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IMPACT OF FOREIGN TRADE ON ECONOMIC GROWTH IN INDIA IN THE POST REFORM PERIOD: AN EMPIRICAL ANALYSIS

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ABSTRACT

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Foreign trade plays an important role in the economic development of a nation. It is called engine of growth. It signifies trade between one country and other countries. Until 1991, India's development strategy was mainly import substitution and self-reliance oriented. India has moved from a protectionist policy toward trade liberalization since 1991. The importance of foreign trade has increased in India due to liberalization, privatization and globalization, known as LPG reforms of 1991. These policies opened the Indian economy for foreign trade. During the reform period, India's GDP has substantially increased. Today, India is one of the fasted growing economies in the world. Both exports and imports have also increased substantially in the post reform period in India. However, exports are lower than imports in India implying that India's trade balance remains negative in the post liberalization period. This may be due to the fact that India is one of the largest importers of crude oil. The present paper examines the impact of foreign trade on India's economic growth by applying regression. The study reveals that exports have significant positive impact on economic growth in India.

KEY-WORD: ***Foreign trade, Export, Import, Regression, Economic growth***

I. INTRODUCTION

Foreign trade, also known as international trade plays an important role in the economic development of a country. It is viewed as engine of growth. It signifies trade between one country and other countries. Foreign trade is gainful for nations if trade takes place on the basis of comparative advantage. Until 1991, India's development strategy was mainly import substitution and self-reliance oriented. India has moved from a protectionist policy toward trade liberalization since 1991. The importance of foreign trade has increased in India due to liberalization, privatization and globalization, known as LPG reforms of 1991. These policies opened the Indian economy for foreign trade. India's trade liberalization was comprehensive. Import licensing was liberalized. A major initiative of the reform undertaken in external sector included reduction in tariff rates. The numbers of items under export control have been reduced as part of the liberalization policy in India.

India's economic reforms resulted in higher growth of GDP. Today, India is one of the fastest growing economies in the world. India's real GDP increased at an estimated 6.9 percent in 2022-23 (World Bank, year unknown). Against this backdrop, the present paper makes an attempt to study the impact of foreign trade on India's economic growth. The study covers the period 1991-2022.

II. REVIEW OF LITERATURE

1) Kumari (2014) investigated the linkage between exports, imports and GDP at factor cost at constant prices in India for the period of post liberalization from 1991-92 to 2012-13. The study found that export has a positive influence on economic growth but import has negative influence on economic growth.
2) The empirical study by Iqbal et al. (2017) examined the relationship between bilateral trade and

economic growth of India with the US. The study covered a period of thirty years. Based on multiple regression, the study revealed a positive impact of the bilateral trade on economic growth for both India and the US.

3) Raghuramapatruni and Reddy (2020) examined the impact of international trade on economic growth of India. Using Autoregressive Distributive Lag Model (ARDL), the study reveals a positive relationship between international trade and economic growth.

4) The study by Suriaganth and Abdullah (2021) attempted to analyze the trend and composition of foreign trade since 1991 and the impact on the economic growth of India. The study found that both total exports and imports increased but the growth rate of imports exceeded the growth rate of exports. Using regression, the study also found that import has a negative impact on economic growth while exports and economic openness are positively related to the economic growth of India.

5) Tiwari (2022) examined the exports performace and its impact on India's GDP during the post economic reform period 1991-2015. The author applied Augmented Dicky Fuller Test to check co-integration in the study. Multiple regression results of the study show that there is causal relationship between export products, GDP, import partners of the country and number of tariff agreement.

III. OBJECTIVES OF THE STUDY

a) To study the trends in GDP, exports and imports in India in the post liberalization period.

b) To study the impact of foreign trade on India's economic growth during the period under study.

IV. HYPOTHESIS OF THE STUDY

1) H_o: Foreign trade does not influence economic growth.

V. DATA SOURCE AND METHODOLOGY

The study is based on secondary data. The data have been collected from different issues of Handbook of Statistics on Indian Economy by RBI. The present study investigates the impact of foreign trade on economic growth by applying regression analysis. Existing literature in this field reveals different foreign trade related variables contributing to economic growth. Based on literature review, the variables used in the study are exports, imports, trade openness as independent variables and real GDP as dependent variable. The econometric model is specified as follows:

$$GDP_t=\alpha+ß_1Exp_t+ ß_2Imp_t+ ß_3TO_t+e_t$$

Where GDP_t=Real Gross Domestic Product in period t

Exp_t=Exports in period t

Imp_t=Imports in period t

TO_t=Trade Openness in period t

α =intercept

$ß_1$=regression coefficient of Exports

$ß_2$=regression coefficient of Imports

$ß_3$=regression coefficient of Trade Openess

e= error term

Here, trade openness is defined as exports plus imports divided by GDP. The study covers the period 1991 to 2022. As the present study uses time series data, Augmented Dickey Fuller Test has been applied to check stationary.

VI. RESULTS AND DISCUSSION

Gross Domestic Product (GDP) is an important index of economic growth. A country's economic conditions are reflected in its GDP position. Table 1 presents GDP at constant prices in the post reform period (1991-2022) in India.

Table 1: Trends in Real GDP, 1991-2022

Year	GDP at Constant Prices (Amount in Crore)	Year	GDP at Constant Prices (Amount in Crore)	Year	GDP at Constant Prices (Amount in Crore)
1991-92	1367171	2003-04	2775749	2015-16	11369493
1992-93	1440503	2004-05	2971464	2016-17	12308193
1993-94	1522343	2005-06	3253073	2017-18	13144582
1994-95	1619694	2006-07	3564364	2018-19	13992914
1995-96	1737740	2007-08	3896636	2019-20	14534641
1996-97	1876319	2008-09	4158676	2020-21	13687118
1997-98	1957031	2009-10	4516071	2021-22	14925840
1998-99	2087827	2010-11	4918533	2022-23	16006425
1999-00	2254942	2011-12	8736329		
2000-01	2348481	2012-13	9213017		
2001-02	2474962	2013-14	9801370		
2002-03	2570935	2014-15	10527674		

Source: Different Issues of Handbook of Statistics on Indian Economy by RBI

Table 2: Annual Growth Rate of GDP, 1991-2022

Year	Growth Rate	Year	Growth Rate	Year	Growth Rate
1991-92	1.43	2003-04	7.96	2015-16	7.99
1992-93	5.36	2004-05	7.05	2016-17	8.25
1993-94	5.68	2005-06	9.47	2017-18	6.79
1994-95	6.39	2006-07	9.56	2018-19	6.45
1995-96	7.28	2007-08	9.32	2019-20	3.87
1996-97	7.97	2008-09	6.72	2020-21	-5.83
1997-98	4.30	2009-10	8.59	2021-22	9.05
1998-99	6.68	2010-11	8.91	2022-23	7.23
1999-00	8.00	2011-12	77.62*		
2000-01	4.14	2012-13	5.45		
2001-02	5.38	2013-14	6.38		
2002-03	3.87	2014-15	7.41		

* GDP up to 2010-11 based on 2004-05 prices and 2011-12 onwards based on 2011-12 prices
Source: Author's calculation

It is evident from the table 2 that India has much success in growth of GDP. In most years under study, GDP growth rate was higher than 5 percent. From 2005-06 to 2007-08, India's GDP growth rate was over 9 %.

Table 3: Trends in Exports and imports, 1991-2022

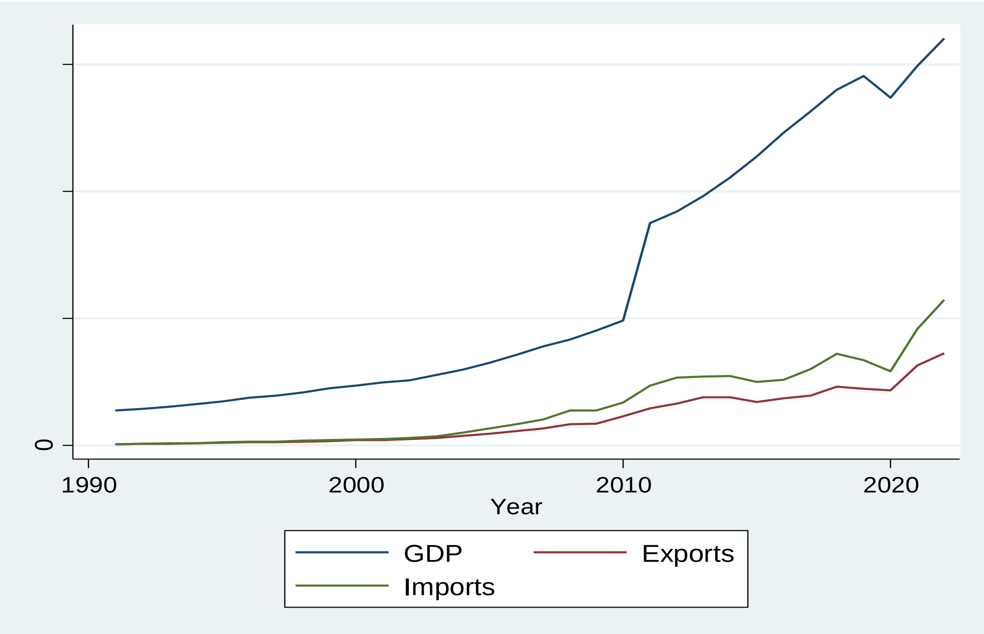
Year	Exports (Amount in Crore)	Growth Rate	Imports (Amount in Crore)	Growth Rate	Total (Amount in Crore)
1991-92	44042	-	47851	-	91893
1992-93	53688	21.901821	63375	32.442373	117063
1993-94	69751	29.9191626	73101	15.346746	142852
1994-95	82674	18.5273329	89971	23.07766	172645
1995-96	106353	28.6414108	122678	36.352825	229031
1996-97	118817	11.7194625	138920	13.239538	257737
1997-98	130101	9.49695751	154176	10.98186	284277
1998-99	139753	7.41885151	178332	15.667808	318085
1999-00	159561	14.1735777	215237	20.694547	374798
2000-01	203571	27.5819279	230873	7.2645502	434444
2001-02	209018	2.67572493	245200	6.2055762	454218
2002-03	255137	22.0646069	297206	21.209625	552343
2003-04	293367	14.9841066	359108	20.827978	652475
2004-05	375340	27.9421339	501065	39.530448	876405
2005-06	456418	21.6012149	660409	31.801064	1116827
2006-07	571779	25.2752959	840506	27.270525	1412285
2007-08	655864	14.7058566	1012312	20.440782	1668176
2008-09	840755	28.190448	1374436	35.771975	2215191
2009-10	845534	0.56841767	1363736	-0.7785011	2209270
2010-11	1142922	35.1716194	1683467	23.445227	2826389
2011-12	1465959	28.2641335	2345463	39.323373	3811422
2012-13	1634318	11.484564	2669162	13.80107	4303480
2013-14	1905011	16.5630557	2715434	1.7335778	4620445
2014-15	1896445	-0.4496562	2737087	0.7974048	4633532
2015-16	1716384	-9.49465974	2490306	-9.0161913	4206690
2016-17	1849434	7.75176184	2577675	3.508364	4427109
2017-18	1956515	5.78993357	3001033	16.424026	4957548
2018-19	2307726	17.9508463	3594675	19.781255	5902401
2019-20	2219854	-3.80773107	3360954	-6.5018673	5580808
2020-21	2159043	-2.73941439	2915958	-13.240169	5075001
2021-22	3147021	45.7599964	4572775	56.81896	7719796
2022-23	3620631	15.0494706	5733959	25.393421	9354590

Source: Different Issues of Handbook of Statistics on Indian Economy by RBI

A perusal of the above table 3 reveals that both exports and imports have increased considerably in the post reform period. Except the COVID-19 pandemic period (2019-20 to 2020-21), India has experienced sustained growth in exports and imports in the last three decades. It is noticed that COVID-19 pandemic adversely affected India's external sector. Between 2019-20 and 2020-21 i.e. in times of pandemic, total volume of trade (exports plus imports) declined. However, India's external sector got momentum again in 2021-22 showing sign of recovery from COVID-19 pandemic shock as the country recorded increase in exports and imports.

It is also seen from the table that exports are lower than imports in India implying that India's trade balance remains negative in the post liberalization period. This may be due to the fact that India is one of the largest importers of crude oil. India mainly meets its energy needs through imports.

Figure 1: Trends in GDP, Exports and Imports, 1991-2022



Source: Author's calculation

It is seen from the above figure that GDP, exports and imports show increasing trend during the period under study.

Regression Results

Multicollinearity has been checked before regressing the variables. Table 4 displays correlation matrix (multicollinearity).

Table 4: Correlation Matrix (Multicollinearity)

Variables	Exports	Imports	Trade Openness
Exports	1.0000	-	-
Imports	0.9969	1.0000	-
Trade Openness	0.9998	0.9971	1.0000

Source: Author's calculation

Here, we have found that the independent variables exports and imports are highly correlated (r=0.9969). The correlation is almost perfect. Exports are also highly correlated with trade openness with r=0.9998 (almost perfect correlation). Further, there exists very high correlation (almost perfect correlation) between imports and trade openness (r=0.9971). Because of collinearity detected, the variables imports and trade openness are omitted from the model specified earlier. After omission of imports and trade openness because of collinearity problem, the model includes two variables-GDP as dependent variable and exports as independent variable.

We know that regression on time series data assumes that the series is stationary. Stationary time series data give better prediction. In reality, most time series is non-stationary. As the study is based on time series data, stationarity check has been conducted before regression analysis. Because regression of nonstationary series leads to spurious regression. Keeping this in mind, we conducted Augmented Dickey Fuller Test for our GDP (d1gdp) and exports series (d1exports) at first difference in STATA 11.

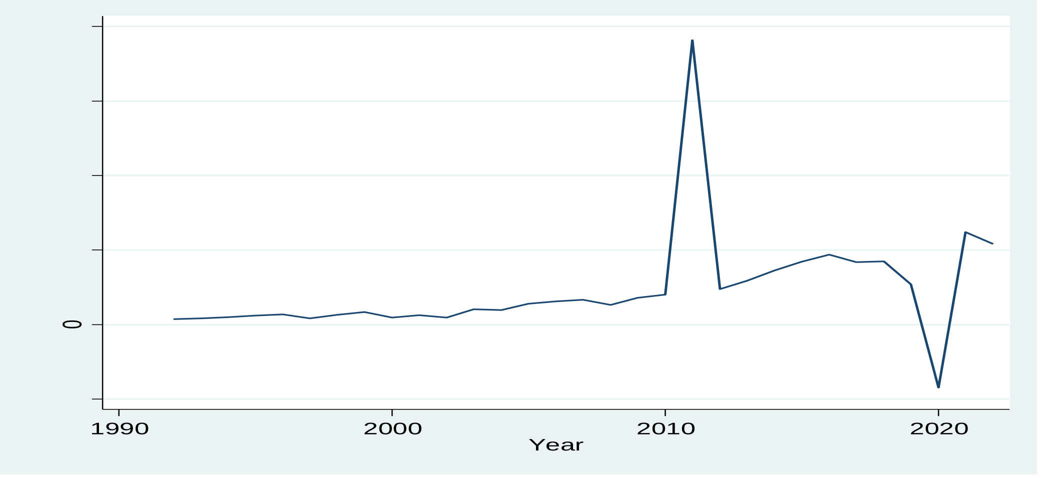
The results of Augmented Dickey Fuller Test are shown in table 5. A perusal of table 5 reveals that ADF statistic for GDP at first difference is larger negative number than the critical value at 5 percent. Hence, the null hypothesis of ADF test of a unit root is rejected and the alternative hypothesis is accepted. i.e. GDP is stationary at first difference. Likewise, Augmented Dickey Fuller test of unit root for exports at first difference (d1exports) has been applied to check stationarity. It has been found that ADF statistic for first differenced exports is larger negative number than critical value at 1 percent. Here, the null hypothesis of unit root is rejected. This implies that the exports series are also stationary at first difference. Moreover, the coefficients of trend for GDP and exports are significant at 10 percent and 5 percent respectively. But the constant is not significant for both the series.

Table 5: Augmented Dickey Fuller Test for Unit Root

Variables	ADF Test Statistic	Critical Values			Trend			Constant		
		1%	5%	10%	Co-Efficient	t Value	p Value	Co-Efficient	t Value	p Value
d1gdp	-3.856	-4.343	-3.584	-3.230	35036.22	1.89	0.070	-8029.965	-0.03	0.979
d1exports	-4.404	-4.343	-3.584	-3.230	13770.66	2.90	0.008	-46463.03	-0.61	0.547

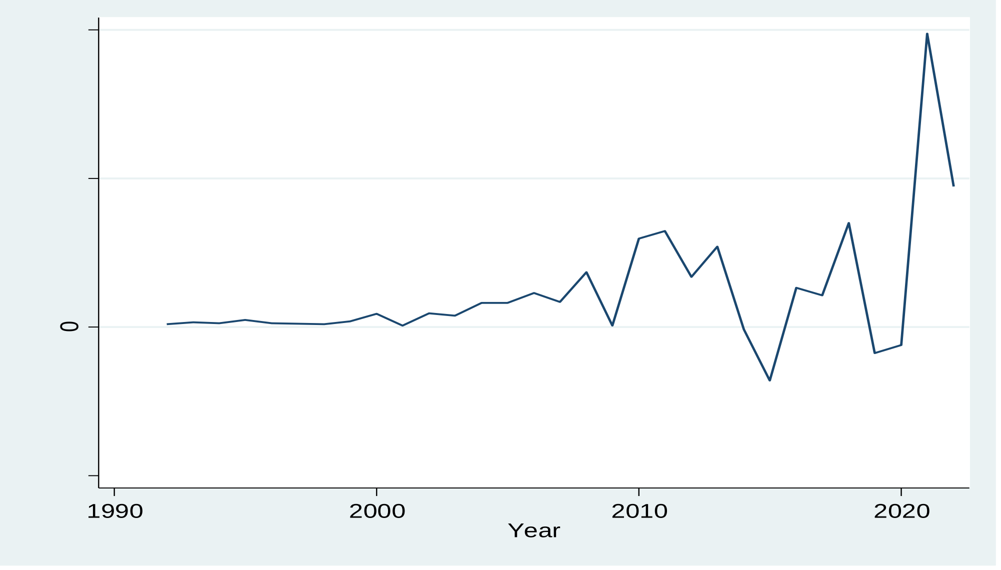
Source: Author's calculation

Figure 2: Stationary Time Series of GDP at First Difference



Source: Author's calculation

Figure 3: Stationary Time Series of Exports at First Difference



Source: Author's calculation

Regression analysis has been done taking first differenced GDP as dependent variable and first differenced exports as independent variable. Regression results displayed in table 6 show that the coefficient of exports is 1.61 and is positive. It is significant at less than 5 percent. This implies that exports have positive impact on GDP in India in the post reform period. There exists significant relationship between GDP and exports. This finding supports empirical literature that exports have positive influence on GDP.

The R^2 value has been found to be 0.1878 suggesting that around 19% variation in dependent variable GDP is explained by variation in independent variable exports. Thus, we reject our null hypothesis that foreign trade does not influence economic growth. F statistic which shows overall goodness of fit of the model is significant at less than 5 percent. The constant of the model is also significant at 10 percent.

Table 6: Regression of GDP at first difference on exports at first difference

Dependent Variable: d1gdp
Independent Variable: d1exports
R^2= 0.2148
Adjusted R^2= 0.1878
F Statistic= 7.94**
Durbin-Watson d-statistic (2, 31) = 1.950334

Variables	Coefficient	t value	p value
Constant	286386.8***	2.10	0.045
d1exports	1.610826**	2.82	0.009

Source: Author's calculation
Note: ** significant at less than 5 percent level of significance and *** significant at less than 10%

VII. SUGGESTIONS

The following measures may be taken to increase exports and improve trade balance in India:

1. Separate policy should be formulated for sectors having high exports potential.
2. Lower exchange rate can improve India's trade balance. So a suitable lower exchange rate policy is need of the hour.
3. Domestic production base should be strengthened by offering more exports promotion incentives.
4. More incentives should be provided for development of small businesses with export potential.
5. Reduction in Govt. expenditure, higher interest rates and higher taxes can reduce the demand for imports thereby improving trade balance.

VIII. CONCLUSION

India has achieved much success in GDP growth which is an important indicator of economic development in the post reform period. Today, India is one of the fastest growing economies in the world. But India still has to go further as far as GDP growth is concerned. The study has empirically tested the relationship between exports and economic growth. The finding of the study is that exports have positive and significant influence on economic growth. Moreover, though exports and imports have substantially increased in recent times in India, the country has trade deficit. The deficit in trade can be reduced by maintaining lower exchange rate, demand for imports and boosting exports. A favourable trade balance can play an important role in economic growth in India.

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