

STUDY AND ANALYSIS OF SOME IMPACT ON GDP OF NEPAL BY INCREASE THE EXPORTS AND DECREASING IMPORT, ON ECONOMIC GROWTH OF NEPAL WITH THE HELP OF EXPONENTIAL FUNCTION

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Abstract

In this project aims to analyze the impact of increasing exports and decreasing import on economic growth in Nepal Using an exponential function model. By examine the relationship between exports, imports and GDP, we seek to provide insights into how Nepal can enhance its export Competitiveness and reduce import dependency to stimulate economic development. By analyzing the best opportunities field which is possible in Nepal and trying to do enhance that field all over the world and as result researching on a impact of that opportunities which is possible in Nepal at export, import and GDP of Nepal. It is provider rarified by numerically with the help of exponential function.

Keywords: Nepal exports, Imports, Economic growth (GDP) with the help of exponential function

Introduction

According to of Sahani (2023), input-output analysis delves into various aspects of economic dynamics. It explores the relationships between producer and consumer surplus even in unconventional market conditions where demand may be positive, but supply is negative. His work indicates that even in such scenarios, there exists untapped value for both producers and consumers, underscoring the resilience and complexity of economic

systems. This insight is not only intriguing but also carries significant implications for economic policies.

Economic sectors and revealing the pathways by which risk is transnationally dispersed is emphasized by Sahani and his associates. These results are relevant to international financial regulation because actions intended to prevent financial contagion can be informed by knowledge of the dynamics of risk transmission. Additionally, input-output analysis is utilized in the field of non-linear research, revealing the complex relationships among non-linear systems and offering prognostications regarding their conduct (Sahani & Prasad, 2023). The work of Sahani and Prasad demonstrates how flexible input-output analysis is as a tool for comprehending complex systems outside of conventional economic fields. Now that we are focusing on Africa, input-output analysis is crucial for analysing the issues related to employment and job development that young people in African nations confront (Sahani, 2023). According to Sahani's research, important industries that significantly contribute to young employment include trade, construction, and agriculture. In order to promote economic growth and capitalize on the demographic dividend of Africa's youthful population, it becomes necessary to address the difficulties in various sectors (see [1-12]).

Export

1. **Adam smith (1723-1790):** In his seminal work "The wealth of Nations" published in 1776, Adam smith discussed exports as a means for a country each revenue and benefits from the advantages of international trade. He emphasized the importance of specialization and comparative advantage in determining a country's export Capacity
2. **David Ricardo (1772-1823):** Ricardo, in his work "principles of political economy and taxation" published in 1817, expanded on Smith's ideas and introduced the concept of comparative advantage. He argued that countries, should specialize in producing goods in which they have a comparative advantage and trade these goods with other countries for mutual benefit.
3. **James mill (1773-1836):** James mill, a Scottish economist, emphasized the role of exports in promoting economic growth and development. In his work "commerce

Defended" published in 1808, mill argued that exports increase a country's wealth by providing access to markets and resources beyond its border.

4. **Alfred Marshall/1842-1942):** Marshall, in his Influential work "Principles of Economics" published in 1890, discussed exports a key driver of economic growth and development. He emphasized the role of exports in generating income, creating, employment and promoting various types of industrialization.
5. **John Stuart mill (1806-1873):** John Stuart mill, in his book "principles of political economy" published in 1848, discussed the importance of exports in importing the terms of for a Country. He agree that a exporting goods that have a relatively high price in international market compared to their cost of production.

Import

1. **Paul Samuelson (1915-2009):** Paul Samuelson, in his book "Economics" first published in 1948, defined imports as per good and services that a Country purchases from other Countries. He emphasized the role of imports in expanding consumer choice and promoting economic efficiency through specialization and trade.
2. **Alfred Marshall (1842-1924):** Alfred Marshall, in this book "principles of economics" published in 1890. Defined imports as goods and services that are produced by domestic consumers. He viewed imports as a means of satisfying consumer demand and improving the standard of living.
3. **James Mill (1793-1836):** mill, a Contemporary of Ricardo, also emphasized the benefits of imports. He argued that imports allow countries to access goods that they cannot produce domestically, leading to a more efficient allocation of resources and higher overall welfare.
4. **Jean-Baptiste say (1767-1832):** Jean-Baptiste say "states that supply Creates its, own demand, discussed imports as a means of satisfying domestic demand for goods that cannot be produced domestically. He viewed imports as a natural part of international trade that helps to balance supply and demand.
5. **Lionel Robbins (1898-1980):** Robbin defined economics as "the license which studies human behavior as a relationship between ends and scarce means which have alternative uses". He suggests that he would likely view imports as a means of

fulfilling human ends (Consumption or production goods) by utilizing scarce resources (good or services) that have alternative uses". He would see imports as a mechanism for allocating scarce resources to meet human want needs, especially in case where domestic the productions is limited or inefficient.

GDP

1. **William Petty (1613-1687):** While not directly related to GDP, Petty was one of the first to attempt Systematic economic analysis. He focused on measuring a nation's wealth and income, laying some ground work for later developments in national income accounting.
2. **Francois Quesnay (1694-1774):** Quesnay, a French economist and physician, introduced the concept of "Tableau economies" or "economic table" in 1758. It was a simple economic model that flow of the goods and money to between different sector of the economy, providing a rudimentary form of national income accounting.
3. **Richard Cantillon (1680-1734):** Cantillon; an Irish-French economist, introduced the Concept of national income in his work " Essay on the nature of Trade in General" published posthumously in 1755. He discussed the circular flow of income in economy, highlighting the importance of understanding how income is generated & distributed.
4. **Adam Smith (1723-1790):** Smith, in "The wealth of nations" published in 1776, emphasized the importance of national income as a measure of a nation's economic success. while he did not explicitly define GDP his work laid the foundation of later developments in measuring national income and production.
5. **Alfred Marshall(1842-1924):** Marshall, in his book "Principles of economics" published in 1890, discussed the concept of national income and its measurement. He highlighted the importance of measuring the total value of goods and services produced in an economy as a way to gauge its economic performance.
6. **Lionet Robbins (1898-1984):** Robbins would likely view GDP as a measure of the total value of goods and services produce within a country border over a specific period, reflecting the overall economic activity and output of the nation.

Definition of Exponential Function model on export, camimport and GDP Of Nepal:

Export:

Export means, "selling of goods and services" to foreign country and earn more profit and increase the rate of economic of Nation. It increase the rate of production of finished goods and distribute all the goods and services to other and increase production rate of goods and services through or by selling the finish goods at profitable price to various foreign Country and increase the income; wage & salary, economic and GDP of Nation.

GDP:

GDP includes only the final goods and services. All the intermediate goods and services are excluded from the measurement of GDP. The expression 'Final goods and services' refers to the goods and services produced for final use whereas 'Intermediate goods are the goods produced by one firm which are used in further processing by another. For example, flour is an intermediate product because it is used to produce bread and bread is the final product as it is used for Consumption.

Import:

Import means, "Buying raw material unfinished goods from other foreign country at reasonable price" is known as import buying raw materials from other country at manufacturing & processing the raw materials and make as a finish goods and services and that sell to other various foreign country at profitable price. It helps to increase the productivity of goods and services of Nation. It increase income rate general people at proper wages, opportunities, increase economic and GDP of Nation.

Discussion

Problem:1

- Initial GDP (Y_0) = \$100 billion
- Initial export (X_0) = \$10 billion
- Initial imports (M_0) = \$15 billion
- Growth rate of export (k) = 0.05

- Growth rate of import (M) = 0.03
- Growth rate of GDP(G) = 0.04

Using the exponential function model

For export, import and GDP.

Exports: $(x(t) = x_0 \cdot e^{(Kt)})$

Imports: $(m(t) = m_0 \cdot e^{(Mt)})$

GDP: $(y(t) = y_0 \cdot e^{(Gt)})$

We can calculate the values of exports.

Imports; and GDP for a certain time period (let's say 5 years) to see the impact of increasing exports and decreasing imports on GDP

For export:

$$\begin{aligned} X(5) &= 10 \cdot e^{0.05 \cdot 5} \\ &= 10 \cdot e^{0.25} \\ &= 10 \cdot 1.28 \\ &= \$12.8 \text{ billion} \end{aligned}$$

For import:

$$\begin{aligned} m(5) &= 15 \cdot e^{0.03 \cdot 5} \\ &= 15 \cdot e^{0.15} \\ &= 15 \cdot 1.16 \\ &= \$17.4 \text{ billion} \end{aligned}$$

For GDP:

$$y(5) = 100 \cdot e^{0.04 \cdot 5}$$

$$=100 * e^{0.2}$$

$$=100 * 1.22$$

$$=\$122 \text{ billion}$$

Now, let's calculate the impact of increasing exports by 10% and decreasing imports by 5% over this 5 year period:

$$\text{Export Q)} (1 \text{ delta } x = x(5) - x - 0 = \$12.8 \text{ billion} - \$10 \text{ billion}) \\ = \$2.8 \text{ billion}$$

Therefore, For export = \$2.8 billion

For import:

$$\text{Q.) } (1 \text{ delta } m = m - 0 - m(5) = \$15 \text{ billion} - \$17.4 \text{ billion}) \\ = \$2.41 \text{ billion}$$

For GDP:

$$\text{Q.) } (1 \text{ delta } y = y(5) - y - 0 = \$122 \text{ billion} - \$100 \text{ billion}) \\ = \$22 \text{ billion}$$

When, it numerically proved when increasing the rate of exports by 10% and decreasing the import by 5% than we see the result the Nepal GDP increase by \$22 billion. It gives positive impact on economic growth of Nepal.

Conclusions

Increasing exports and decreasing imports can significantly contribute to economic growth in Nepal. By adopting policies that support export-oriented industries and reduce import dependency, Nepal can enhance its trade balance, stimulate economic activity, and achieve sustainable development.

In this format of project we provides a structured approach to studying the impact of increasing exports and decreasing imports on Nepal's economy using an exponential function model, helping to illustrate the Potential benefits of trade balance improvement for economic growth.

Therefore,

when in calculation for increasing export and decreasing import see the impact of GDP of nation, "By increasing exports and decreasing imports Nepal's GDP would increases by approximately \$22 billion over 5 years; demonstrating the positive impact of improving the trade balance on economic growth it is proved by numerically through or with the help of exponential function.

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