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RESEARCH ARTICLE

AN ANALYSIS OF CAUSAL RELATIONSHIP BETWEEN MAJOR ECONOMIC VARIBALES

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Abstract

India contemplates Atma nirbharta, the economic policy should also strive to promote export dynamism and propel Indian economy to the path of long term sustained economic growth and development.Exports and imports are one of the fundamental drivers of engine of growth for any economy. It can have an impact on country' s Gross Domestic Product (GDP), exchange rate, level of inflation as well as interest rates.An Attempt has been made whether Export have causal relationship on GDP or Import have causal relationship on GDP, to conclude import increases, which may lead to increases GDP, when import materials can be value added and finally it increases GDP. In case of exports there is significant impact of exports on GDP but GDP does have significant impact on Exports. India, unlike the Asian Tigers, has never managed to be an export-driven economy.

Introduction:-

In the event of combating slowdown in Indian economy, the union government of India launched the Atma-NirbharAbhiyaan. The coverage of Atma-nirbharstrive to reorient the economic structure towards ensuring "self-sufficiency". Under this, the union government encourages citizens to buy Indian, and the setting up of targets towards building self-reliance in certain sectors. Apart from it, the Abhiyan also encourages more public spending, tax cuts to enhance private consumption and private investment, and/or financial sector reform to boost private investment.However, these initiatives have their own limitations. Therefore, as India contemplates Atmanirbharta, the economic policy should also strive to promote export dynamism and propel Indian economy to the path of long term sustained economic growth and development.

Exports and imports are one of the fundamental drivers of engine of growth for any economy. It can have an impact on country's Gross Domestic Product (GDP), exchange rate, level of inflation as well as interest rates. A robust foreign trade data is beneficial as it leads to enhance in job opportunities, increases foreign currency reserves, boosts manufacturing and also increases government's revenue collection. It is also a good means by which a country can bring itself out of the recession phase. Besides, it also plays a key position in strengthening the domestic manufacturing units by scaling up their quality to make India made merchandise compete and stand out against world peers.

India's Exports

All the evidence across the globe and in India has shown that rapid and sustained economic growth requires export dynamism. Before1991, a 3.5% growth rate was associated with export

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growth of about 4.5%.However; India's GDP growth of over 6% after 1991 was associated with real export growth of about 11%. Also, and growth rates of developing countries reflect that it is difficult to achieve quick, sustained, and high rates of economic growth, by solely focusing on domestic demand/consumption-led growth. Moreover, if domestic producers are competitive internationally, they will be competitive domestically and domestic consumers and firms will also benefit. However, the reverse is not true i.e. being competitive only domestically is no guarantee of efficiency and low cost.

Increasing India's share in world exports and FDI

The path taken by India is not about being self-contained but strengthening our position in global supply chains. Bolstering international trade and investments is key role for India to lift its GDP growth and per-capita income. Pertinent to note is that whilst India is currently the world's fifth-largest economy, its GDP per capita is a fifth of the world mean.

Globally, trade and Foreign Direct Investment (FDI) have been crucial vehicles for promoting economic growth and reducing poverty. ArvindPanagariya, former vice chairman, NITI Aayog, in his book "Free Trade and Prosperity (2019)" analyses performance of more than 200 countries between 1960 and 2013, demonstrating a causal relationship between trade and per capita income. The findings show that the countries that experienced intensive growth for a period always maintained a high and/or expanding trade to GDP ratio. Similarly, in the case of FDI too, many studies have established a strong positive long-term correlation with GDP per capita.

However, the share of India's exports of goods and services in GDP has declined steadily from 24.5% in 2011 to 18.7% in 2019. At 13th position globally, India has a share of 2.2% in world exports of goods and services—nearly a fifth of China (10.6%). It is noteworthy to mention that India's trade to GDP ratio has surpassed that of China since 2008, but our imports outweigh exports significantly. A renewed focus is required to rejuvenate exports with a special emphasis on high potential manufacturing sectors—electronics, apparels, pharma, among others. Strong comparative advantage in services sector suggests focus can be on high-value services exports in ICT, healthcare, and business and professional services.

With regard to FDI, an analysis of G-20 countries reveals that India achieved the highest growth of 20.3% (CAGR) in FDI inflows between 1990 and 2019. However, in value terms, India ranked 9th globally in 2019, which shows further potential to move up the global order.

India's Imports

The importance of building up and being able to sustain a higher import cover had been recognized by India's policy makers even prior to the 1991 crisis. India had foreign exchange reserves which meant to cover import costs for two years. But, that was just sufficient to cover close to two and half months of imports only, because of crisis. India's Foreign exchange reserve went up from $ 2.2 billion in 1990-1991 to $20.8 billion in 1994-95. During the currency crisis of 2013, when foreign exchange reserves fell to about $275 billion, import cover declined to about seven months. Presently, country's foreign exchange reserves, which crossed $360 billion, could cover imports for 10.9 months.

India's GDP

In January 2015, the government moved to a new base year of 2011-12 from the earlier the base year of 2004-05 for national accounts. The base year of national accounts had been revised earlier in January 2010.In the new series, the Central Statistics Office (CSO) did away with Gross Domestic Product (GDP) at factor cost and adopted the international practice of valuing industry-wise estimates as gross value added (GVA) at basic prices. With the move to the new base year, the growth rate of the economy for 2013-14 was estimated at 6.9%; it was 4.7% on the 2004-05 base. Similarly, the growth rate for 2012-13 was revised upwards to 5.1% from 4.5%. As per the data released by the National Statistical Office, India's Gross Domestic Product (GDP) growth slipped to a 26-quarter low of 4.5% in the second quarter (Q2 i.e. July-September) of the financial year 2019-20.The growth is the lowest in six years and three months with the previous low recorded at 4.3% during the January - March 2013.In terms of quarterly growth, India has lost the tag of the fastest growing economy to China which posted a growth of 6% in the September quarter. Reasons for fall in growth include contraction in manufacturing, weak investment, and lower

consumption demand. The global economy is also facing a slowdown and this has hurt demand for India's exports, which have slumped in recent months.

Objectives Of The Study:-

1. To analyses India's Export Causes impact on GDP
2. To investigate India' Import causes impact on GDP

Hypothesis

H1: There is no significant difference of India's Export and GDP.
H2: There is no significant difference of India's Import and GDP.

Data Source And Methodology:-

The source of secondary data used in this study has been collected from RBI handbook of Statistics. The methodology adopted in this study is Granger Causality test has been applied to Find the export lead to increase GDP, Import leads to Increase GDP or Vice Versa.

This paper used the ADF (2difference) test for data stationary

Null Hypothesis: EXPORT has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.949927	0.0053
Test critical values:	1% level		-3.689194	
	5% level		-2.971853	
	10% level		-2.625121	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(EXPORT)				
Method: Least Squares				
Sample (adjusted): 1993 2020				
Included observations: 28 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXPORT(-1)	-0.840896	0.212889	-3.949927	0.0005
C	7.364202	5.611936	1.312239	0.2009
R-squared	0.375029	Mean dependent var		-1.806071
Adjusted R-squared	0.350992	S.D. dependent var		33.55878
S.E. of regression	27.03531	Akaike info criterion		9.500914
Sum squared resid	19003.61	Schwarz criterion		9.596071
Log likelihood	-131.0128	Hannan-Quinn criter.		9.530005
F-statistic	15.60192	Durbin-Watson stat		1.805129
Prob(F-statistic)	0.000533			

Table 1:- India'sExports and GDP.

Year	Import (US $Billion)	Annual Growth Rate	GDP (US $Billion	Annual Growth Rate
1991	17.90		270.11	
1992	20.71	16%	288.21	6%
1993	22.24	7%	279.30	-3%
1994	26.33	18%	327.28	15%
1995	31.70	20%	360.28	9%
1996	33.47	6%	392.90	8%
1997	34.79	4%	415.87	6%
1998	33.21	-5%	421.35	1%
1999	36.92	11%	458.82	8%
2000	42.36	15%	468.39	2%
2001	43.88	4%	485.44	4%
2002	50.10	14%	514.94	6%
2003	59.36	18%	607.70	15%
2004	75.90	28%	709.15	14%
2005	100.35	32%	820.38	14%
2006	121.20	21%	940.26	13%
2007	145.90	20%	1216.74	23%
2008	181.86	25%	1198.90	-1%
2009	176.77	-3%	1341.89	11%
2010	220.41	25%	1675.62	20%
2011	301.48	37%	1823.05	8%
2012	289.56	-4%	1827.64	0%
2013	336.61	16%	1856.72	2%
2014	317.54	-6%	2039.13	9%
2015	264.38	-17%	2103.59	3%
2016	260.33	-2%	2294.80	8%
2017	294.36	13%	2651.47	13%
2018	322.49	10%	2702.93	2%
2019	323.25	0%	2831.55	5%
2020	275.49	-15%	2667.69	-6%

Null Hypothesis: GDP has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.852197	0.0068
Test critical values:	1% level		-3.689194	
	5% level		-2.971853	
	10% level		-2.625121	
*MacKinnon (1996) one-sided p-values.				

Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Sample (adjusted): 1993 2020				
Included observations: 28 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP1(-1)	-0.822329	0.213470	-3.852197	0.0007
C	68.72806	28.67676	2.396646	0.0240
R-squared	0.363360	Mean dependent var		-6.498571
Adjusted R-squared	0.338874	S.D. dependent var		136.6654
S.E. of regression	111.1221	Akaike info criterion		12.32789
Sum squared resid	321051.3	Schwarz criterion		12.42304
Log likelihood	-170.5904	Hannan-Quinn criter.		12.35698
F-statistic	14.83942	Durbin-Watson stat		1.813795
Prob(F-statistic)	0.000687			

Pairwise Granger Causality Tests			
Sample: 1991 2020			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause EXPORT	28	3.71035	0.0401
EXPORT does not Granger Cause GDP		0.54991	0.5844

H1: There is no significant difference Exports on GDP.
Ho1 There is significant difference of Exports on GDP

The p - value is less than 0.05 and hence the null hypothesis is rejected. Accept the alternative hypothesis there is significant effect of GDP on Export.

But the p - value is more than 0.05 and hence the null hypothesis is cannot rejected But export do not have significant impact on GDP.

Table 2:- India's Imports and GDP.

Year	Import (US $Billion)	Annual Growth Rate	GDP (US $Billion	Annual Growth Rate
1991	19.51		270.11	
1992	24.45	20%	288.21	6%
1993	23.30	-5%	279.30	-3%
1994	28.65	19%	327.28	15%
1995	36.59	22%	360.28	9%
1996	39.11	6%	392.90	8%
1997	41.43	6%	415.87	6%
1998	42.42	2%	421.35	1%
1999	50.01	15%	458.82	8%
2000	52.94	6%	468.39	2%
2001	50.67	-4%	485.44	4%

2002	57.45	12%	514.94	6%
2003	72.43	21%	607.70	15%
2004	98.98	27%	709.15	14%
2005	140.86	30%	820.38	14%
2006	178.21	21%	940.26	13%
2007	218.65	18%	1216.74	23%
2008	315.71	31%	1198.90	-1%
2009	266.40	-19%	1341.89	11%
2010	350.03	24%	1675.62	20%
2011	462.40	24%	1823.05	8%
2012	488.98	5%	1827.64	0%
2013	466.05	-5%	1856.72	2%
2014	459.37	-1%	2039.13	9%
2015	390.74	-18%	2103.59	3%
2016	356.70	-10%	2294.80	8%
2017	444.05	20%	2651.47	13%
2018	507.62	13%	2702.93	2%
2019	478.88	-6%	2831.55	5%
2020	367.98	-30%	2667.69	-6%

Null Hypothesis: IMPORT has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.385435	0.0203
Test critical values:	1% level		-3.689194	
	5% level		-2.971853	
	10% level		-2.625121	
*MacKinnon (1996) one-sided p-values.				

Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(IMPORT1)				
Method: Least Squares				
Sample (adjusted): 1993 2020				
Included observations: 28 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMPORT1(-1)	-0.741748	0.219100	-3.385435	0.0023
C	8.032021	9.892210	0.811954	0.4242
R-squared	0.305948	Mean dependent var		-4.137143

Adjusted R-squared	0.279254	S.D. dependent var		57.44219
S.E. of regression	48.76657	Akaike info criterion		10.68072
Sum squared resid	61832.63	Schwarz criterion		10.77587
Log likelihood	-147.5300	Hannan-Quinn criter.		10.70981
F-statistic	11.46117	Durbin-Watson stat		1.659802
Prob(F-statistic)	0.002266			

Pairwise Granger Causality Tests			
Sample: 1991 2020			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause IMPORT	28	13.4222	0.0001
IMPORT does not Granger Cause GDP		1.02619	0.3742

H2: There is no significant difference Imports on GDP.
Ho2; There is significant difference of Imports on GDP

The p - value is less than 0.05 and hence the null hypothesis is rejected. Accept the alternative hypothesis there is significant effect of GDP on Import.

The p - value is less than 0.05 and hence the null hypothesis is rejected But import have significant impact on GDP.

Conclusion:-

The conclude import increases, which may lead to increases GDP, when import materials can be value added and finally it increases GDP. In case of exports there is significant impact of exports on GDP but GDP does have significant impact on Exports. India, unlike the Asian Tigers, has never managed to be an export-driven economy. Since the economic reforms were initiated in 1991, private investment and domestic consumption — along with government spending — have primarily driven India's economic growth. Merchandise exports have played only a supporting role.

When a country is importing goods, this represents an outflow of funds from that country. Local companies are the importers and they make payments to overseas entities, or the exporters. A high level of imports indicates robust domestic demand and a growing economy. If these imports are mainly productive assets, such as machinery and equipment, this is even more favorable for a country since productive assets will improve the economy's productivity over the long run.

A healthy economy is one where both exports and imports are experiencing growth. This typically indicates economic strength and a sustainable trade surplus or deficit. If exports are growing, but imports have declined significantly, it may indicate that foreign economies are in better shape than the domestic economy. Conversely, if exports fall sharply but imports surge, this may indicate that the domestic economy is faring better than overseas markets.

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