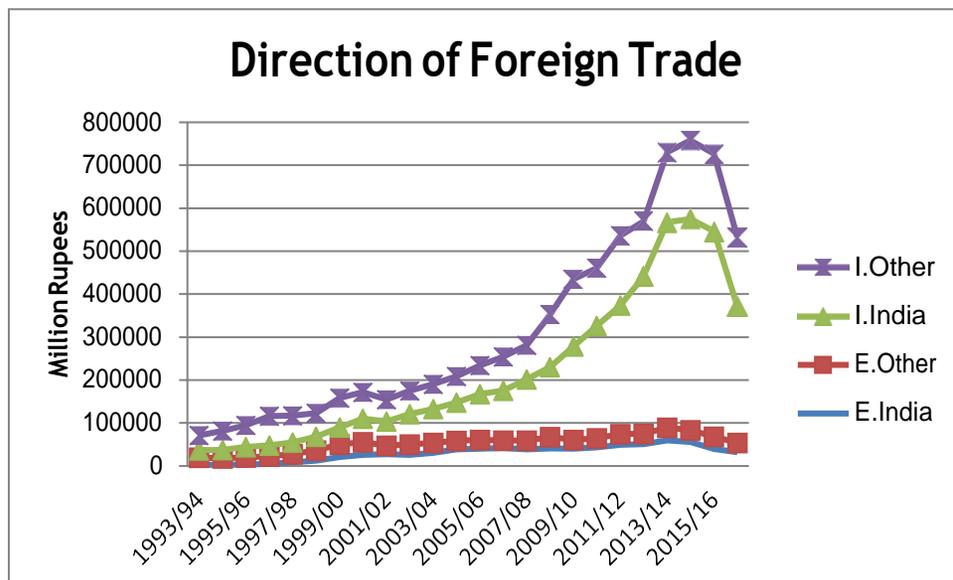
Variables (X, Y)	F-value	num df	denom df	p-value	Ration of variances
A.TV , B.TV	21.81	11	11	$1.38 \times 10^{-05}$	21.81
A.AgVA , B.AgVA	35.16	11	11	$1.17 \times 10^{-06}$	35.16
A.SerVA , B.SerVA	20.50	11	11	$1.89 \times 10^{-05}$	20.50
A.IndVA , B.IndVA	17.70	11	11	$3.96 \times 10^{-05}$	17.70
A.GNI , B.GNI	29.86	11	11	$2.74 \times 10^{-06}$	29.86
A.Ex , B.Ex	1.01	11	11	0.99	1.01
A.Export , B.Export	2.94	11	11	0.09	2.94
A.Import , B.Import	45.87	11	11	$2.87 \times 10^{-07}$	45.87

(Note: A.: After the WTO and B.: Before the WTO)

The result showed that except exchange rate and export, variance of all variables were found significantly different since p –values for all variables were highly significant.

## Trend Analysis

To evaluate the objective of market diversification, international trade data were plotted from 1994 to 2017.



The trend confirmed that export is increasing at a much slower rate as compared to import. Likewise, total trade was found to be growing every year except in 2015/16 when Nepal-India border was disturbed and flow of goods were restricted from India. Likewise, the growth rate of export and import with India and rest of the world was found almost similar.

Independent t-test		
	t-value	p-value
Growth in export with India	3.37	0.01
Growth in export with rest of the world	0.53	0.60
Growth in import with India	0.71	0.49
Growth in import with rest of the world	-0.40	0.70

The independent t-test of the growth rate in export and import with India and the rest of the world showed that only the export to India was found significantly different. Therefore, the result does not justify Nepal's objective of trade diversification by accessing to the WTO.

## **Conclusion**

The analysis of trade data allowed us to evaluate the performance of Nepali international trade before and after the accession to the WTO. To evaluate the objective of Nepal's accession to the WTO, independent t-test, f-test and trend analysis were carried out using before and after analysis. The independent t-test suggested that all parameters used for analysis were found significantly different before and after the accession to the WTO. It is indicating that after accession to the WTO, all trade is increasing. In the case of f-test, exchange rate and export were not found significantly different. Nevertheless, the trend analysis and independent t-test of the growth rate of export and import with India and the rest of the world rendered a different picture. The growth rate of export to India was found significantly increased after accession to the WTO, however, it is not a case for export and import with the rest of the world. It means the objective of trade diversification was not achieved by Nepal after accession to the WTO. As a result, even being a member of the WTO, Nepal is largely depending on India. Due to limited availability of data, trade with China could not be performed. China is incorporated with rest of the world.

Increased import itself is not a bad indicator for developing economies like Nepal. It should be qualified by disintegrating the data. If the import of raw materials increased and consumables are not large enough it is considered as a healthy trade. Disaggregation of import list suggested that the increasing imports are merely promoting productivity of the economy since most of the imports are for immediate consumptions. Therefore, increasing import is mounting pressure to the domestic industry and affecting their welfare.

Finally, either existing policy and structures are not instrumental to achieve the objective of the WTO membership or there are weaknesses on its implementation. Therefore, it is suggested that the further study is deemed necessary for trade policy evaluation of the country.

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