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Trends of Trade Deficit and its impact in Nepalese Economy with ARDL Approach: Some Suggestive Measures to Overcome

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Abstract

Nepal's ongoing trade imbalance has been a major obstacle to the country's economic stability and expansion. This paper employs the ARDL approach to analyze the trends and impacts on trade deficit of Nepalese economy. The ARDL analysis highlights the adverse impacts of the trade deficit on key economic indicators, underscoring the urgency of implementing effective policy measures. Nepal can endeavor to lower its trade deficit and achieve sustainable economic growth in order to combat poverty by implementing the recommended steps. The imported Foreign aid, foreign direct investment in Nepal is high and this also lead trade deficit. The trends of import are gradually increasing by 4.87 times and export increasing by 1.42 times.

Keywords: Foreign trade, Trade deficit, Export, Import, Unit Root Rest, ARDL Approach

Introduction

Background

Nepal, a landlocked country in South Asia, has experienced a widening trade deficit, primarily due to its heavy reliance on imports coupled with limited export capacity. This imbalance has raised concerns about its economic sustainability, foreign exchange reserves, and overall economic growth. A trade deficit is the condition when imports is much more than exports.

Trade Deficit = Total Imports- Total Exports (1)

A key macroeconomic indicator that measures a nation's economic performance is its trade imbalance. Country with high trade deficit feel poor and Nepal is not exception to it.

Many explanations for the trade deficit have been offered by economists. Monetary and fiscal policy of any country are responsible for trade deficit. Nepal is landing locked country and its economic dependency towards India and China has been increasing gradually. India and China are major trading partner of Nepal. Nepal fully depend on India for oil requirements. The external shocks, price of oil, general inflation in India and China direct affect Nepal. In case of oil prices, Nepalese currency may be depreciating. In twin deficit (fiscal and trade deficit)

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phenomenon, government of Nepal used to borrow from Nepal Rastra Bank to increase money supply in the country. Finally, this act leads to depreciation of rupees (Kumar, 2024).

Knowledge Gap

Through various policy measures, Nepal has been attempting to minimize its current account deficit, although it has been unsuccessful. The theoretical and practical contributions this paper makes to the corpus of current knowledge make it noteworthy. Although a lot of work has already been done on this subject, there is still need for more investigation. Policymakers will find this research paper useful in managing the trade imbalance and boosting exports. Researchers will also benefit from this work.

"Trends of Trade Deficit and its impact in Nepalese economy: Some suggestive measures to overcome" is the main research issues. The following research questions are intended to be addressed to meet statement mentioned above.

(i) What is the trend of trade deficit in Nepal during 2008/09 to 2018/19?
(ii) What is the impact of trade deficit on Nepal`s economy?

Objectives

This paper's main goal is to explore Nepal's trade imbalance. Following are the precise goals:

(i) To investigate Nepal's trade deficit trend from 2008–09 to 2018–19.
(ii) To examine the impact of trade deficit in Nepal’s economy.

Review of Literature

Theoretical and Empirical Review

Bakari & Tiba (2019) explained that exports have a negative impact on economic growth whereas imports have no effect due to positive externalities related to technical transfer bias, financial capacity, human expertise, large market size, and spillover effect.

Were (2015) analyzed trade effects on economic growth in 85 countries, finding that trade positively impacts developed and developing countries, but insignificantly affects least developed countries.

Sun and Heshmati (2010) highlighted that while international trade positively impacts China's economic growth, it also faces challenges such as low domestic absorptive capacity, deteriorating trade conditions, environmental impact, and regional development unevenness.

Mohammad (2010) studied Pakistan's trade deficit from 1975-2008 using Vector Error Correction and Johansen cointegration techniques. Factors like foreign direct investment, exchange rates, domestic consumption, and income significantly impacted the deficit.

Andersen and Babula (2009) identified international trade's impact on economic growth as access to foreign intermediates and technologies, knowledge dissemination, and market expansion for new product varieties.

Wagner (2007) asserts that increased export promotion enhances competition, productivity, and learning-by-doing, with trade benefits influenced by external environment, trade policy, and structure.

Gould & Ruffin (1996) found that trade balance and long-run economic growth are not related, with trade surpluses and deficits being less accurate predictors of economic development than each other. They suggested that a nation's ability to fund its product flow through investments can lead to a continuous trade imbalance.

This paper explores the relationship between trade balances and long-term economic growth, finding that trade imbalances have minimal impact on growth rates, reflecting the nation's overall economic growth.

Nepalese Context

Adhikari's 2018 study examined the relationship between Nepal's trade deficit, foreign currency reserve, and exchange rate using ordinary least squares estimate. The findings showed that a one percentage point depreciation of the rupee increased reserves by 0.82 percentage points and decreased the trade deficit by 0.75 percentage points.

Ghimire (2016) explains Nepal's deindustrialization due to domestic demand and free trade agreement. Nepalese hope for new constitution signaling political end, but government must focus on infrastructure enhancements like road access and energy.

Shrestha (2016) suggests Nepal should focus on high-value products to reduce transport costs and maintain high dependency on India, promoting trade diversification with the country.

Bhatta's 2013 study on Nepal's remittance and trade deficit patterns found a long-term positive unidirectional causal link between remittances and imports, deteriorating trade balances and causing merchandise imports, using cointegration techniques and VECM.

Silwal (2008) attributed external shocks to the trade deficit in Nepal, but the impact varied. Oil-price hikes were significant, but their magnitude did not significantly worsen the deficit. The average trade deficit in Nepal worsened

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alongside economic liberalization, with economic liberalization being a significant factor during 1985-91.

Prasad (2007) identifies Nepal's weak export capacity and imports of luxury goods as key factors contributing to its poor diversification in its export basket.

Preliminaries

Variables

Trade deficit is taken as a dependent variable whereas gross domestic product, foreign direct investment and trade volume are independent variables.

Trade Deficit

A trade imbalance occurs when a nation purchases more goods than it exports, affecting its trade balance and balance of payments.

Gross Domestic Product (GDP)

GDP, a yearly or quarterly publication, measures a country's economic activity by presenting the total monetary worth of all commodities and services produced within its borders.

$$GDP = C + I + G [X - M] \tag{2}$$

C = Consumption, I = Investment, G = Government spending, X = Export, and M = Import

GDP is the crucial metric for understanding the scale and health of an economy, though it should be considered alongside other indicators for a more comprehensive view of economic performance and societal well-being.

Foreign Direct Investment (FDI)

Foreign direct investment (FDI) refers to investments made by corporations or individuals in one country into commercial ventures in another. This usually entails gaining a sizable amount of influence or control over the overseas firm, sometimes by establishing business activities, including building branches or subsidiaries, or by purchasing a sizable investment in a foreign company. It has the crucial in the global economy by facilitating cross-border investments, enhancing economic growth, and promoting technological and knowledge transfer between countries.

Trade Volume (TV)

Trade Volume (TV) is the total quantity of goods and services traded between countries, indicating the level of international trade activity and economic integration. It is a vital measure of economic interaction and interdependence between countries, providing insights into global trade dynamics, economic performance, and the effects of trade policies and agreements.

Foreign Trade Balance (FTB)

FTB is a monthly, quarterly, or annual report of a country's exports and imports, a crucial part of its current account balance of payments.

FTB = Export – Import (3)

The Foreign Trade Balance is a country's trade dynamics, economic policies, and global economic interactions. It offers valuable insights for policymakers, businesses, and economists.

Methodology

Data Source and Time Period

The study utilizes secondary data from various sources including the Nepal Rastra Bank, Central Bureau of Statistics, Ministry of Finance Nepal Economic Survey, IMF, and World Bank databases. In this paper, time series data are used to explore the impact on economy covering the period from 2009-2019. After reviewing some literature, the necessary data suitable with objectives were collected.

Model Consideration

$$TD = f\ (GDP, FDI, TV) \qquad (4)$$

Where TD is the function of GDP, FDI, and TV

$$\text{Log}\ (TD) = \beta_o + \beta_1 GDP + \beta_2 FDI + \beta_3\ TV + \mu \qquad (5)$$

Estimation Technique

(i) Unit Root Test

(ii) Auto-Regressive Distributive Lag Approach.

Analysis and Discussion

This paper has contained two parts, first part consists about the trends of trade deficit from 2009 to 2019 and rest parts contain its impact on trade deficit on the Nepalese economy.

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Table 1 *Foreign Trade Balance of Nepal Values in Thousand Rupees*

FY	Export	% in Total	Import	% in total	E/I Ratio	Trade Deficit/TB
2008/09	68,596,852	19.1	291,000,944	80.9	0.24	61.8 - 3.56
2009/10	60,949,603	14	309345873.7	86	0.81	72 - 4.28
2010/11	64,562,444	14	309345873.7	86	0,16	72 - 4.85
2011/12	74,089,060	12.9	313302623.2	87.1	0,75	74.2 - 5.15
2012/13	77,350,709	11.4	318698190.8	88.6	0.13	77.2 - 5.69
2013/14	91,361,036	11.2	319417599.8	88.8	0.13	77.6 - 6.7
2014/15	86,640,462	9.9	324093758.4	90.1	0.11	80.2 - 5.93
2015/16	71,137,663	8.3	329849030.4	91.7	0.88	83.4 - 8.24
2016/17	73,125,351	6.9	334884893.5	93.1	0.85	83.4 - 9.6
2017/18	81,325,378	6.1	337762529.5	93.9	0.07	87.8 -11.93
2018/19	97,108,813	6.4	336683416	93.6	0.7	87.2 -11.24

Note. Source: Trade and Export Promotion Centre, 2019.

Nepal's import and export statistics from 2009 to 2019 is examined in Table 1 and Figure 1. Imports are growing faster than exports.

Exports were Rs. 68,596,582 in 2008/09 which increased to 97,108,813 in 2018/019.The import increased from 291,000,944 in 2008/09 which increased to 1,418,559,431 in 2018/19. Export increased by 1.42 times while import increased by 4.87 times. The general trends of import have increased 5 times than the export.

The ratio of export and import was 0.24 in 2008/09 and 0.7 in 2018/19. The ratio of export to import gradually increase with increase in the trade deficit. The ratio should be minimum to minimize the trade deficit.

Figure 1 *Trends of Export and Import*

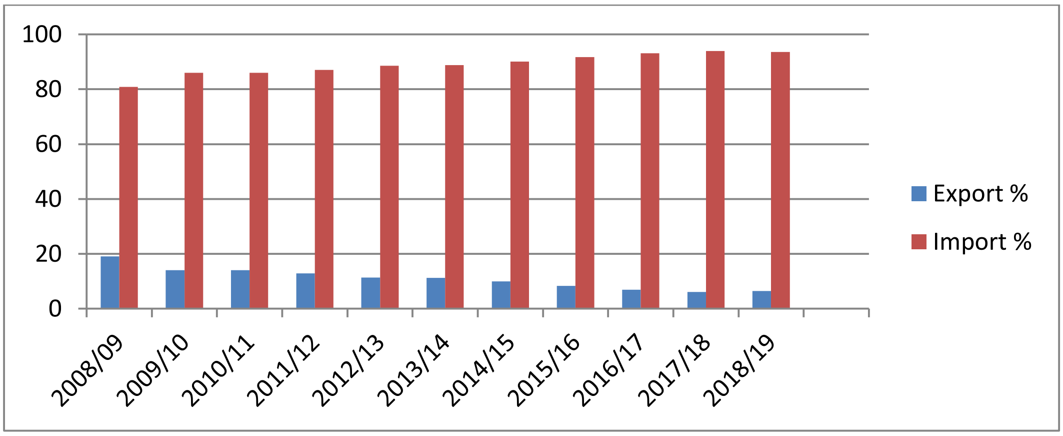

Figure 1 illustrates the percentage of exports and imports over the years 2008/09 to 2018/19. The red bars represent imports, consistently exceeding 80%, while the blue bars represent exports, remaining below 20%. This indicates a persistent trade imbalance with a high dependency on imports. The trend suggests minimal improvement in export performance over the years.

Remittance and Trade Deficit

Data on the gross domestic product (GDP), trade volume (TV), foreign direct investment (FDI), and trade deficit (TD) from 2009 to 2019 are shown in Table 2. It highlights fluctuations in FDI inflows, a rising trade deficit, and GDP growth, reflecting economic trends dynamics.

Table 2 *Trade Deficit, FDI, GDP and TV*

Year	TD	FDI	GDP	TV
2009	222404092	1819	1193000	359,597,796
2010	14656267	2852	1367000	136,555,473
2011	332973498	6437.1	1527000	462,098,386
2012	24072014	9195.4	1695000	172,250,134
2013	523856816	9082	1965000	678,558,23
2014	631415752	3195	21301500	814,137,84
2015	697940793	4383	2247427	871,221,717
2016	10008298	5921	2431716	122,283,624
2017	12825975	13503.9	2504641	159,076,677
2018	1163864869	17505	2776266	1,326,515,625
2019	1321450618	13064.8	2840120	1,515,668,244

Note. Source: Nepal Rastra Bank, 2019

In table 2, Trade deficit, FDI, GDP &TV was increased 6 times, 7.1 times, 2,13 times 4.21 times from 2009 to 2019 respectively. The increment in GDP is least among four indicators.

Note: Ln TD = Log value of trade deficit, Ln FDI= log value of foreign direct investment, Ln GDP= Log value of gross domestic product and Ln TD= Log value of trade volume (2009-2019).

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Table 3 *Log value of TD, FDI, GDP and TV*

Year	Ln TD	Ln FDI	Ln GDP	Ln TV
2009	19.2	8.48	13.99	19.7
2010	16.5	7.96	14.28	18.73
2011	21.9	8.77	14.23	19.95
2012	16.9	9.13	14.34	18.97
2013	20.08	9.12	14.49	20.34
2014	20.26	8.07	16.87	20.52
2015	20.36	8.39	4.63	20.59
2016	16.12	8.69	14.71	18.16
2017	16.37	9.51	14.77	18.88
2018	20.88	9.77	14.84	21
2019	21	9.48	14.86	21.14

Note. Source: Based on the table & Processed through E-view 9

Descriptive Analysis

Table 4 *Descriptive Statistics of Macro Variables*

	LNFDI	LNGDP	LNTD	LNTV
Mean	8.851818	14.72818	19.05182	19.75273
Median	8.770000	14.63000	20.08000	19.70000
Maximum	9.770000	16.87000	21.90000	21.14000
Minimum	7.960000	13.99000	16.12000	18.16000
Std. Dev.	0.600930	0.763568	2.154757	1.016239
Skewness	0.002924	2.153329	-0.307869	-0.052985
Kurtosis	1.802446	6.947402	1.464544	1.611969
Jarque-Bera	0.657327	15.64259	1.254348	0.888185
Probability	0.719885	0.000401	0.534099	0.641406
Sum	97.37000	162.0100	209.5700	217.2800
Sum Sq. Dev.	3.611164	5.830364	46.42976	10.32742
Observations	11	11	11	11

Note. Source: Based on table 3

Table 4 shows descriptive statistics of key macroeconomic variables: Foreign Direct Investment (LNFDI), Gross Domestic Product (LNGDP), Trade Deficit (LNTD), and Trade Volume (LNTV). The mean values suggest a relatively stable trend, with LNGDP being the highest among them. LNGDP exhibits positive skewness and high kurtosis, indicating a non-normal distribution, while the other variables have near-normal distributions. The Jarque-Bera test confirms that LNGDP significantly deviates from normality (p = 0.000401), whereas LNTD, LNTV, and LNFDI do not. Overall, the data highlight variability in macroeconomic trends over the observed period.

Table 5 Relationship *among FDI, GDP, Trade Deficit, Trade Volume*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDP	-0.286609	0.289736	-0.989207	0.3555
LNTD	-0.088709	0.158982	-0.557980	0.5942
LNTV	0.384904	0.354874	1.084623	0.3140
C	7.160201	5.103381	1.403031	0.2034

R-squared	0.199936	Mean dependent var	8.851818
Adjusted R-squared	-0.142949	S.D. dependent var	0.600930
S.E. of regression	0.642446	Akaike info criterion	2.228221
Sum squared resid	2.889162	Schwarz criterion	2.372910
Log likelihood	-8.255216	Hannan-Quinn criter.	2.137015
F-statistic	0.583100	Durbin-Watson stat	0.979713
Prob (F-statistic)	0.644802		

Note. Source: Based on table3 and Processed with the help of E-view software.

All macro variables have unit roots since these variables cannot reject null hypothesis. All these variables were directly kept in E-view 9 software and run to attain these results. The relationship among the variables seems to be poor since the value of R^2 is only 0.19 implies dependent variable only can explain by 19 percent from the side of independent variables.

Trends of Trade Deficit in Nepal

Historical Overview

Nepal's trade imbalance has been trending upward during the last few decades. Petroleum products, machinery, automobiles, and consumer goods are among the many items the nation imports, while its exports are mostly focused on a small number of industries, such as textiles, carpets, and agricultural products.

Key Factors Contributing Trade Imbalance

High Import Dependency. Nepal imports most of its fuel, machinery, and consumer goods.

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Limited Export Base. The country's exports are limited and lack diversification.

Economic Structure. A significant portion of the economy is informal, affecting export potential.

Recent Trends. In recent years, the trade deficit has widened further due to increased consumer demand, rising oil prices, and slow growth in export sectors. The COVID-19 pandemic exacerbated the situation by disrupting global supply chains and reducing demand for Nepalese exports.

Impact of Trade Deficit on the Nepalese Economy

Using the ARDL Approach

The ARDL analyze long-term and short-term impacts of the trade deficit. The ARDL approach is particularly useful for small sample sizes and variables with different integration orders.

Key Findings

GDP Growth

Trade deficit negatively impacts GDP growth in the long run by increasing external debt and reducing funds available for domestic investment.

Inflation

Higher imports contribute to inflationary pressures, especially when global commodity prices rise.

Foreign Exchange Reserves

Persistent trade deficits deplete foreign exchange reserves, increasing vulnerability to external shocks.

Public Debt

Financing trade deficits through borrowing leads to higher public debt, putting pressure on fiscal sustainability.

Suggestive Measures to Overcome Trade Deficit

Diversification of Exports

Promotion of High-Value Products. Encourage the production and export of high-value agricultural products, textiles, and handicrafts.

Market Expansion. Explore new international markets and strengthen trade relations with neighboring countries and beyond.

Enhancing Domestic Production

Substitute Imports. Promote industries that can substitute imports, such as agro-processing, pharmaceuticals, and light manufacturing.

Industrial Policy Reforms. Implement policies to support small and medium enterprises (SMEs) and improve the business environment.

Improving Trade Infrastructure

Logistics and Transport. Invest in improving transportation networks, warehouses, and border facilities to reduce trade costs.

Digital Trade Facilitation. Enhance digital infrastructure to streamline customs procedures and reduce trade barriers.

Strengthening Trade Agreements

Regional Integration. Leverage regional trade agreements like SAFTA (South Asian Free Trade Area) to enhance market access.

Bilateral Agreements. Negotiate favorable trade agreements with key trading partners.

Fiscal and Monetary Policies

Exchange Rate Management. Implement policies to maintain a stable and competitive exchange rate to boost exports.

Incentives for Exporters. Provide financial incentives, tax breaks, and subsidies to export-oriented industries.

Conclusion and Future Work

The stability and expansion of Nepal's economy are seriously threatened by its ongoing trade imbalance. Addressing this issue requires a multifaceted approach that includes diversifying exports, enhancing domestic production, improving trade infrastructure, and leveraging trade agreements. Future study is needed to evaluate more causes that impact trade deficit.

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