

Impact of Exports and Imports on USD, EURO, GBP and JPY Exchange Rates in India

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ABSTRACT

The exchange rate has an effect on the trade surplus (or deficit), which in turn affects the exchange rate. Imports and exports may seem like terms that have little bearing on everyday life, but they exert a profound influence on the consumer and the economy. In general, however, a weaker domestic currency stimulates exports and makes imports more expensive. Conversely, a strong domestic currency hampers exports and makes imports cheaper. Most of the studies focus on the impact of currency exchange rates on imports and exports of a country. There is a need to study the relationship in a reverse way. There are various factors due to which currency exchange rates fluctuates. One of the important factors is the impact of imports and exports of a country. Therefore this paper studies the impact of Export and Import on USD, EURO, GBP and JPY in India. The monthly exchange value of EURO, POUND, DOLLAR and YEN as well as EXPORT and IMPORT has been used for the study. The data period is from January 2006 to December 2016. The tools used for analysis are Correlation and OLS Regression Model. From the study it is found that there is a positive change in imports and exports on Indian rupees against euro, pound, dollar, and yen. Import of India is having significant impact exchange rates of selected currencies Exports of India is having significant impact on exchange rates of selected currencies.

Keywords: Exports, Foreign Exchange, Imports

I. INTRODUCTION

In the era of globalization foreign trade has become the lifeline of any economy. The main purpose a foreign exchange is not to earn but to stimulate greater economic activities. The export and import policy of nation has been competitive and facilitative (easy) in nature that helps in nurturing local enterprises and enables them to compete globally

The policies of foreign exchange rate are some of the most important macroeconomic indicators because world's investment decision is affected by them. The success of the policy is affected by the effect of foreign exchange rates on import and export exchange rates plays a vital role in a country's level of trade, which is critical to most ever free market economy in the world. Exports create jobs and boost economic growth. They give domestic companies more experience in producing for foreign markets. Over time, companies gain a competitive advantage in global trade. Imports allow foreign competition to reduce prices for consumers. It also gives shoppers a wider variety of goods and services.

The inter-relationship between a nation's imports and export and its exchange rate is a complicated one because of the feedback loop between them. The exchange rate has an effect on the trade surplus (or deficit), which in turn affects the exchange rate. In general, a weaker domestic currency stimulates exports and imports more expensive; similarly, a strong domestic currency hampers export and makes imports cheaper.

The international trade has been used since it helped in increasing the foreign direct investment. International trade fosters peace, goodwill, and mutual understanding among nations. Economic interdependence of countries often leads to close cultural relationship and thus avoid war between them. International trade is beneficial to the world economy. Every country can benefit monetarily if it is able to dispose of its surplus goods after meeting the requirements of the local people.

Imports and exports may seem like terms that have little bearing on everyday life, but they exert a profound influence on the consumer and the economy. In today's interlinked global economy, consumers are used to seeing products and produce

from every corner of the world in their local malls and stores. These overseas products – or imports – provide more choices to consumers and help them manage strained household budgets. But too many imports in relation to exports – which are products shipped from a country to foreign destinations – can distort a nation's balance of trade and devalue its currency. The value of a currency, in turn, is one of the biggest determinants of a nation's economic performance.

The inter-relationship between a nation's imports and exports and its exchange rate is a complicated one because of the feedback loop between them. The exchange rate has an effect on the trade surplus (or deficit), which in turn affects the exchange rate, and so on. In general, however, a weaker domestic currency stimulates exports and makes imports more expensive. Conversely, a strong domestic currency hampers exports and makes imports cheaper.

Most of the studies focus on the impact of currency exchange rates on imports and exports of a country. There is a need to study the relationship in a reverse way. There are various factors due to which currency exchange rates fluctuates. One of the important factors is the impact of imports and exports of a country. When a country increases its consumption of imports, the supply of currency of the respective country will increase. Which lead to depreciation of its currency value against the currency of the country from which it is importing? E.g. if US increases its consumption of imports from Japan, then the supply of US dollars will increase. As a result, the dollar depreciates against the yen.

II. LITERATURE REVIEW

Dr.G.JAYACHANDRAN (2013) has studied the impact of exchange rate volatility on the real export and import in India. He have used time series data to analyses the study for the period 1970 to 2011. The result states that the real export and import are co integrated with exchange rate volatility, real exchange rate, gross domestic product and foreign economic activity. The tools used by the researcher for his research are simple linear model, semi log linear model. As per the result of researches, suggest that trade liberalization, accompanied by appropriately supportive monetary policies, may preserve tax yield. The result has important implications for countries that have been reluctant to undertake trade liberalization for fear of the revenue consequences.

ElifGunerenGenc and OksanKibritciArtar(2014) the researcher have studied the impact of exchange rates on imports and to investigate the impact of exchange rates on exports of economically developing countries. Also studied whether there is a co-integrated relationship between effective exchange rates of the selected emerging countries. This study applies the panel co integration method for the period of 1985-2012. As the result of study implements that exchange rate effects on foreign trade balances in the literature, the error correction parameters for export is negative and significant (-0.259)further it is studied that there is a long term relationship between the effective exchange rate index and export.

Dr. Vijay Gondaliya and Mr. Paresh Dave(2005) .The research undertaken is the impact of import and export on exchange rate in India. The researcher has found theif there is a positive relationship between export and exchange rate and negative relationship between import and exchange rate. And also to find out the changes in export will influence in positive changes in Indian rupee against euro, pound, dollar, and yen. The study have empirically examines the impact of India's export and import on exchange rate using time series data for the period from January 2006 to october2015.

Soubarna Pal(2014) has studied "**Real Exchange Rate Effects on Output in India**". In his research paper studied real per capita GDP growth for India as a function of real exchange rate, inflation and US interest rates, foreign exchange reserve and government expenditure. As to complete the data analyzing the researcher have used non-linearity and regression model and took the annual data for the period of 1970-2006. As the research completed the researcher found that depreciation may have the negative effect on growth and appreciation may have the positive effect on growth.

Bhanumurthy and Sharma examined the **role of exchange rates in Indian exports** ('Does Weak Rupee Matter for India's Manufacturing Exports', January 2013, National Institute of Public Finance and Policy) using both macro and micro (firm) level data. The results from the macro data contradicted the traditional view that weak exchange rates could boost exports growth. Rather imports and import promotion policies (through reducing tariffs) were found to have a strong positive impact on exports growth in the post-reform period. The firm-level data suggested a strong inter-linkage between imports and exports.

III. EXPORTS AND IMPORTS IN INDIA

India exports approximately 7500 commodities to about 190 countries, and imports around 6000 commodities from 140 countries. India exported US\$318.2 billion and imported \$462.9 billion worth of commodities in 2014. The movements of foreign exchange rates are influenced by the trade of the country.

3.1 Exchange rate:

The exchange rates which are focused in the paper are USD, EURO, GBP, and YEN

3.1.1 USD (United States, Dollar)

The US central bank is called the Federal Reserve Bank (commonly referred to as "The Fed"). The USD is the most traded currency in the forex market and can be paired with all other major currencies. Common names for the USD include the greenback, buck, green, dough, smacker, bones, dead presidents, scribbles, and paper. The US Dollar is the most commonly converted currency in the world and is regularly used as a benchmark in the Forex market. As the dominant global reserve currency, it is held by nearly every central bank in the world. Additionally, the Dollar is used as the standard currency in the commodity market and therefore has a direct impact on commodity prices.

3.1.2 Euro

The central bank in Europe is called the European Central Bank (ECB). Currently, 17 EU member states have adopted the Euro. It is the second-most traded currency on the forex market, after the US Dollar, and also a major global reserve currency. On January 1, 1999, the Euro (EUR) was introduced as an account currency, replacing the European Currency Unit at par. The European Currency Unit was a theoretical basket of currencies rather than a physical currency in and of itself.

3.1.3 GBP (United Kingdom, Pound)

The United Kingdom's central bank is the Bank of England. As the fourth most traded currency, the British Pound is the third most held reserve currency in the world. Common names for the British Pound include the Pound Sterling, Sterling, Quid, Cable, and Nicker. The British Pound is the oldest currency still in use today, as well as one of the most commonly converted currencies. The Falkland Islands, Gibraltar, and Saint Helena are all pegged at par to the GBP.

3.1.4 YEN

The Japanese Yen is the third most traded currency in the world, and the most heavily traded currency in Asia. Due to its relatively low interest rates, the Japanese Yen is often used in carry trades with the Australian Dollar and the US Dollar. A carry trade is a strategy in which a currency with low interest rate is sold in order to buy a currency with a higher interest rate.

IV. OBJECTIVE

- To determine the impact of Imports of India on exchange rates of selected currencies
- To investigate the impact of Exports of India on exchange rates of selected currencies
- To find whether the changes in Imports or Exports will have a positive change on Indian rupees against euro, pound, dollar, and yen.

V. RESEARCH METHODOLOGY

This study uses time series data. The main objective of study is to examine whether the import or export effect the exchange rates (USD, EURO, POUND and YEN) in India. The monthly exchange value of EURO, POUND, DOLLAR and YEN as well as EXPORT and IMPORT has been used for the study. The data period is from January 2006 to December 2016. All time series contains total of 130 observations. The data are collected from database of Reserve Bank of India, SEBI, and investing.com. Tools used: Correlation Matrix and OLS Regression model.

VI. HYPOTHESIS TESTING

• Import

Ho: - Imports of India do not have a significant impact on selected currencies exchange rate.

H1:- Imports of India has a significant impact on selected currencies exchange rate

• Export

Ho: - Exports of India does not have a significant impact on selected currencies exchange rate.

H1:- Exports of India has a significant impact on selected currencies exchange rate.

VII. CORRELATION ANALYSIS

Table No:1 Correlation Matrix

	Exports	Imports	EUR PRICE	USD PRICE	GBP PRICE	JPY PRICE
Exports	1					
Imports	0.960141	1				
EUR PRICE	0.837296	0.790135	1			
USD PRICE	0.83367	0.780544	0.826976	1		
GBP PRICE	0.637833	0.570967	0.727263	0.799569	1	
JPY PRICE	0.756504	0.792395	0.664341	0.617923	0.225984	1

Source: Author's Compilation

The above table depicts that both Imports and Exports have a positive relationship with each of the exchange rates studied. When the correlation between Imports and Exchange rates are studied it can be concluded that EUR, USD and JPY have a strong positive correlation while GBP has moderate positive correlation. Therefore imports greatly influence the changes in EUR, USD and JPY exchange rates in India.

When the correlation between Exports and selected Exchange rates are studied it seen from the above matrix that EUR, USD and JPY have a strong positive correlation of (0.96, 0.83, and 0.75) respectively whereas GBP has a moderate positive correlation

VIII. REGRESSION ANALYSIS

The equations for regression analysis is as follows:

$Y = \alpha + \beta_1 x_1$ (Equation 1:- Impact of Imports)

$Y = \alpha + \beta_1 x_2$ (Equation 2:- Impact of Exports)

Where y is the dependent variable and x_1 and x_2 are the independent variables. In the regression model India's export and import is used as the independent variable, and Euro, Pound Yen and USD used as a dependent variables. By running the OLS regression model we have obtained the following output

8.1 Regression model 1: Impact of Exports on selected currencies in India.

TABLE 2: Impact of Exports on currencies

Variable	Coefficient	t-Statistic	Prob.	R-square	F-statistics
Impact of EXPORT on EURO (Dependent variable :EURO)					
Constant	50.5462	46.1672	0.0001***	0.7010	9.99e-33
export	0.0160	16.6353	0.0001***		
Impact of EXPORT on USD (Dependent variable :USD)					
Constant	34.0006	29.7309	0.0001***	0.6950	3.28e-32
export	0.0164	16.397	0.0001***		
Impact of EXPORT on GBP (Dependent variable :GBP)					

Constant	68.386	34.7892	0.0001***	0.4068	4.71e-15
export	0.0155	8.9962	0.0001***		
Impact of EXPORT on JPY (Dependent variable :JPY)					
Constant	0.335753	20.9922	0.0001***	0.5722	1.66e-23
export	0.0001	12.5656	0.0001***		

Source: Author's Compilation

From the above analysis it is found that coefficient for exports is positive when it studied with the selected currencies. That means that if there is 1% increase in exports there will a corresponding increase of 0.016 % increase in Euros, 0.0164% increase in USD, 0.0155% increase in GBP and 0.0001% increase in JPY.

From the above output it by observing the P-values it can be concluded that the null hypothesis is rejected at 1 % significance level. That is the alternate hypothesis that exports have a significant impact on the EURO, USD, GBP and JPY is accepted. The constant variable is significant for all.

Adjusted R-Square for EURO and USD is above 60% which implies that there is a good fit among the variables that is change in EURO and USD is explained by the change in exports. GBP has a low R-square which refers that there other factors which influence this currency. Whereas JPY has R-square of 57% which refers to only 57% variation in this currency is explained.

The F statistic value is compared to the probability value (F) it is significant, that is the null hypothesis is rejected. F-statistics for the above variable are all significant which implies that export have an impact on EURO, USD, JPY AND GBP.

8.2 Regression model 1: Impact of Imports on selected currencies in India.

TABLE 3: Impact of Import on EURO, USD, JPY AND GBP

Variable	Coefficient	t-Statistic	Prob.	R-squared	F-statistics
Impact of IMPORT on EURO (Dependent variable is euro)					
Const	50.6776	39.5291	0.0001***	0.624314	7.58e-27
Imports	0.0104746	14.0033	0.0001***		
Impact of IMPORT on USD (Dependent variable is USD)					
Const	34.2714	25.3472	0.0001***	0.609248	183.9821
Import	0.0107004	13.5640	0.0001***		
Impact of IMPORT on GBP (Dependent variable is GBP)					
Const	69.3513	31.6863	0.0001***	0.326004	9.82e-12
Import	0.00964753	7.5548	0.0001***		
Impact of Import on JYP (Dependent variable is JYP)					
Const	0.316839	20.3325	0.0001***	0.627890	4.30e-27
Import	0.000128293	14.1107	0.0001***		

Source: Author's Compilation

From the above analysis it is found that coefficient for imports is positive when it studied with the selected currencies. That means that if there is 1% increase in imports there will a corresponding increase of 1.04% increase in Euros, 1.07% increase in USD, 0.9% increase in GBP and 0.01% increase in JPY.

From the above output it by observing the P-values it can be concluded that the null hypothesis is rejected at 1 % significance level. That is the alternate hypothesis that imports have a significant impact on the EURO, USD, GBP and JPY is accepted. The constant variable is significant for all.

R-Square for EURO ,USD and JPY is above 60% which implies that there is a good fit among the variables that is change in EURO USD and JPY is explained by the change in Imports. GBP has a low R-square which refers that there other factors other than imports which influence this currency.

The F statistic value is compared to the probability value (F) it is significant, that is the null hypothesis is rejected. F-statistics for the above variable are all significant which implies that export have an impact on EURO, USD, JPY AND GBP.

CONCLUSION

The primary objective of the research is to investigate whether there is an impact of export and import on selected currencies such as EURO, USD, GBP and Japanese Yen. The change in import or export will have a positive impact on Indian currency. Exporting and importing is not just the core of any large, successful business; it also helps national economies grow and expand. The tools used for the study are Correlation Analysis and OLS Regression Model.

When the correlation between Imports and Exchange rates are studied it can be concluded that EUR, USD and JPY have a strong positive correlation while GBP has moderate positive correlation. Therefore imports greatly influence the changes in EUR, USD and JPY exchange rates in India.

When the correlation between Exports and selected Exchange rates are studied it seen that EUR, USD and JPY have a strong positive correlation of respectively whereas GBP has a moderate positive correlation.

For Regression analysis two equations were formed one wherein imports was the independent variable and the second equation in which exports is the independent variable. And the selected currencies USD, EURO, GBP and JPY are taken as the dependent variables.

By running the OLS Regression model it is seen that imports have a significant impact on the EURO, USD, GBP and JPY while also that exports have a significant impact on the EURO, USD, GBP and JPY is accepted.

Coefficient for exports is positive when it studied with the selected currencies. That means that if there is 1% increase in exports there will a corresponding increase of 0.016 % increase in Euros, 0.0164% increase in USD, 0.0155% increase in GBP and 0.0001% increase in JPY.

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Adjusted R-Square for EURO ,USD and JPY is above 60% which implies that there is a good fit among the variables that is change in EURO USD and JPY is explained by the change in Imports. GBP has a low R-square which refers that there are other factors other than imports which influence this currency. There is a positive change in imports and exports on Indian rupees against euro, pound, dollar, and yen. Import of India is having significant impact exchange rates of selected currencies Exports of India is having significant impact on exchange rates of selected currencies.

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