



IMPACT OF TRADE LIBERALIZATION ON BALANCE OF PAYMENTS IN INDIA

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ABSTRACT

The present study attempts to examine the impact of trade liberalization on balance of payments (BOP) in India by taking into account the time series data for the period 1991 to 2015. By using Augmented Dickey Fuller test, Cointegration and Regression analysis (where data is not stationary), the study found no significant impact of trade openness on balance of payments (BOP) in the post reform period which maybe because of many internal and external factors.

KEYWORDS: Trade Liberalization, Balance of Payments, Exports, Imports, Regression Analysis

INTRODUCTION

Trade liberalization refers to the removal or reduction of barriers (tariff and non-tariff) which impede exchange of goods and services between countries. Proponents of trade openness argue that opening a nation's economy for trade fosters international competition which leads to efficient utilization of resources as they can focus their attention on producing those goods and services in which they have a comparative advantage. They further posit that it leads to overall development as both - consumers and producers benefit, the former from the wide array of goods and services available at competitive prices from which they can choose and the latter enjoy economies of scale.

Due to this interdependence between various countries of the world it becomes imperative to maintain a record of all the transactions taking place. Balance of Payments (BOP) can be defined as an organized and structured record of the difference in the value of goods and services exported and goods and services imported. Its components are current account which records imports and exports of tangible and intangible items along with

unilateral transfers and capital account which registers all transactions between residents of a country and rest of the world which leads to a change in assets and liabilities position of the residents of a country. It includes foreign investments, loans and capital transactions.

On the eve of independence from British rule, India which was once referred to as the Golden Bird had been transformed into a country with poor infrastructure and industry with majority of its population living in poverty. Mindful of how India lost its sovereignty, leaders of independent India were cautious while formulating policies. They adopted a combination of capitalism and socialist ideology. Private investment and ownership were encouraged but at the same time protection was awarded to certain sectors and a strong bureaucracy was put in place. Heavy restrictions were imposed in the form of taxes, high prices and licenses to control and regulate the economy.

Eventually, Indian economy began facing problems due to a multitude of internal and external factors which led to it abandoning its inward looking



development strategy and adopting a more open one in its place. The domestic issues which led to a shift in policy were a huge fiscal deficit due to large amount of subsidies and decrease in foreign aid, serious problems in its balance of payments because of rising imports, inflation, stagnant industrial production, loss making public enterprises and political instability. The external factors were disintegration of the Union of Soviet Socialist Republics (USSR) who was the largest trading partner, Gulf War in January 1991 which not only caused a hike in the price of oil but also stopped the flow of remittances, fall in the credit rating of the country by the international agencies which subsequently led to a flight of deposits of non-resident Indians (NRIs). All these issues combined put India in a dire situation. The default on external payments was prevented by borrowing from International Monetary Fund (IMF), mortgaging gold to the Bank of England and imposing emergency restrictions on imports.

This was the time when the major economic reforms of 1991 were taken which emphasized liberalization, privatization and globalization and are generally referred to as the LPG policies. Both internal and external restrictions were removed, thereby, making the environment investor friendly. Fiscal reforms were undertaken with the aim to reduce fiscal deficit and public debt, improve tax structure (by reducing direct and direct taxes, decreasing the prohibitively high custom duties and introducing service tax) and curbing wasteful government expenditure. Monetary or financial sector reforms led to deregulation of interest rates, however a floor and ceiling rate were set, technological up gradation and private players were encouraged to enter the banking sector. Various measures were taken to reform the capital market. Exchange rate regime was liberalized with rupee being fully convertible on current account and partially on capital account.

India has come a long way since then and is moving rapidly on the path of economic development. Measures are being taken continuously to make its integration even smoother with the world market and at the same time make it an attractive destination for foreign investment. Therefore, against this backdrop we have made an attempt to study the effect of the various steps taken for trade liberalization since 1991 on the balance of payments in India.

REVIEW OF LITERATURE

Overtime, many countries of the world have adopted liberal trade policies either because of globalisation or the aid coming to their nation is conditioned upon it so it becomes imperative to probe the

effect of adoption and implementation of such policies on the balance of payments.

UNCTAD (1999) by employing static panel data techniques and Sachs-Warner openness index to measure trade liberalization for sixteen developing countries from 1970 to 1995 found that removal or relaxation of tariff and non-tariff barriers to trade deteriorated trade balance by 2.7 percentage points of gross domestic product (GDP).

Santos-Paulino (2002) conducted a dynamic panel data analysis for 22 developing countries from Africa, Latin America, East and South Asia to study the effect of trade openness on trade balance and current account of balance of payments. The results revealed that the effects were not same for all countries. But, on an average trade liberalization had an adverse impact on the economies of all the countries studied.

Lopez (2003) examined data for the time period 1980 to 2000 with special emphasis on 1985, 1986 and 1994 through ordinary least squares, structural stability test, rolling regressions, Autoregressive Distributive Lag (ARDL) model and Error Correction Mechanism (ECM). His study revealed that the negative effect of the first wave of reforms which were implemented due to General Agreement on Tariffs and Trade (GATT) was because of both internal and external factors. Further, the effect of North American Free Trade Agreement (NAFTA) was inconclusive however, it is indicative of negative effect till 1994 to 1995 thereafter, there is a positive impact.

Parikh (2004) used panel data of 42 developing countries and through application of various econometric techniques found that though imports increased initially and exports caught up with them eventually, they were not enough leading to the trade balance being in the red. He concluded that though trade liberalization spurred growth in certain cases, it had a detrimental influence on trade balance.

Lopez and Thirlwall (2005) studied data pertaining to seventeen countries of Latin America and found that trade liberalization did improve growth rates of the countries under study but the trade balance condition declined with the exception of Venezuela and Chile whose growth in output was coupled with a healthy trade balance.

Wu and Zeng (2008) analysed data on imports, exports and trade balance for 39 developing countries for the duration of 1974 to 2004 and their analysis revealed that the results were varying – some countries experienced a negative effect while others had a positive impact on their trade balance due to the implementation of trade openness policies.

Allaro (2012) studied the influence of trade liberalization on trade balance in Ethiopia through application of export equation given by Santos-Paulino and Thirlwall, Augmented Dickey Fuller Unit Root Test and Johansen Cointegration test on data from 1974 to 2009. The study found that the trade balance had worsened after the implementation of aforementioned policy as exports were still not up to the desired level, even though the impact was significant and positive.

Amini et. al. (2012) analyzed time series data for the time period 1961 to 2006 by applying Auto Regressive Distributive Lags (ARDL) and Error Correction Mechanism (ECM) to examine the impact of trade liberalization on current account balance of payments and economic growth in Iran. Their study revealed that there existed a positive and significant relation between trade openness and growth of the economy in both short and long run. However, its effect on current account balance of payments was found to be insignificant.

Yasmin (2012) subjected data from 1970-2008 to unit root test and Johansen Cointegration to test the impact of trade liberalization, gross domestic product (GDP) and real exchange rate on trade balance of Pakistan for both short and long period. The study revealed that trade balance had a significant positive relation with trade openness and real exchange rate in the long run, however, it was negative with gross domestic product (GDP) from 1970 to 2008.

Qayed (2013) applied time series econometric techniques – Ordinary Least Square (OLS) and Error Correction Mechanism (ECM) to data for the time period 1981 to 2012 and found that trade liberalization had an adverse effect on balance of payments (BOP) of Ethiopia.

Kassim (2014) examined data for 20 Sub-Saharan African countries for the time period 1981 to 2010 through pooled mean group estimator and dynamic fixed effects estimator and found that trade liberalisation had a deleterious effect on the trade balances of the countries considered. In fact, the negative trade-off between trade balance and output GDP growth had worsened after the adoption of these policies.

Zakaria (2014) investigated time series data for the period 1981-82 to 2007-08 for Pakistan by using Generalized Method of Moments (GMM). His study revealed that trade liberalization had a more significant impact on imports compared to exports. The terms of trade had a significant effect on both imports and exports, however, it was detrimental in the case of latter. Similarly, real exchange rate, domestic and foreign incomes as well as foreign exchange market alterations had effects

consistent with earlier theoretically and empirically proven results. Consequently, it was concluded that trade balance in the country has deteriorated with the adoption of an open trade regime.

Therefore, though removal of trade barriers has aided in the growth of certain countries, but mostly it has had an adverse impact on trade balance of developing nations as exports have not been able to match the pace of increase in imports. No consensus has been found among various studies regarding the impact of trade liberalization on balance of payments (BOP) so, this study has been chosen. Balance of payments (BOP) of any country is a treasure trove of information because it aids the government in formulation of monetary and fiscal policies and also acts as an indicator of economic health of the nation.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

- 1) To understand the nature of trade openness which is measured as total of imports and exports as percentage of gross domestic product (GDP).
- 2) To analyse the balance of payment (BOP) time series in the post reform period.
- 3) To study the relationship between trade liberalization and balance of payments (BOP) after the economic reforms implemented in 1991.

DATA AND METHODOLOGY

Time series data on gross domestic product (GDP), exports, imports and balance of payments (BOP) for the time period 1991 to 2015 was taken from World Bank and RBI Handbook of Statistics on Indian Economy. As a measure of trade openness we have taken the sum of imports and exports as percentage of gross domestic product (GDP). To analyse the nature of time series involving different variables we performed Augmented Dickey Fuller test. To test for cointegration we used regression and then checked the residuals for stationarity by using Augmented Dickey Fuller (ADF) test. Where cointegration could not be applied because of the stationarity of balance of payments (BOP) data we applied regression on balance of payments (BOP) data and the sum of imports and exports as percentage of gross domestic product (GDP). We have used software packages SPSS (Statistical Package for Social Sciences) and STATA (Statistics and Data) to process the data.

RESULTS AND INTERPRETATION

To understand the relationship between trade openness and balance of payments (BOP) we need to analyse the nature of the time series involving exports,

imports, gross domestic product (GDP) and balance of payments (BOP). Here, we have taken trade openness as sum of imports and exports as percentage of gross

domestic product (GDP). We have taken this as a measure for trade liberalization.

First, we check for stationarity by Augmented Dickey Fuller Unit Root Test.

TEST FOR EXPORTS AND IMPORTS AS PERCENTAGE OF GDP

Table 1: Time Series for Exports as Percentage of Gross Domestic Product (GDP)

Augmented Dickey-Fuller test for unit root Number of obs = 23

Test Statistic	Z(t) has t-distribution		
	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-2.528	-1.725	-1.325

p value for Z(t) = 0.1622

Since, p-value is more than 0.10 (that is, 10% significant level) we can conclude that the series is not stationary.

Table 2: Time Series for Imports as Percentage of Gross Domestic Product (GDP)

Augmented Dickey-Fuller test for unit root Number of obs = 23

Test Statistic	Z(t) has t-distribution		
	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-2.528	-1.725	-1.325

p-value for Z(t) = 0.1557

P-value of 0.1557 suggests that the time series is not stationary.

Similarly, we apply Augmented Dickey Fuller (ADF) test on sum of imports and exports as percentage

of gross domestic product (GDP). We do this in order to check for stationarity in the time series representing overall trade openness.

Table 3: Time Series for Sum of Imports and Exports as Percentage of GDP

Augmented Dickey-Fuller test for unit root		Number of obs = 23		
Test Statistic	Z(t) has t-distribution			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z(t)	-1.062	-2.528	-1.725	-1.325

p-value for Z(t) = 0.1504

Again, the series is non-stationary, since the p-value is 0.1504. All of the above analysis suggests that the mean and variance of time series involving imports and exports are not constant for the post reform period. This suggests that there has been a fundamental change in

the trade openness of the economy. The data suggests that trade openness has increased substantially.

In order to gauge the stationarity of balance of payments (BOP) in the post reform period we apply Augmented Dickey Fuller (ADF) test on the balance of payments (BOP) time series.

Table 4: Time Series for Balance of Payments (BOP)

Augmented Dickey-Fuller test for unit root		Number of obs = 23		
Test Statistic	Z(t) has t-distribution			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z(t)	-3.048	-2.528	-1.725	-1.325

p-value for Z(t) = 0.0032

Since, the p-value is 0.0032 the series is stationary.

Cointegration Test:-

In order to see if there is a long run equilibrium relationship between the post reform period gross

domestic product (GDP) and the quantum of exports and imports we test for cointegration. First, we do this for exports.

Table 5: Cointegration between Post Reform Gross Domestic Product (GDP) and Exports

Augmented Dickey-Fuller test for unit root Number of obs = 23

Test Statistic	Z(t) has t-distribution		
	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-2.528	-1.725	-1.325

p-value for Z(t) = 0.0465

To check for cointegration we apply the Augmented Dickey Fuller (ADF) test on residuals obtained after regression of gross domestic product (GDP) and exports. Since, the Augmented Dickey Fuller (ADF) test shows that the residuals are stationary this implies that

there is a long run equilibrium and non-spurious relationship between gross domestic product (GDP) and exports. By performing a similar analysis involving gross domestic product (GDP) and imports we obtain similar results.

Table 6: Cointegration between Post Reform Gross Domestic Product (GDP) and Imports

Augmented Dickey-Fuller test for unit root Number of obs = 23

Test Statistic	Z(t) has t-distribution		
	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-2.528	-1.725	-1.325

p-value for Z(t) = 0.0687

This shows that there is a long run non spurious equilibrium relation between gross domestic product (GDP) and both imports and exports. From this analysis, we can conclude that the post reform period gross domestic product (GDP) increase and the increase in exports and imports have moved in lockstep and the openness in trade following liberalization has been fuelled by gross domestic product (GDP) growth.

BALANCE OF PAYMENTS (BOP) AND TRADE OPENNESS

Since, balance of payments (BOP) is a stationary time series we cannot apply cointegration test to analyse the relationship between balance of payments (BOP) and trade openness, instead, we use linear regression.

Table 7: Linear Regression between Balance of Payments (BOP) and Trade Openness

Model		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.543	9.229		1.034	.312
	Trade Openness	.256	.397	.133	.645	.525

a. Dependent Variable: Balance of Payment

Here, the coefficient for trade openness is not significant as the p-value is 0.525. This suggests that trade openness has not had a significant impact on the balance of payments (BOP). This may be due to the continuing dependency of the Indian economy on imports of petroleum, oil and lubricants (POL) which has regularly led to the current account deficit being in the red. Since, removal of trade barriers and the subsequent growth could not possibly have reduced demand for energy and actually has increased it substantially, the continuing weakness of the balance of payments (BOP) is not surprising. Therefore our results are consistent with the study conducted by Amini et. al. in 2012 for Iran.

CONCLUSION

Since 1991, India has been taking measures to systematically open its economy even more for trade with the world. It has removed various tariff and non-tariff barriers to trade which have improved its integration with the world market as well as assisted in achieving higher growth rates. Our study reveals that the impact of trade openness policies on balance of payments is uncertain for India. Though the Central Bank has accumulated a large amount of foreign exchange reserves overtime to prevent any crisis, the balance of payments (BOP) still remains a matter of concern because India has still not attained self-sufficiency to invalidate the need to import necessities, also the exports from manufacturing sector have not reached the desired level. Therefore, the government should focus on improving trade competitiveness to enjoy the full fruits of trade liberalization.

REFERENCES

- Allaro, HB. (2012). "The Impact of Trade Liberalization on the Ethiopia's Trade Balance", *American Journal of Economics*, 2 (5).
- Amini,YS, Qushchi,AH, Ahranjani, LZ and Amini, NS. (2012). "The Effect of Trade Liberalization on Balance of Payment and Economic Growth in Iran", *Journal of Basic and Applied Economic Research*.
- Black, J, Hashimzade, N and M, Gareth. (2009). *Oxford Dictionary of Economics*, Third Edition.
- Gujarati, D, Porter, D and Gunasekar, S. (2011). *Basic Econometrics*, Fifth Edition.
- Kapila, U. (2015). *Indian Economy Performance and policies*, Sixteenth Edition.
- Kassim, L. (2014). "Trade Liberalisation and the Balance of Payments in Sub-Saharan Africa: A Pooled Mean Group Approach", https://editorialexpress.com/cgi-bin/conferencedownload.cgi?db_name=IAAE2014&paper_id=405
- Krugman, P and Maurice, O. (2011). *International Economics Theory and Policy*, Eighth Edition.
- Lopez, PP. (2003). "The Impact of Trade Liberalisation on the Trade Balance, the Balance of Payments and Economic Growth: the Case of Mexico", *European Trade Study Group, Fifth Annual Conference*.
- Pacheco-Lopez, P and Thirlwall, AP. (2005). "Trade Liberalisation, the Balance of Payments and Growth in Latin America", <ftp://ftp.repec.org/opt/ReDIF/RePEc/ukc/ukcedp/0505.pdf>
- Parikh, A. (2004). "Relationship between Trade Liberalisation, Growth and Balance of Payments in Developing Countries: An Econometric Study", *Hamburg Institute of International Economics, Discussion Paper 286*.
- Qayed, SH. (2013). "The Impact of Trade Liberalization on Balance of Payments of Ethiopia", *International Journal of Advanced Research in Economics and Commerce*, Vol. 1, Issue 1.
- Reserve Bank of India. "Handbook of Statistics on Indian Economy", www.rbi.org.in
- Santos-Paulini, AU. (2002). "Trade Liberalisation and the Balance of Payments in Selected Developing Countries", <ftp://ftp.repec.org/opt/ReDIF/RePEc/ukc/ukcedp/0202.pdf>
- UNCTAD. (1999). "Trade and Development Report: Trade, External Financing and Economic Growth in Developing Countries", http://unctad.org/en/docs/trd1999_en.pdf
- Wu, Y and Zeng, L. (2008). "The Impact of Trade Liberalization on the Trade Balance in Developing Countries", *IMF Working Papers* 08/14.
- Yasmin, B. (2012). "Impact of Trade Liberalization on Trade Balance in Pakistan: Cointegration and Error Correction Mechanism", *Zagreb International Review of Economics and Business*, Vol. 15, No. 1.
- Zakaria, M. (2014). "Effects of Trade Liberalization on Exports, Imports and Trade Balance in Pakistan: A Time Series Analysis", *Prague Economic Papers*.
- <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD?locations=IN>
- <http://wits.worldbank.org/CountryProfile/en/Country/IND/Year/2015/SummaryText>
- <https://datahelpdesk.worldbank.org/knowledgebase/articles/201203-is-all-the-wdi-data-based-on-calendar-year-or-fisc>
- www.investopedia.com
- www.oecd.org