

# Impact of Exchange Rate and Inflation on the Export Performance of the Indian Economy: An Empirical Analysis

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## Abstract

Since liberalisation, exports have been playing an increasingly crucial role in India's economic performance. This research paper is an attempt to analyse the determinants of exports in India, with special reference to inflation and exchange rate in the wake of this unprecedented importance of export in Indian economy. The main data for the study is collected from the RBI Database 2020 over a period of 25 years (1995 to 2020). The study was conducted employing econometric techniques like Augmented Dickey Fuller (ADF) Test, Johansen's Co-integration Maximum Likelihood Test and Vector Error Correction Model (VECM). In order to study the stationary properties of the variables, the long run relationship among the macroeconomic variables and export, and the dynamic interrelationship among the variables of the model, respectively. The results derived from this study suggest that all variables are statistically significant for influencing the export performance, that is, exchange rate and inflation are found to have positive impact on export performance in India. These findings suggest some policy implications in managing inflation and the exchange rate system to promote export in India, and thereby achieve the overall growth rate of the economy.

## Keywords

Export, WPI, NEER, VECM, ADF

## Introduction

Just as no individual is self-sufficient, no country in the world is self-sufficient either. Differences in the climatic and geographic conditions, presence of natural resources, presence of human skills, etc. make mutual dependence an inevitable condition for all the countries in the world. Therefore, countries import (buy) what they lack and export (sell) what they have in excess. The dominance of export over

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import—usually referred to as a favourable balance of trade—is regarded as the hallmark of the strength of an economy. Export of goods and services is not as simple as selling them in the domestic market. As export involves movement of goods and services across boundaries and use of foreign currencies, a number of formalities need to be taken into account before the goods and services can leave the border of a country.

Globalisation, and its associates like liberalisation and privatisation, have revolutionised the significance, scope and impact of export all over the world. Since then, globalised countries began to view export as more than a mere import substitution trade strategy; it is now viewed as an export promotion strategy. That is, now export began to be considered not merely as an attempt to achieve a favourable balance of trade and earning of foreign currency but as a positive weapon to create more employment, more production, efficient and optimum mobilisation of domestic resources, and savings also. Similarly, globalisation and its consequent integration of the world economies boosted exports by removing barriers and opening new markets all over the world.

Since liberalisation, exports assumed the role of an aid to the developmental efforts. As a result, export surplus became a prerequisite for economic growth and development of countries. At the same time, economic growth is also recognised as a necessary condition for the promotion of export. In other words, there is a reciprocal or mutual relationship between exports and economic growth. That is, an increase in export and all the attempts to increase export lead to an increase in economic growth, and a consequent increase in export revenue as a leading factor in the increase of the aggregate demand of a country. Similarly, an increase in economic growth enhances export in manifold ways—especially by achieving surplus production. Therefore, nowadays, production has become export-oriented, and countries all over the world concentrate on the production of goods in which they have a comparative advantage, aiming at export of the surplus and minimising the production of goods in which they have a comparative disadvantage. Thus, it can be concluded that export is the key factor in growth process.

All that has been stated so far is equally applicable to India. Liberalisation of cross-border trade and resource movement over time led to the relaxation of restrictions on trade and foreign investment in India. In addition to the General Agreement on Tariffs and Trade, the development of economic blocs such as the European Union, BRICS and ASEAN, and other such facilitating mechanisms have provided to India an increased access to many foreign markets. The globalisation and the economic reforms of the 1990s emphasising on liberalisation, openness, transparency, etc. enabled increased integration of the Indian economy with the rest of world. After the inauguration of liberalisation, India became a destination of huge capital inflows, leading to its emergence as the second fastest growing country in the world. All aspects of growth of the exports—including the growth in the exports of the invisibles—are major factors that contributed immensely, beyond the increase of the current account surplus of the balance of payments of India.

Economic growth and the widening of the world market alone are not the only factors that boost the exports in Indian economy. Besides these two factors, there are certain other equally important macroeconomic factors that are also playing a dominant role in the increase of Indian exports. Among them, inflation and exchange rate are the most prominent. There is a direct but negative link between inflation and export (Khan et al., 2007). It operates in a simple way. Inflation, which is nothing other than an increase in the money supply, leads to an increase in demand for goods and services, which in turn leads to increase in prices. The higher the prices in an economy, the lesser will be the demand for its products and services in other countries, consequently leading to reduction of the export and vice versa. However, whether the relationship between inflation and export is negative or positive depends on the rate of inflation, as in the case of the relationship between inflation and economic growth. That is, a moderate inflation need not have a negative impact on export; instead, only a high rate of inflation is

likely to have a negative impact on export. Same is the case for the exchange rate also. Exchange rate appreciates in accordance with the appreciation of the domestic currency and vice versa. Accordingly, export is expected to be decreased during the appreciation of the exchange rate, which takes place during the appreciation of the local currency because during the appreciation of the exchange rate, a foreign buyer can buy only less quantity of goods and services from another foreign economy. Accordingly, when Indian currency appreciates, a foreign buyer can buy only small quantity of goods and services using his currency, implying decrease in export. It follows that depreciation of Indian currency is a contribution factor for the increase in export in India.

## Literature Review

There are several studies or reviews related to the macroeconomic determinants of export, especially about the relationship between inflation and export performance of the developed and developing economics. In economics, inflation is used as tool to check money supply level in the market. For example, if the money supply increases in the market, people start demanding for goods and services, which causes a hike in prices. When the money supply is low, there is decreased demand of goods and services, which leads to deflation. Therefore, inflation leads to reduction in export because of goods and services that prove more costly in the international market. So, if the price of domestic goods increases, they become more expensive for foreign buyers. They start looking elsewhere to source the same product, thereby bringing down export volume and trade imbalance. This leads to an increase in current account deficit of the host economies.

One such study is by Ball et al. (1988). According to this study, inflation leads an to increase in the price of goods and services, and this renders a country's products and services unattractive or less competitive in the international market. Gylfason (1991) also studied the impact of various macroeconomic variables on export, with special reference to inflation. He also agreed with the view of the aforementioned authors, that there is a negative relationship between high inflation and export performance. Rehman and Khan (2015) made a case study of Pakistan to show the impact of inflation on its export. According to him, the food price inflation between 1992 and 2013 in Pakistan adversely affected its export of food products. They also found that high demand for food products is responsible for food inflation. This study is comparatively the most scientific one in the sense that they employed major advanced econometric techniques and principles like Augmented Dickey Fuller, Vector Error Correction Model and Johansen Co-integration Test. Their recommendation is that products with excess supply alone should be exported. Mundell (1965) also studied the relationship between inflation and economic growth, of which export is a major contributing factor. Mallik and Chowdhury (2001) conducted a similar study, taking four developing South Asian countries, and found that there is a positive long-run relationship between inflation and economic growth, implying the positive relationship between inflation and export. They argue that a moderate rate of inflation is favourable to the growth of export, and thereby, a stimulation for economic growth implying that a high rate of inflation has negative impact on export as well as economic growth.

Similarly, there are several studies related to the specific impact of exchange rate on export. Depreciation of the currency increases product prices and prevents cheaper imported product access into the home market, but also causes higher prices in the domestic market, which implies inflation. On the other hand, increasing the price leads to reduction in the purchasing power of domestic consumers, and reduces real income. That means currency depreciation causes an increase in imported product prices, because of the decreasing value of domestic currency. Appreciation of currency is realized when the

domestic real interest rate rises. This implies a decline in money supply, which reduces the general price level. As a result of a low level of money supply, the exchange rate is expected to increase the value of domestic currency. The effects of currency appreciation cause an important change in internal and foreign markets, because appreciation increases the value of domestic currency, which means it is worth more in terms of foreign currency. Our country is not a developed country; it is a developing country. All industrial ingredients and raw materials are not produced in India. Industrialist depend on foreign countries for acquiring raw materials for producing their products. If the dollar is appreciated against Indian Rupee, the importer needs to pay more Indian currency against the Import Bill. Ultimately, it affects the cost of final product, and the final product becomes more costly. Costlier products have less demand in foreign market, and it will harm our export business and flow of income.

Cushman (1983) argued that exchange rate volatility adversely affected export in developed countries. Akhtar and Hilton (1984), who studied the case of trade relationship between the US and Germany, found that exchange rate volatility adversely affected the export performance of these two countries. Vergil (2002) studied the impact of real exchange rate (RER) volatility on the export from Turkey to the US, and found that there is long-run as well as short-run negative relationship between the exchange rate volatility in Turkey's export to the US. Baron (1976), and Hooper and Steven (1978) arrived at the same conclusion: that exchange rate volatility has a negative effect on export.

On the contrary, Todani and Munyama (2005), who studied the exports and exchange rate volatility in South Africa, found that there is a positive relationship between South African exports and exchange rate volatility—both in the long-run and in the short-run. Moccero and Winograd (2007) analysed the causal link between RER volatility and export in Argentina, employing econometric models to acquire the implicit magnitudes of RER volatility. This study showed that decrease in exchange rate has a positive impact on exports to Brazil, though this impact is negative for the rest of world.

Nyeadi et al. (2014) studied the export growth in Ghana, and found that exchange rate has no significant impact on the country's export. Poonyth and Van Zyl (2000) studied the long-run and the short-run effects of RER changes on South African agricultural exports using an Error Correction Model (ECM) within the co integrated VAR (Vector Autoregressive) model, and found that there is a positive relationship between the export of agricultural products and the exchange rate both in the short-run and the long-run. South African exports and their relationship with exchange rate were studied by Nyahokwe and Ncwadi (2013) using VAR and Vector Error Correctional Model (VECM) to establish long- and short-run relationship between export and exchange rate. This study did not show a clear effect of exchange rate on the exports in South Africa. However, it found some sensitivity of South African exports to movements of the exchange rate. The review of the empirical literature made so far shows that there is no common agreement with regard to the impact of inflation and exchange rate on export, especially with regard to exchange rate and export. Hence, this situation opens scope for studies in this issue.

## **Objectives of the Study**

To analyse the impact of macroeconomic variables with special reference to the impact of inflation and exchange rate on the export performance in India.

To identify the short- and long-run equilibrium relationship between inflation and exchange rate to the export in India.

To determine the causality between inflation and exchange rate to export in India.

## Research Methodology

### Sources of data

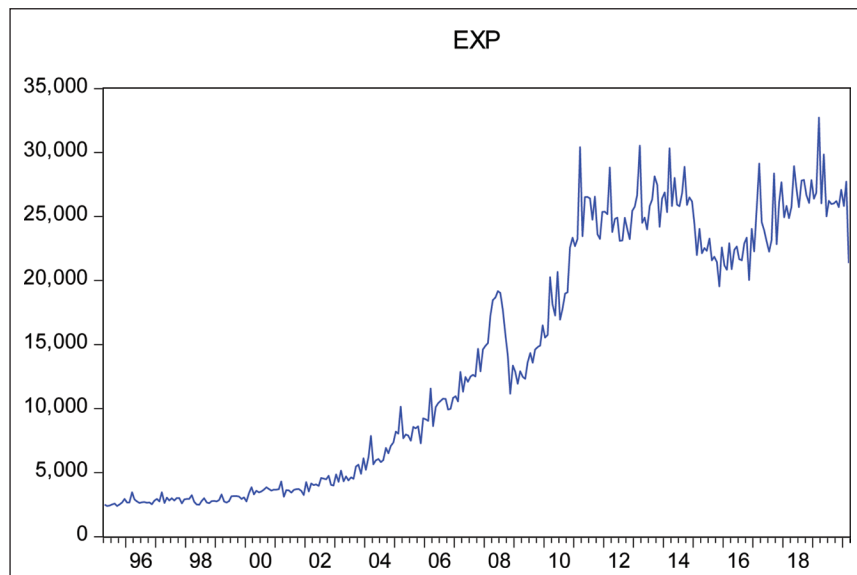
This study is mainly based on secondary data related to exchange rate, inflation and export during the period between 1995 and 2020, collected from the RBI Database 2020.

### Data Analysis

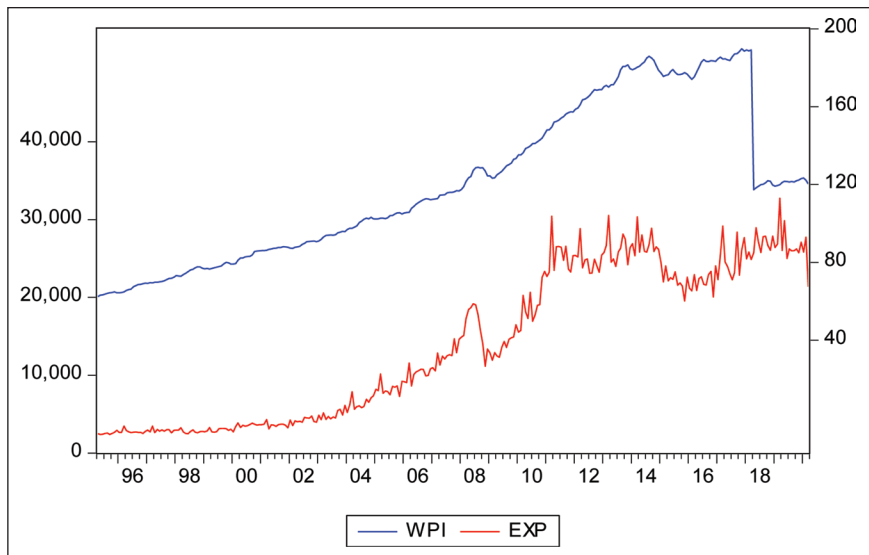
In the model of this study, export is taken as a dependent variable, and volatility in exchange rate (NEER) and inflation (WPI) as independent variables. Correlation analysis is used for determining the relationship between inflation and exchange rate volatility on export performance of India; VECM is used for analysing the exact impact of exchange rate and inflation volatility on the export performance of India; ADF for testing the stationary properties of the data; and Akaike Information Criteria (AIC) for determining the optimal lag length of the model.

### Trends in India's Exports

As in the case of general economic activities in India, her export is also witnessing tremendous changes since the economic reforms of 1990s, as can be seen in Figure. It gives a detailed analysis of the pattern of India's export growth in the post-reform period, and shows that the average monthly flow of export during the entire period is \$13,921.72 million. This figure shows an almost consistent increase in the export during the period taken for the study. After the new economic policy, India has taken a series of measures to structure the economy and improve the balance of payments position. The compelling forces



**Figure 1.** Performance of Export in India



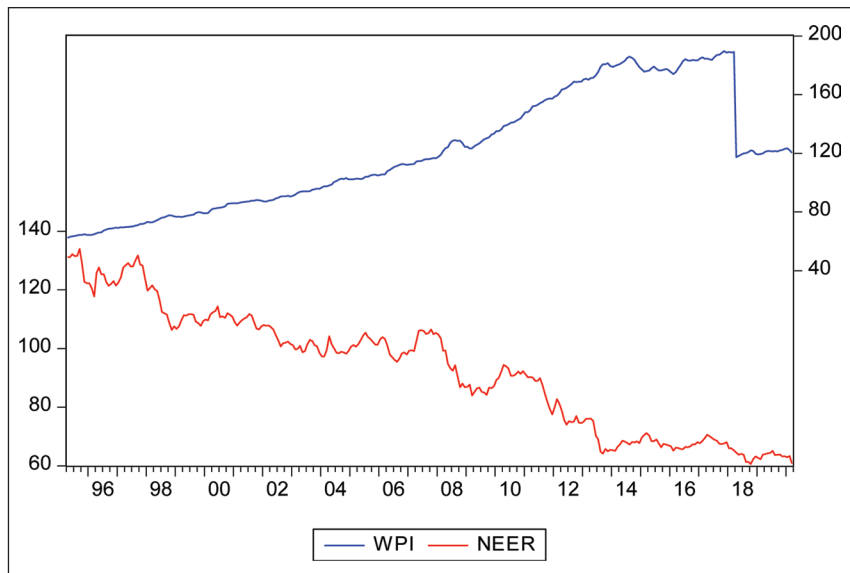
**Figure 2.** Correlation between Inflation and Export in India

behind the new economic policy of India are well known. In 1991, the country had plunged into deep economic crisis. The rate of inflation increased, and foreign exchange reserves declined to a level covering only three weeks of imports.

Figure 2 analyses the relationship between export and wholesale price index (proxy for measuring inflation) in India. Wholesale price index is an index that represents the wholesale price of a basket of goods over time; it is the proxy for measuring inflation. Inflation leads to reduction in export due to high price of goods and services in the international market. Here, a positive correlation between export and inflation in India (correlation coefficient = 0.88) is seen. Inflation affects export primarily through the influence of exchange rate. High inflation slows down the process of economic growth. It is believed that reasonable and stable inflation rate boosts the economic growth, and hence the development process and export of the country.

The rate of inflation in a country can have a major impact on the value of the country's currency. A country with lower inflation rate than another country will see an appreciation in the value of its currency. Higher inflation typically sees depreciation, and is usually accompanied by higher interest rates. Figure 3 indicates that there is a negative correlation (correlation coefficient =  $-0.87$ ) between inflation (WPI) and exchange rate (NEER). That means inflation increases domestic currency depreciation against foreign currency, since the purchasing power of domestic currency is eroded. Higher inflation typically leads to higher interest rates, and this leads to weaker currency. A currency with a higher inflation rate will depreciate against a currency with lower inflation.

The exchange rate is a crucial price that determines the amount of rupees earned per dollar of export. Thus, it is a determinant of the price competitiveness of exports in world markets. If the Indian rupee is overvalued, it has a negative impact on India's exports. However, we need to look at the behaviour of the rupee in relation to the currencies of our major trading partners. That is why the RBI started constructing nominal and real effective exchange rates. NEER (proxy for measuring the exchange rate) is the weighted average of bilateral nominal exchange rates of the home currency in terms of foreign currency. The



**Figure 3.** Correlation between Inflation and Exchange Rate in India

NEER indices show the appreciation (index above 100) or depreciation (index below 100) of the national currency against the basket of selected currencies for a certain period relative to a base period. Similarly, it exercises an important influence on the profitability of domestic firms that produce goods which are exported, and volatility of exchange rate affects both the cash flow of a firm's operations and the value of a firm. From a theoretical perspective, it is a general view that exchange rate fluctuations are an important source of macroeconomic uncertainty. Figure 4 indicates that there is a negative relationship (correlation coefficient =  $-0.90$ ) between export and exchange rate in India. That means currency depreciation adversely affect the export performance. So the exact impact of inflation and exchange rate on export performance can be analysed only with the help of advanced econometrics methods and tools. These facts in general motivate to investigate the inflation-exchange rate-export relationship of the Indian economy.

## Model Specification

$$EXP = f(\text{NEER}, \text{WPI})$$

$$FDI = \beta_0 + \beta_1 (\text{NEER}) + \beta_2 (\text{WPI}) + \varepsilon$$

EXP = Export

NEER= Nominal Effective Exchange Rate

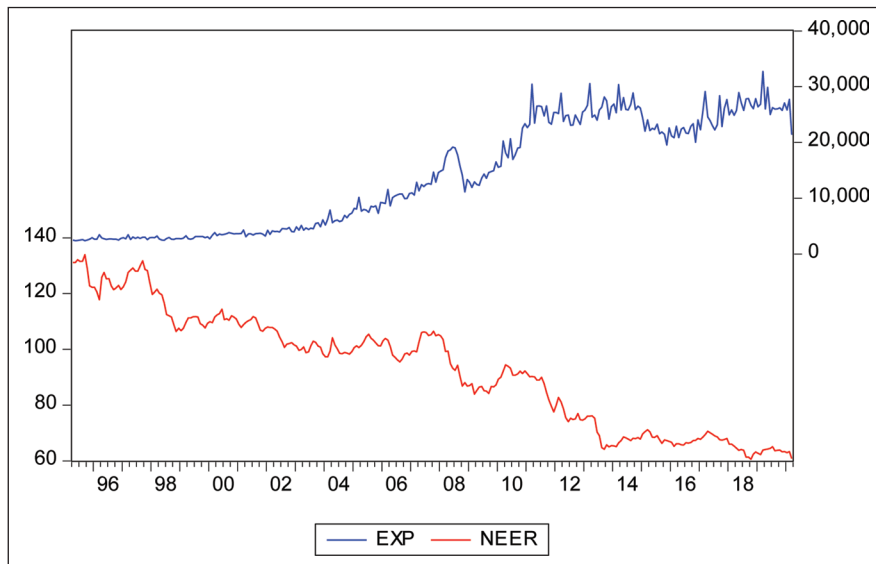
WPI=Wholesale Price Index

$\beta_0$  = Intercept

$\beta_1$  = The Coefficient of Independent Variable NEER.

$\beta_2$  =The Coefficient of Independent Variable WPI

$\varepsilon$ =Error Term



**Figure 4.** Correlation between Export and Exchange Rate in India

The aforementioned empirical analysis shows the relationship between independent variables of the model, that is, exchange rate and inflation, and the dependent variable of the model, that is, export. The level of inflation has a direct impact on the exchange rate between two currencies. Purchasing power parity attempts to compare the different purchasing powers of each country according to the general price level (and not the exchange rate). This makes it possible to determine the country with the highest cost of living. Changes in purchasing power parity (and therefore inflation) affect the exchange rate. If inflation is the same in both countries, the exchange rate does not change. If it is higher in one country than in the other, this is when inflation affects the exchange rate. The currency with the higher inflation rate then loses value and depreciates, while the currency with the lower inflation rate appreciates on the Forex market. Therefore, our research is mainly focused on selected macroeconomic variables like inflation and exchange rate on the export performance of Indian economy.

## Unit Root Test

It is necessary to test for stationarity of time series before proceeding with the co-integration and long-run relationship of the model. The results of both the ADF test and Phillips Peron (PP) test (Table 1) shows that export, exchange rate and inflation are integrated in order one as the null hypothesis, that the

**Table 1.** Unit Root Test Results

| Variables | Stationary |
|-----------|------------|
| EXP       | I(1)       |
| NEER      | I(1)       |
| WPI       | I(1)       |

**Source:** Author's calculation.



data series are not stationary and is accepted at level but rejected at first difference. In other words, these variables are stationary at first difference or I (1).

## VAR Model

The next step is to select the optimum lag length of the model by using VAR model and checking the correlogram of its residuals (to avoid the problem of autocorrelation). Using this method, the results suggest that lag 3 (see Table 2) is the optimum lag length of the model on the basis of Hannan-Quinn (HQ) information criterion.

Table 3 explains the Trace Statistic, and the Maximum-eigenvalue statistic point out one co-integrating equation at 5 per cent level. This infers the existence of a long-run relationship among the variables of the model. If variables are co-integrated, it leads to a long-run relationship between macroeconomic variables and export in India.

## VECM: Export in India and its Linkage with Macroeconomic Variables

The VECM is estimated to analyse the long-run causality and short-run dynamics of the model. In the presence of co-integration, there always exists a corresponding error-correction representation, captured by the Error-Correction Term (ECT). The ECT captures the long-run adjustment of co-integration variables. The normalized coefficients of long-run relationship is presented in Table 4. The empirical results indicate that the exchange rate volatility and wholesale price index have significant positive impact or increase the export performance in India. The sign of normalized co-integrating coefficients

**Table 2.** Optimum Lag Length Criteria

| VAR Lag Order Selection Criteria   |           |           |           |           |           |           |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Endogenous variables: EXP NEER WPI |           |           |           |           |           |           |
| Lag                                | LogL      | LR        | FPE       | AIC       | SC        | HQ        |
| 0                                  | -4606.466 | NA        | 1.75e+11  | 34.39900  | 34.43920  | 34.41514  |
| 1                                  | -3181.715 | 2806.972  | 4502162.  | 23.83369  | 23.99448  | 23.89827  |
| 2                                  | -3107.929 | 143.7170  | 2776278.  | 23.35022  | 23.63160* | 23.46323  |
| 3                                  | -3084.197 | 45.69343  | 2487398.  | 23.24027  | 23.64225  | 23.40173* |
| 4                                  | -3075.768 | 16.03931  | 2498341.  | 23.24454  | 23.76711  | 23.45443  |
| 5                                  | -3066.305 | 17.79659  | 2490211.  | 23.24108  | 23.88424  | 23.49941  |
| 6                                  | -3054.585 | 21.77901  | 2440869.  | 23.22078  | 23.98454  | 23.52754  |
| 7                                  | -3039.392 | 27.89157* | 2331551.* | 23.17456* | 24.05891  | 23.52976  |
| 8                                  | -3035.071 | 7.835323  | 2415666.  | 23.20948  | 24.21443  | 23.61312  |

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

**Source:** Author's calculation.

**Table 3.** Johansen Co-integration: Export and Macroeconomic variables in India

Trend assumption: Linear deterministic trend

Series: EXP NEER WPI

Lags interval (in first differences): 1 to 3

Unrestricted Cointegration Rank Test (Trace)

| Hypothesized<br>No. of CE(s) | Eigenvalue | Trace<br>Statistic | 0.05<br>Critical Value | Prob.** |
|------------------------------|------------|--------------------|------------------------|---------|
| None*                        | 0.082273   | 37.07531           | 29.79707               | 0.0061  |
| At most 1                    | 0.049059   | 13.72279           | 15.49471               | 0.0909  |
| At most 2                    | 0.000148   | 0.040342           | 3.841466               | 0.8408  |

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\* MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

| Hypothesized<br>No. of CE(s) | Eigenvalue | Max-Eigen<br>Statistic | 0.05<br>Critical Value | Prob.** |
|------------------------------|------------|------------------------|------------------------|---------|
| None*                        | 0.082273   | 23.35252               | 21.13162               | 0.0239  |
| At most 1                    | 0.049059   | 13.68245               | 14.26460               | 0.0616  |
| At most 2                    | 0.000148   | 0.040342               | 3.841466               | 0.8408  |

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\* MacKinnon-Haug-Michelis (1999) p-values

**Source:** Author's calculation.

are reserved to enable proper interpretation. A moderate rate of inflation boosts the economic growth through export promotion. If there is no inflation, everything will be stagnant and the demand will not rise. But inflation is just like a two-sided knife. If handled with care, it is a tremendous tool to stimulate growth. If mishandled, it can cause the collapse of an entire country. Exchange rate has a positive impact on export performance. It is possible to offset potential unexpected movement of exchange rate by investing in the forward market, causing producers to be unaffected by movement of exchange rate.

The results of error correction have been presented in Table 5. It shows convergence and evaluates the speed of adjustment towards equilibrium. The main feature of error term C (1) is its capability to correct any disequilibrium that may occur due to any shock in the system from time to time. If disequilibrium exists in the system, the error correction term corrects it and provides guidance to variables of the system so they can come back towards equilibrium. The coefficient of the ECT (C1) of the model is  $-0.12$ ; this implies that the system corrects its previous period of disequilibrium at the speed of approximately 12 per cent per month. In line with a prior expectation, the sign of ECT coefficient is significant and negative, indicating that there is a long-run causality from macroeconomic variables to export in India.

## VAR Block Exogeneity Test

VAR Granger Causality or Block Exogeneity Wald Test is used to examine the causal relationship among the macroeconomic variables of the model. Table 6 shows that all exogenous variables are significant for

**Table 4.** Vector Error Correction Estimates

| Vector Error Correction Estimates            |                                      |
|--|--------------------------------------|
| Standard errors in ( ) & t-statistics in [ ] |                                      |
| Cointegrating Eq:                            | CointEq1                             |
| EXPORTS(-1)                                  | 1.000000                             |
| NEER(-1)                                     | -418.0996<br>(82.6082)<br>[-5.06123] |
| WPI(-1)                                      | -396.5243<br>(38.3153)<br>[-10.3490] |
| C  | 75012.74                             |

Source: Author's calculation.

**Table 5.** Error Correction term Estimates

|       | Coefficient | Std. Error | t-Statistic | Prob.  |
|-------|-------------|------------|-------------|--------|
| C(1)  | -0.128812   | 0.042692   | -3.017227   | 0.0026 |
| C(2)  | -0.475295   | 0.067516   | -7.039693   | 0.0000 |
| C(3)  | -0.142513   | 0.074621   | -1.909822   | 0.0565 |
| C(4)  | 0.075222    | 0.063071   | 1.192647    | 0.2334 |
| C(5)  | -66.66269   | 51.79524   | -1.287043   | 0.1985 |
| C(6)  | 34.68920    | 51.92419   | 0.668074    | 0.5043 |
| C(7)  | -62.80549   | 51.41971   | -1.221428   | 0.2223 |
| C(8)  | 152.5555    | 111.2548   | 1.371225    | 0.1707 |
| C(9)  | 397.0260    | 121.6060   | 3.264855    | 0.0011 |
| C(10) | -282.6998   | 108.6171   | -2.602720   | 0.0094 |
| C(11) | -17.53321   | 98.70286   | -0.177636   | 0.8591 |
| C(12) | 9.79E-05    | 5.26E-05   | 1.859362    | 0.0634 |
| C(13) | 0.000112    | 8.32E-05   | 1.346724    | 0.1785 |
| C(14) | 7.78E-05    | 9.20E-05   | 0.845763    | 0.3979 |
| C(15) | -3.38E-05   | 7.78E-05   | -0.434391   | 0.6641 |
| C(16) | 0.227601    | 0.063850   | 3.564646    | 0.0004 |
| C(17) | -0.072990   | 0.064009   | -1.140316   | 0.2545 |
| C(18) | 0.023415    | 0.063387   | 0.369397    | 0.7119 |
| C(19) | -0.103204   | 0.137147   | -0.752506   | 0.4520 |
| C(20) | -0.136268   | 0.149908   | -0.909011   | 0.3636 |
| C(21) | -0.101409   | 0.133896   | -0.757375   | 0.4491 |
| C(22) | -0.055453   | 0.121674   | -0.455754   | 0.6487 |
| C(23) | 5.47E-05    | 2.36E-05   | 2.320061    | 0.0206 |
| C(24) | 0.000133    | 3.73E-05   | 3.567491    | 0.0004 |
| C(25) | 3.17E-06    | 4.12E-05   | 0.076869    | 0.9387 |
| C(26) | -7.26E-05   | 3.48E-05   | -2.085671   | 0.0373 |
| C(27) | -0.043412   | 0.028582   | -1.518848   | 0.1292 |
| C(28) | 0.089591    | 0.028653   | 3.126714    | 0.0018 |
| C(29) | 0.003944    | 0.028375   | 0.138995    | 0.8895 |

(Table 5 continued)

(Table 5 continued)

|                                 | Coefficient | Std. Error | t-Statistic | Prob.  |
|---------------------------------|-------------|------------|-------------|--------|
| C(30)                           | 0.487934    | 0.061394   | 7.947581    | 0.0000 |
| C(31)                           | 0.023191    | 0.067106   | 0.345594    | 0.7297 |
| C(32)                           | -0.063159   | 0.059938   | -1.053725   | 0.2923 |
| C(33)                           | 0.261404    | 0.054467   | 4.799277    | 0.0000 |
| Determinant residual covariance |             | 2035980.   |             |        |

**Source:** Author's calculation.**Table 6.** VAR Block Exogeneity Test

| Dependent variable: D(EXPORTS) |          |    |        |
|--------------------------------|----------|----|--------|
| Excluded                       | Chi-sq   | df | Prob.  |
| D(NEER)                        | 2.884021 | 3  | 0.4099 |
| D(WPI)                         | 20.73198 | 3  | 0.0001 |
| All                            | 24.99510 | 6  | 0.0003 |

**Source:** Author's calculation.

the export performance of India. But in individual analysis, inflation is the main factor for influencing the export performance in the short-run. Exchange rate volatility does not influence the export performance of India in the short-run. That means that depreciation of the domestic currency does not have a significant effect on export performance in the short-run, but positively in the long-run.

## Conclusion

This paper attempts an analysis of the change in India's export behaviour between 1995 and 2020.

The objective of this study was to analyse the long-run and short-run impact of the macroeconomic determinants on the export performance of the Indian economy. The VEC model was used to examine the dynamic relationship between the macroeconomic variables, with special reference to inflation and exchange rate to the export performance of the model. The results suggested that all determinants incorporated into the model are statistically significant at 1 per cent level, and have a long-run relationship. On the basis of empirical analysis, inflation and exchange rate are shown to positively affect export performance in India. The rate of inflation in a country can have a major impact on the value of the country's currency. A very low rate of inflation does not guarantee a favourable exchange rate for a country, but an extremely high inflation rate is very likely to impact the country's exchange rate with other nations negatively. On the other hand, an exchange rate appreciation helps to curtail inflation, maintain a favourable balance of trade, boost export of domestic commodities and, above all, maintain steady growth of the economy. Exchange rate volatility has great importance, and affects the overall growth and development of a country's trade and economy. Thus, the economy should try to make their currency strong and try to stabilize their exchange rate in order to improve its trade and economics. This study recommended that the Government of India should encourage the export promotion strategies to promote export in goods and services in order to maintain a surplus trade balance and favourable balance of payment position.

## Policy Implication

The study specifically made the following policy recommendations to the maintenance of stable exchange rate, moderate rate of inflation and promotion of export performance.

- The government should encourage the export promotion strategies in order to maintain a surplus balance of trade.
- An effective policy should be made based on the fiscal and monetary policies, which should be aimed at achieving a realistic exchange rate for India.
- The government should control the inflation rate for the promotion of export, and thereby, the economic growth of India.

Finally, further research can be attributive in case of examining other countries—including developing or developed economies. Expanding the time period and examining more macroeconomic variables can be used to garner more accurate empirical results.

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