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An Analysis of Trade, Economic Growth and Inequalities in India Since 2000

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ABSTRACT
The impact of globalization on income equality has become a serious concern for many countries. Evidences shows that trade have increased the income inequalities, especially in developing nations like India. The study attempts to analyze the trade openness, economic growth and income inequality in India. Trade leads to increase in the per capita GDP. It becomes important to check whether the trade is increasing income of all citizens or is it increasing the inequalities. Since 2000, total trade has increased almost 10 times and total imports have increased about 15 times but GDP per capita increased only about 2 times. Results shows that trade have increased the income inequalities in India since 2000.
Keywords*: Trade, Income inequality, Economic growth, GINI.*

I. INTRODUCTION

Financial crisis and pressure from international organizations like World Bank and International Monetary Fund (IMF) lead to trade liberalization in 1991, in India. Export led growth strategy has gain great importance since 1991. A lot of reform step has been taken since the new trade liberalization policy 1991 to reduce the import duties, to devaluation of Indian currency, to increasing private sector's role in public sector, to alleviate adverse BOP (Balance of Payment), stable domestic price level etc. in 1990s trade share has not seen drastic changes but after 2000s trade activities has been rapidly increasing due to tariff relaxation and other export led trade improvement measures.

Trade openness generally refers to abolition of trade restrictions to international trade in goods and services, resulting to integration of domestic markets into a single window market **(Mahesh, 2016)**. Since the globalization, importance of trade openness has been increasing. Economic openness is the degree at which non-domestic transitions take place. Globalization is increased and intensified flow of goods, services, information, capital, idea, and people between the countries which integrates economic, social and cultural activities **(Singh, S., 2017).**

Trade openness and free trade have become one of the priorities of the country's trade policies. Opening domestic trade to the world economies also opens many economic opportunities for the country. Trade contributes in the economic growth and development of a nation, both developed and developing countries in more or less extent. Trade openness also gives comparative advantage and efficient allocation of recourses. Rapid growth in trade also leads to the increased national income. Economy with surplus of some recourses, can export to other country to earn income. Country with scarcity of some recourses can import the good or service in order to increase the economic activities and technological advancement. The trade liberalization policies initiated by Government of India in 1991 have raised the trade activities. Trade openness is an important part of structural change for development. It is assumed that the trade openness leads to economic growth and is also experienced as rapid GDP growth and technological advancement. The paper studies trade, economic growth and income inequality. Trade openness increases the per capita GDP.

OBJECTIVES
- To analyze the relationship between trade and economic growth in India since 2000
- To check the effect of trade on income inequality in India

II. DATA BASE AND METHODOLOGY

Data is analyzed from year 2000-01 to 2019-20. To analyze the trade openness, India's total trade (in Rs. Lacs), India's total import (Rs. Lacs), growth rate of export, growth rate of import, and trade balance (total export-total imports) is taken. To measure the Gross Domestic Product of India, Gross Domestic Product growth rate and per capita GDP ($) is taken. The effect of trade on economic inequality is studied by using the GINI coefficient. In this paper, secondary source of data is used for the analysis purpose. Data for total trade, total Import, export growth rate, import growth rate and balance of trade is taken from the India' Ministry of commerce and industry. Growth rate of GDP and per capita GDP data is taken form worldometer and ceicdata. GINI coefficient data is taken from the World Bank website.

III. REVIEW OF LITERATURE

The impact of globalization on income equality has become a serious concern for many countries **Urata and Narjoko (2017).** Evidences shows that trade have increased the income inequalities, especially in developing nations like India. Trade openness increased the income level but it also increased the income inequality, found in an analysis of 60 countries. Trade can increase income inequalities in developing countries but the opposite results were found for developed nations as it reduced the inequalities in developed nations (**Aradhyula et al, 2007).** Trade with high income nations worsens income distribution in developing countries. Trade effect on income distribution also depends on technological differentials and skill biasness. Technological advancement may shift labor demand in favor of skilled labor. This can increase the skill premium and thus more income inequalities. There is great potential for technological up-gradation in middle-income countries. Targeted and quality education and training can address the increasing skilled labor demand (**Meschi and Vivarelli, 2009).** International trade increased income inequality in the BRIC nations from 1991 to 2013. Real effective exchange rate increased GINI coefficient. Increase in per capita income decreased income inequality. The result found that the economic crisis have improved income equality. Trade and income distribution relation was found to be diverse and thus, trade liberalization should not be seen negatively, especially for developing countries (**Mahesh, 2011).** Both imports and exports have negative impact on income equality. (**Meschi and Vivarelli, 2009 and Mahesh, 2011).** Trade openness by developing nations narrowed the development gap that they had with developed nations. In some developing countries, trade increased the wage inequality, but in some countries, opposite of it was observed. Regional inequality was also observed for some and not for other countries. Inequalities are also influenced by labor market condition, capital inflow and reforms **(Urata and Narjoko, 2017).** Economic growth is directly associated with the human capital and physical capital, in the long run. Trade and economic growth are inversely related in long run, but in short run both are positively related (**Hye and lau, 2015)**. Pro-workers institutions and increased manufacturing penetration lead to increased use of contract labor in the manufacturing sector of India. Pro-labor institution and import leads to more use of contract labor (**Sen at al., 2013).** There was statistically significant positive effect of population density, energy consumption and economic growth on CO_2 emission, in the short run as well as in the long run. Population density had the most influence on CO_2 emission. It was suggested that there should be population stabilization policies, alternative energy sources and green technologies for sustainable growth **(Ohlan, 2015).**

The effect of trade openness can be different for different countries. There is direct association between trade openness and income inequality in the transition nations, because of underdeveloped welfare policies and labor market that exists in the transition nations, and they could not keep up with the rapid trade openness process. Transition economies do not have education and redistribution programs (**Dorn, 2022).** Trade openness has reduced income inequality across Brazilian states. This is because of trade composition and reallocation of some industrial activities to peripheral regions. In case of India, trade has resulted in rise in income inequality. The reason for India's case was given as shift in export from agriculture to industrial products. FDI have contributed to raise inequality as it was concentrated in richer states in both the nations (**Daumal, 2013). Habibi (2015)** found long run causality between trade openness and growth runs in 4 panel groups classified as low, lower middle, upper middle and high income level. The bidirectional causalities were observed in all panels expect low income groups. Trade openness and economic growth affects each other in low income economies.

ANALYSIS OF TRADE AND ECONOMIC GROWTH IN INDIA SINCE 2000

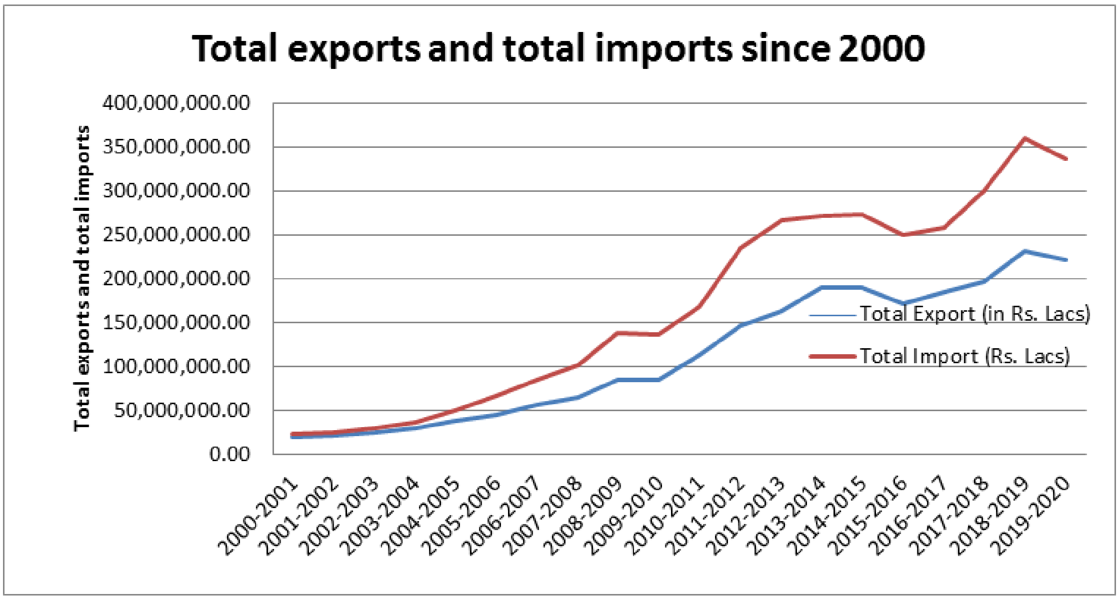
India's total trade (in Rs. Lacs), India's total import (Rs. Lacs), percentage growth in export, percentage growth in import, and India's trade balance (total export- total imports) is used to show the recent trends in trade. To measure the GDP of India, GDP growth rate and GDP per capita ($) is taken. The effect of trade openness and GDP growth on income inequality is analyzed by using GINI coefficient. GDP per capita shows the increase in the income level of population. Related data is given below in the tabular form:

Table 1:

year	Total Export (in Rs. Lacs)	%Growth in export	Total Import (Rs. Lacs)	%Growth in import	Trade Balance	GDP %	GDP per capita ($)	GINI
2000-2001	20,357,101.09	27.58	23,087,276.04	7.12	-2,730,174.95	3.84	827	31.7
2001-2002	20,901,797.34	2.68	24,519,971.86	6.21	-3,618,174.52	4.82	852	31.7
2002-2003	25,513,727.66	22.06	29,720,587.40	21.21	-4,206,859.74	3.8	869	31.7
2003-2004	29,336,674.75	14.98	35,910,766.37	20.83	-6,574,091.62	7.86	922	31.7
2004-2005	37,533,952.62	27.94	50,106,454.03	39.53	-12,572,501.41	7.92	979	34.4
2005-2006	45,641,786.15	21.6	66,040,890.33	31.8	-20,399,104.18	9.28	1040	34.4
2006-2007	57,177,928.52	25.28	84,050,631.33	27.27	-26,872,702.81	9.26	1107	34.4
2007-2008	65,586,352.18	14.71	101,231,169.93	20.44	-35,644,817.75	9.8	1174	34.4
2008-2009	84,075,505.87	28.19	137,443,555.45	35.77	-53,368,049.58	3.89	1193	34.4
2009-2010	84,553,364.38	0.57	136,373,554.76	-0.78	-51,820,190.38	8.48	1268	35.4
2010-2011	113,696,426.38	34.47	168,346,695.57	23.45	-54,650,269.19	10.26	1358	35.4
2011-2012	146,595,939.96	28.94	234,546,324.45	39.32	-87,950,384.49	6.64	1410	35.7
2012-2013	163,431,828.96	11.48	266,916,195.69	13.8	-103,484,366.73	5.46	1469	35.7
2013-2014	190,501,108.86	16.56	271,543,390.74	1.73	-81,042,281.88	6.39	1545	35.7
2014-2015	189,634,841.76	-0.45	273,708,657.84	0.8	-84,073,816.08	7.41	1640	35.7
2015-2016	171,638,440.44	-9.49	249,030,553.78	-9.02	-77,392,113.34	8.15	1752	35.7
2016-2017	184,943,355.34	7.75	257,767,536.68	3.51	-72,824,181.34	7.11	1874	35.7
2017-2018	195,651,452.80	5.79	300,103,343.35	16.42	-104,451,890.55	6.68	1987	35.7
2018-2019	230,772,619.38	17.95	359,467,461.19	19.78	-128,694,841.81	6.12	2009	35.7
2019-2020	221,985,418.10	-3.81	336,095,445.61	-6.5	-114,110,027.51	5.02	2139	35.7

Source: Ministry of commerce and industry, Worldometers, World Bank, ceicdata

Diagram 1: Total exports and total imports since 2000



In the diagram 1, we can see that since 2000, total imports and total exports are rapidly increasing. Red line shows the total imports and blue line shows the total exports. Values are in Rs. Lacs. Since 2000, total imports are more than the total exports. Total imports are more than the exports in all years and not even a single year, total exports exceed the total exports. The gap between these two is also increasing. But to achieve the economic independence and self resilient growth, exports should increase and gap should decrease.

Diagram 2: GDP per capita ($)

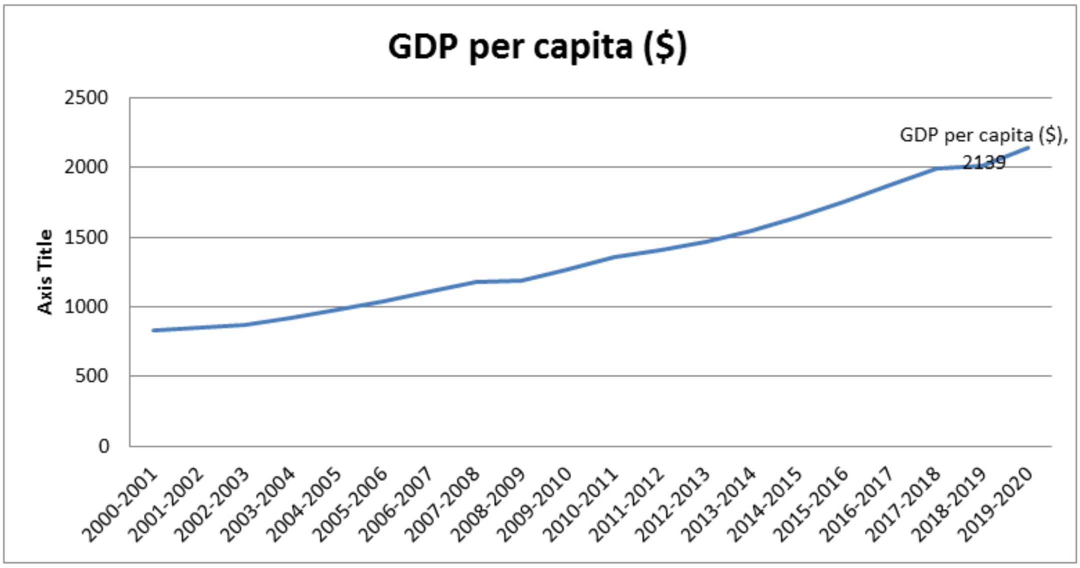


Diagram 2 shows that since 2000, GDP per capita of India is rapidly increasing. The trend line is of upward slope. There is no downfall in any years and per capita is increasing. This is a good sign for the country. In 2019-20, GDP per capita was $2139 USD.

Relationship between the trade and economic growth is checked with the help of correlation. Correlation coefficients "r" measures the relationship between the variables. Correlation determines whether the variables have strong or weak relationship with each other. In correlation, the value of r (correlation coefficient) is always between the ranges of +1 and -1. If the value if exactly negative (-) 1, it means there is perfect negative (inverse) relationship between the variables. If value is between 1 and 0.70, very strong linear relationship is there. 0.70 to 0.50 is moderate, 0.50 to 0.30 is weak and less than 0.30 is very weak relationship. If the value is equal to 0, there will be no correlation. Negative sign in the coefficient shows the negative relation. That means the variable moves in opposite direction of each other. Positive sigh is the direct relation which means when one variable increases, other also increases and in the graph, slope is upward. Correlation between all of the variables is given below in the form of a table.

Table 2:

	Total Export (in Rs. Lacs)	%Growth in export	Total Import (Rs. Lacs)	%Growth in import	Trade Balance	GDP %	GDP per capita ($)	GINI
Total Export (in Rs. Lacs)	100.0%							
%Growth in export	-	100.0%						
Total Import (Rs. Lacs)	99.6%	-41.6%	100.0%					
%Growth in import	-42.0%	81.9%	-	100.0%				
Trade Balance	-96.6%	36.7%	-98.6%	29.7%	100.0%			
GDP %	-3.7%	3.4%	-4.6%	13.8%	6.2%	100.0%		
GDP per capita ($)	96.6%	-50.1%	96.1%	-43.6%	-92.9%	1.4%	100.0%	
GINI	82.2%	-24.9%	83.4%	-15.6%	-83.6%	34.7%	79.8%	100.0%

Source: Ministry of commerce and industry, Worldometers, World Bank, ceicdata

Table 2 shows the correlation between the variables. We can see that the total imports and total exports of India have very strong positive relation. Since 2000, exports and imports are growing rapidly and the trade in India is increasing. Correlation between total import and export is almost 100% and it indicates high trade activities. Though total imports have high correlation with total export, but with the growth in export it is weak and negative. This means, if India has more capacity of producing and exporting the goods, total import from the other country will eventually decrease. That also indicated that to become self-sustain and to decrease imports, we need to increase the growth of production and exports.

Relation between total export and import growth rate is observed to be negative. More we export, less the import growth rate, even if the import and export growth is high. Very strong and positive relationship of import and export here shows the rapid increase in the trade activity, but more we import, less the export growth rate. Therefore, India should focus on more exports.

Trade balance has very strong but negative relation with the total export and total imports. Total imports and total exports are growing rapidly, but since the imports in India are more, trade balance is moving in the opposite direction and the trade balance is decreasing since 2000. Trade balance was negative and exports from India to the rest of the world were less. Growth of export and import had positive correlation with trade balance, because of the increased trade activities. There is very less relationship between the trade activities and the GDP rate of the country.

Although the GDP growth rate have very weak relationship with the trade activities, but the GDP per capita has high relationship with the trade activates. Very strong and positive relationship was there between the total exports and total imports on India since 2000. With increase in total exports and imports, economic activities in the country also increase. This leads to increase in the per capita income of the people. But the trade balance has negatively strong relation with GDP per capita. Growth rate of export and growth rate of import have negatively weak relation with GDP per capita. Relation between the GDP growth rate and GDP per capita was also observed to be positive but weak.

TRADE, ECONOMIC GROWTH AND INEQUALITY IN INDIA

To check the inequality in India, since 2000, GINI index is used. India is the country of rapid economic growth and increasing inequalities. The association between trade, economic growth and income inequality is shown by correlation is used that is given in the table 2. GINI coefficient is a measure to check the distribution of income and inequalities. Its value varies anywhere from 0 to 1. If the value is zero it means perfect equality is there. One indicated perfect inequality. A general rise in GINI coefficient reflects the government policies are not inclusive and more benefit is going to rich group and the gap of rich and poor is increasing. GINI coefficient since 2000 is given in the table 1.

Correlation between GINI coefficient and other variables is given in the Table 2. There is very strong and positive relationship between GINI coefficient and total export. Similar results were found between GINI coefficient and total imports. This shows that the increased trade activities lead to the increased inequality in India. Trade activities are giving benefit to the rich class more and less to poor. The gap between rich and poor has been increasing since 2000. Trade balance and GINI have negative strong correlation. GDP growth rate have weak positive and GDP per capita have strong positive correlation with GINI. Higher the GDP growth rate, higher will be GINI coefficient and higher the inequality was there since 2000. Strong positive GDP per capita and GINI correlation shows that this rise in per capita was only experienced by the rich class. The per capita income of poor has been decreasing since 2000. More the GINI value, higher the inequality. This positive correlation shows that although the GDP is growing rapidly and per capita income is increasing of the citizens, the benefit of countries progress is not reaching to the bottom class. Conflict between the per capita GDP and GINI is indicating widening inequalities in the nation.

IV. Result and implications

Trade induces the economic activities and income inequality is a development challenge. Since 2000, total trade has increased almost 10 times and total imports have increased about 15 times. But on the other side, trade balance has increased more than 40 times, since 2000. Imports have increased more than exports, which reflect the growing dependency of India on other countries to fulfill its citizens' needs. This also indicates the monetary outflow as a result of growing imports, which results in deficit budget and debt that the country has to pay. Trade balance was observed to be negative since 2000. But more unrealistic result was seen in the GDP per capita. Since 2000, GDP per capita increased only about 2 times. Exports are important to become a self-reliant country.

The value of GINI coefficient has increased from 31.7 in 2000 to 34.4 in 2004. In year 2009, GINI coefficient has increased to 35.4. Increase in GINI since 2000, indicates rise in inequalities. Trade alone does not ensure high GDP growth rate but the observation shows that it can have positive impact on per capita GDP. GINI coefficient and its relation with other variables indicate the growing inequalities.

V. CONCLUSION

Trade leads to efficient utilization of resources and provides more economic opportunities to a country. It also leads to rapid economic activities and increase in national income. The result shows that since 2000, total exports have increased by almost 10 times and total imports have increased about 15 times. Imports have grown more than the exports. But on the other side, trade balance has increased more than 40 times. Since 2000, GDP per capita has increased only about 2 times, which is very less. GINI coefficient has also increased indicating rising inequality. Although the relationship was weak between the GDP and export & import, overall positive effect of trade openness can be observed. GDP per capita has also been increasing and have positive relation with trade. But GINI coefficient relation with trade shows that the benefit is going to only rich class and inequalities are widening. Trade openness leads to economic growth, rise in income and utilization of resources. Therefore, government should focus on export promotion and insuring income equalities. The government should also ensure that the economic growth and trade does not lead to increase in income inequalities. Self-reliance and sustainable development should be the target of the government.

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