India's Trade Potential with China: A Gravity Model Approach

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Abstract

The objective of the study is tofind out thepotential of trade for India with its neighbor China by using gravity model analysis in a time series data set that covers the time period from 2001 to 2022. The results of OLS and GLS indicate that India's bilateral trade with China is positively impacted by GDP, PCGDP, POP of India whereas it is negatively affected by relative factor endowment and distance.The study revealed that bilateral trade is positively affected by common border, trade agreement (PTA) and common language which proves that language barrier does not impede trade between both nations. The study finds that there exists trade potential for India with China.

JEL Codes: F13, F14

Keywords: bilateral trade, gravity model, trade potential, trade relations, import intensity, export intensity

Introduction

International trade relations among countries become important in a rapidly evolving world. The advantages accrued throughinternational trade would be differentfor each country and based on their respectivestate of affairs including political, regional and economic. The political situation of the world is changing on an everyday basis and developing countries seek out new product export destinations to sustain in all situations (Irshad and Xin, 2018). Trade liberalization isvital in order to obtain sustainable development and the economic growth rate of the economy(Kumar, 2018).India is alsochanging its policy direction to obtain gains from trade through multilateral

and bilateral agreements.This brings into focus India's trade relations with its neighbor country i.e., China.

India and China are Asia's most populated countries. They have emerged as recent trendsetters in international relations. The Indo-China bilateral trade emerged not only as mutual confidence building procedures, but it also changed mutual insightsregarding each other which formed the base of their collective political interface (Singh, 2005). India and China have coexisted since ancient times as the world's two oldest civilizations and have enjoyed strong historical, and cultural links. The population of China is 1.4 billion and of India is1.3 billion which accounts for greater than thirty-seven percent of the whole world's population. Territory wise India is the world's seventh largest and China is fourth largest country in the world. India established trade relations with China in 1950 (Zhu, 2011). Trade relations have grown gradually and Most Favored Nation Agreement is signed in 1984. Themost-favored-nation (MFN) clause necessitatesacountryto extend similar trading terms to all its trading partners. From 1991 to 2001, bilateral trade has grown at a steady rate but 2001 mark an important milestone as in 2001, China became a member of the world trading order by joining World Trade Organization because by that time it has considerably reduced policy instruments such as quotas, tariffs, etc. and India also joined the integration process with free trade areas and duty exemptions in 2001 (Devadason, 2012). Their bilateral trade increased at an accelerating rate from 1995 to 2007 and there was evidence of deepening economic relationship between both nations (Whalley, 2015). India- China bilateral trade relations witnessed clearly visible fast rise of merchandise exports but it was not distributed across various commodities groups(Singla, 2015). Despite structural and institutional differences both India and China maintained the upward moving trend of growth of exports with each otherand with the remaining countries of the world. There existedhigh scope of intra-industry trade between both countries but it was contingent upon India's efforts to become a competitive economy (Ahmad et.al.2018).The beginning of the 20th century witnessed the rapid growth of India- China bilateral trade which pushed China to grow as India's biggestmerchandise trade partner by 2008 and this trend has continued till date. Their bilateral trade has recorded exponential growth since the last decade. From the period of 2015 to 2021, trade between India and China grew at an average yearly growth rate of 12.55 percent. In 2021, India's trade with China jumped to US$ 125.62 billion(Embassy of India, Beijing, 2023).India is expected to grow faster than China at 6.1 percent in 2023 (Johny, 2023). In this

context, there is a general agreement that market size, bilateral trade,economic dynamism and geographical proximity indicate that possibility for enhancement of India- China trade exists notwithstanding the concurrence of dissimilarities and similarities between both nations (Devadason, 2012). Both countries are undergoing economic transformation at an unprecedented scale and speed. There is immense potential in their bilateral relations which can add to the peace and stability in the region and reinforce one another's economic growth. Together they can also provide a new direction to the world economy (Raghurampatruni, 2012).

Review of Literature

Batra (2004) analyzed India's global trade potential using GNP, per capita income, population, distance, border adjacency, common language, colonial links, and regional trading arrangements variables. The study found that India has highest trade possibility with Asia Pacific region. At the country level, maximum trade potential is found with France, China, Italy and United Kingdom.

Singh (2005) found that trade has outpaced the political confidence-building measures and brought peace and transformation in border areas and aided in border negotiations. Increase in bilateral trade led to the emergence of new trends. Both countries have progressed to being investors not only with one another but also with the rest of the regions rather than being only recipients of foreign direct investment.

Kalirajan (2008) compared the performance of India-China exports and found that Indian exports performance is laggingbehind. China's exports performance indicated that benefits from globalization can be reaped if developing country can reduce "behind the border constraints" through appropriate policy measures. India needed to intensify its reform measures in order to catch up and overtake China.

Devadason (2012) studied the possibility of existence of untapped market potential between India and China in the trade of manufactures despite existing limited economic cooperation. This is attributed to their diversification of the trade structures mainly from the export perspectives. Both nations are found to have high level of Intra Industry Trade (IIT) with other countries as

compared to IIT with one another. Thus, they are found to possess the prerequisites to adopt similar trade with each other.

Raghurampatruni (2012) analyzed that bilateral trade was recognized as an instrument of India-China rapprochement. Their bilateral trade grew rapidly in the last decade but the trade balance was in favor of China. Both countries were in competition for sale of their exports but many areas existed where complementarities could be formed in order to maximize commercial benefits.

Mishra et. al., (2015) found that Gross National Product (GNP) positively influenced the volume of trade but transportation cost is found to negatively affect trade among BRICS nations.

Taneja et. al., (2015) analyzed Indian exports and found them to be heavily concentrated in primary products. Majority of Indian imports were capital and intermediate goods which formed base of industrialization process and should not be curtailed. India could manufacture products where China is losing its cost advantage because of changing demographic structure to boost its exports and take advantage of its low labor costs and demographic dividend. It found that India needs to improve its labor productivity to do so. India should diversify its exports basket and concentrate on increase of overall exports with the aim of realizing its untapped exports potential.

Rasoulinez and Jabalameli (2018) studied whether the BRICS nations have similar trade integration patterns using difference in income, GDP, exchange rate, trade openness, multilateral resistance term and distance variables. The study found dissimilar trade integration patterns among BRICS members particularly Russia. Distance is found to weakly affect the trade patterns for China and India as compared to other nations.

Irshad and Xin (2018) studied Pakistan's bilateral trade flow with its "Free Trade Agreement" partner countries including China. The study found that its bilateral trade flow is positively influenced by trade openness, WTO, GDP, religion and common border shared between two nations.

Dwesar and Kesharwani (2019) found that India and China trade mainly in diverse commodities and both countries are thus more involved in inter industry trade. Major Indian exports to China

were primary products. India's trade deficit with China has registered an increase substantially especially after 2014.

Dhami et. al., (2020) analyzed India's trade potential against BRICS economies. Trade openness, per capita GDP and GDP variables are found to be positively affecting India's bilateral trade whereas RTA, a dummy variable is found to be insignificant. Distance is found to adversely affect India's bilateral trade. The study found that considerable potential exists at individual country level and the findings support Linder hypothesis which states that similar countries trade more than the dissimilar ones.

Kubendran (2020) also studied India's trade relations with rest of the BRICS countries. This study found that all the variables like GDP, per capita GDP, trade-GDP ratio, trade agreements and exchange rate positively affect the volume of trade of BRICS nations whereas, per capita GDP differential, inflation and distance affecting it negatively.

Kaur and Gupta (2020) analyzed India and "Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation" (BIMSTEC) trade after the formation of this bloc. Market size, relative factor endowment and similarity index variables positively affect their trade. Distance variable indicating geographical proximity supports the traditional basis of gravity model theory. The study found future scope for intraregional trade in this grouping.

Rai et. al., (2021) studied the pattern of India's trade with BIMSTEC countries. The study found that GDP, Common border, Per capita GDP, trade GDP ratio and BIMSTEC membership positively influence trade between India and BIMSTEC nations. Conversely distance and tax are found to negatively influence the total trade of the nations. It suggested that India should simplify its export- import strategies, reduce trade barriers and invest in infrastructure for viability and continuance of trade links with other countries including BIMSTEC nations in the world.

Objectives and Methodology

The main aim of the study is to analyze trends and pattern of trade between India and China and to examine India's potentialof trade with China. To achieve these objectives secondary is used and it is extracted from various authentic sources like World Bank, UN Comtrade Database and

International Monetary Fund.The trends and pattern of trade between India and China is analyzed by taking the data from 2001-2022.CAGR is used to analyze trends of India's bilateral trade with China. The trade intensity, import intensity and export intensity indexeshave been used to study the pattern of India – China trade. The Gravity model of trade aims to analyzeIndia's trade potential with China. The explanation of the indexes and gravity model which have been used in this study is given below:

Trade Intensity Index (TII) elucidates a country's significance in the world trade. TII is mathematically obtained as following:

$$Tji = \frac{Xji}{Xjt} / \frac{Xwi}{Xwt}$$

Where X_{wi},X_{ji} are the values ofworld exports and country j's exports (India) to country i (China). Here j represents India and i represents China.$X_{jt}$and X_{wt} are total exports of India and world exports respectively. Tradeintensity is influenced by politico-historical links, economic complementarity and geographical proximity.

Export Intensity Index of India with China iswritten as follows:

$$Eji = \left[\frac{\frac{Xji}{Xj}}{\frac{Mi}{Mg - Mj}} \right] * 100$$

Here Xji = India's Export to China;
Xj = TotalIndia exports;
Mi = TotalChina imports;
Mg = Global imports;
Mj = Total India Imports.

Import intensity Index is of India with China iswritten asfollows:

$$IMji = \left[\frac{\frac{Mji}{Mj}}{\frac{Xi}{Xg - Xj}} \right] * 100$$

Here Mji = India's Imports fromChina;

Mj= Total imports India;

Xi= Total exports of China;GD

Xg= global exports;

Xj= Exports of India.

Export intensity greater than 100 show that country j is exporting more to country i than expected from its share in total world trade and vice versa. Similarly, import intensity greater than 100 indicatescountry j's importsas higher than expected given its share in global trade. Same is true in case of opposite scenarios.

Gravity model: The bilateral trade flow analysis between countries is conducted with the aid of an empirical tool termed the gravity model of trade. Gravitymodel is compared to "Newton's law"of gravity. The modeldefines that bilateral trade among the countries is directly proportional to economic size of the countries and negatively proportional to their distance.The genesis of the gravity model dates back to the works of Tinbergen (1962) and Poyhonen (1963). The model equation of gravity model is specified as equation (1):

$$Tradeij = \frac{\alpha(GDPi * GDPj)}{Distanceij} (1)$$

In equation 1,$Trade_{ij}$denotes bilateral trade between country i and j. GDP_i and GDP_j are the respective national incomes of the two countries under consideration. $Distance_{ij}$ measuresgeographical distance between two countries.α is the constant of proportionality.

The linear gravity modelis obtained by taking the log of equation (1) which is shown by equation (2).

$$Log(Tradeij) = \alpha + \beta 1 log(GDPi.GDPj) + \beta 2 log(Distanceij) + \mu ij \quad (2)$$

In equation (2),α , β_1, β_2 are the coefficients which are to be estimated and u_{ij}represents chance events and any other disturbance that could affect the bilateral trade flows. Equation (2) forms the base equation for gravity model.Anderson (1979) gave a economic justification for the model while Bergstrand (1985) and Deardoff (1997) came up with partial theoretical foundations for the model equation (Ekanayake, 2010). There are other variables which could affect bilateral trade flows. Thus they should be taken into consideration while studying the trade flows. Dummy variables are used to test the impact of particularvariablese.g., speaking same language, common land border sharing and trade agreement etc. (Dhami et al, 2020). Thus,to analyzeIndia's trade potential with China, the following gravity model equation is used in this study:

$$logTi = \alpha + \beta 1 logGDPi + \beta 2\ logPCGDPi + \beta 3\ POPi + \beta 4 SIMi + \beta 5 RFEi + \beta 6 Dist + \beta 7 PTA + \beta 8 Com\_border + \beta 9 COM\_LANG + \varepsilon ij \quad \textbf{(3)}$$

In equation (3), T_i denotes the trade flow of India with China. GDP_i, $PCGDP_i$, POP_i, SIM_i, RFE_i are the gross domestic product, per capita GDP, population, similarity index of India with China and relative factor endowment index of India with China respectively. Dist is the distance between New Delhi and Beijing, the capital cities of India and China respectively. Com_border,COM_LANG**,**PTA are the dummy variables denoting common border, common language and the preferential trade agreement. Here India and China do share a land border, both countries are members of Asia Pacific Trade Agreement (APTA) but they do not share a common language.$\boldsymbol{\varepsilon_{ij}}$denotes the error term. RFEi aims to capture technology differences in trade between two countries based on the comparative advantage explanation of trade. The expected sign of RFEi is positive., the relative factor endowment is defined asfollows(Egger, 2002; Serlenga and Shin, 2007; Kabir and Salim, 2010):

$$RFEi = \left| lnPGDPi - lnPGDPj \right| \quad (4)$$

In equation (4), lnPGDPi and lnPGDPj are the natural logs of per capita GDP of India and China respectively. The similarity index (SIM_i)of India with China is defined as follows (Breuss and Egger, 1999; Serlenga and Shin, 2007 and Egger 2000):

$$SIMi = ln[1 - (GDPi/GDPi + GDPj)^2 - (GDPj/GDPi + GDPj)^2] \quad (5)$$

Similarity Index is expected to positively impact bilateral trade flowsbecause similarity with respect to per capita GDP between countries suggests increased similarity indifferentiated goods sector production.This increased similarity wouldlead to an increased trade volume.

Table 1 in annexureshows variables used in gravity equationwith abbreviations, measurement and their expected sign in the model.

Results and Discussions

Table1 depicts the India China bilateral tradewith exports and imports for both the nations. The CAGR for China's exports to India is higher than its imports from the country for the time period under study.

Table 1: India China Bilateral Trade

(US$ million)

	India's bilateral trade with China		**China's bilateral trade with India**	
Year	**Export**	**Import**	**Export**	**Import**
2001	922542	1827549	1895833	1699093
2002	1531604	2619849	2671164	2273871
2003	2567162	3615126	3343225	4251377
2004	4098514	6051257	5936008	7678030
2005	7183792	10167061	8934277	9766216
2006	7829168	15639064	14581297	10277449
2007	9491978	24575772	24051380	14617156
2008	10093927	31586024	31585381	20258886
2009	10370052	30613371	29666560	13714289
2010	17439991	41249116	40913958	20846313
2011	16717786	55483025	50536416	23372279
2012	14729317	54140455	47677452	18797191
2013	16416825	51635444	48432411	16970270
2014	13434251	58230546	54217422	16358691
2015	9539517	61641108	58262004	13395985
2016	8914967	60479988	58920648	11748712
2017	12500767	71890425	67925121	16333354
2018	16503442	73845717	76880637	18850037
2019	17278833	68402093	74825299	17985879
2020	19008267	58798825	66719472	20977286
2021	23036597	87535136	97510656	28137336
CAGR	**0.17**	**0.20**	**0.21**	**0.14**

Source- Author Calculations Basedon UN COMTRADE Database

Figure 1 shows the India's top five export partner countries. It can be seen from the figure that China is emerged as the third largest export destination of India.

Figure 1: India's top Five Export Partner Countries

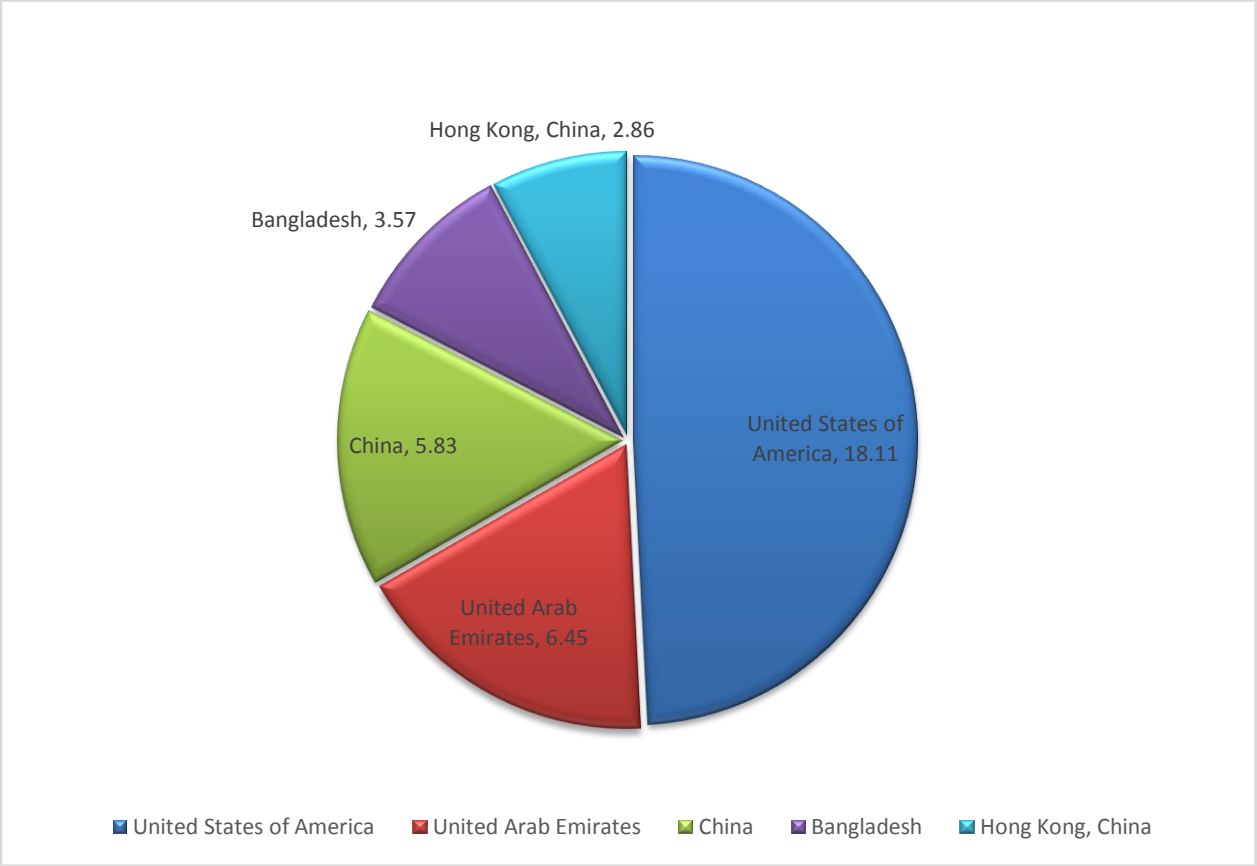

Figure 2 is showing the top five import partners of India. It can be seen from the figure that China is the largest import partner of India.

Figure 2: India's Top Five Import Partner Countries

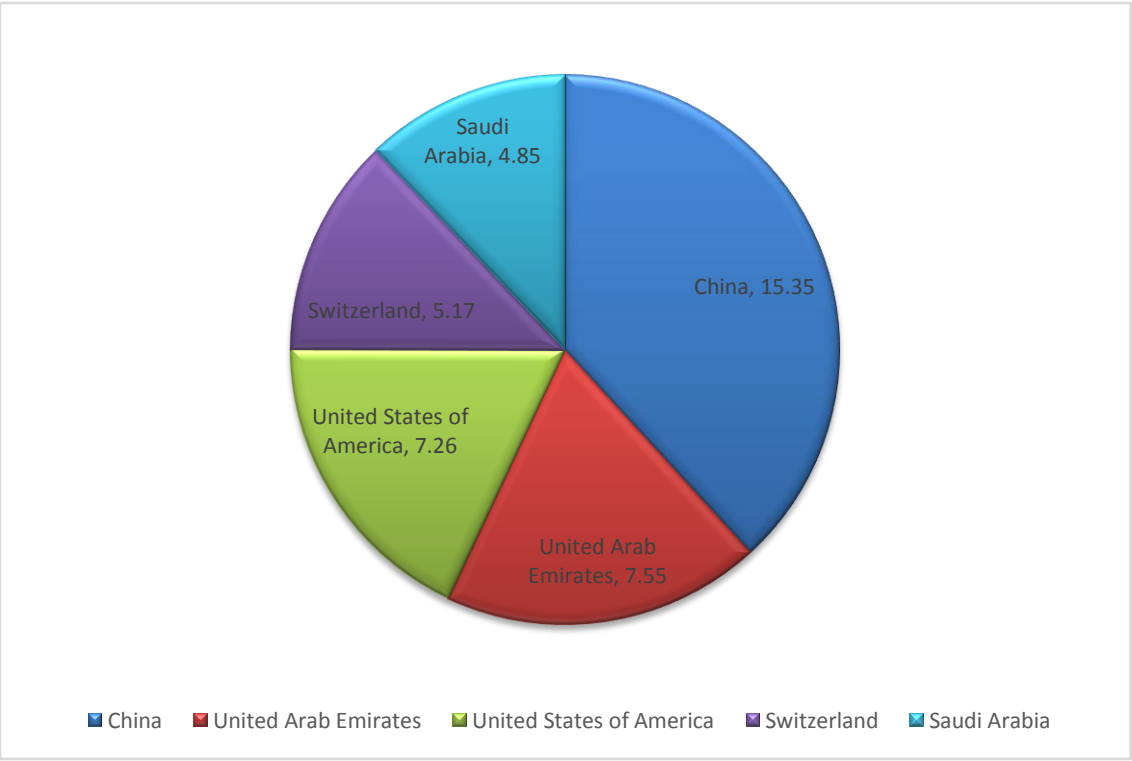

Figure 3 is showing the top five export partners of China. It can be seen from the figure that United States of America is the largest export partner of China.

Figure 3: China's top Five Export Partner Countries

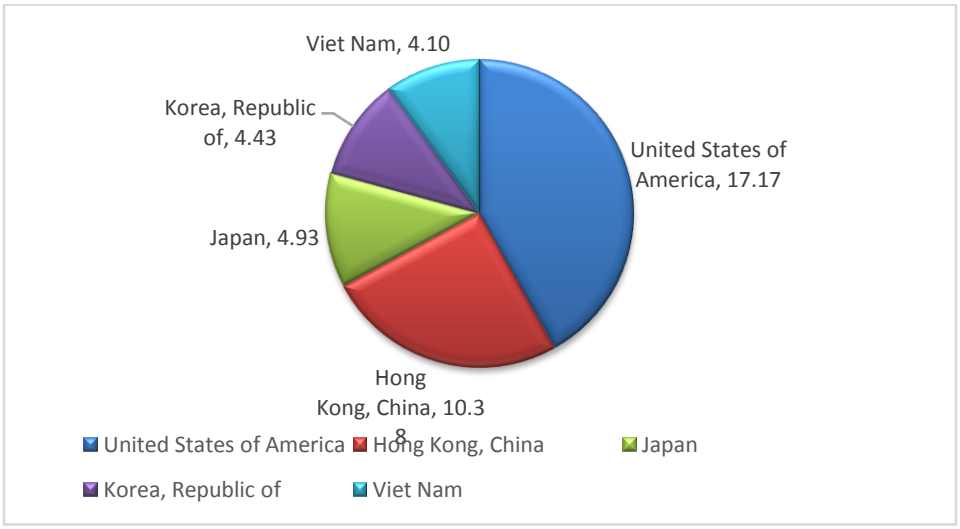

Figure 4 is showing the top five import partners of China. It can be seen from the figure that Taipei is the largest importer from China.

Figure 4: China's Top Five Import Partner Countries

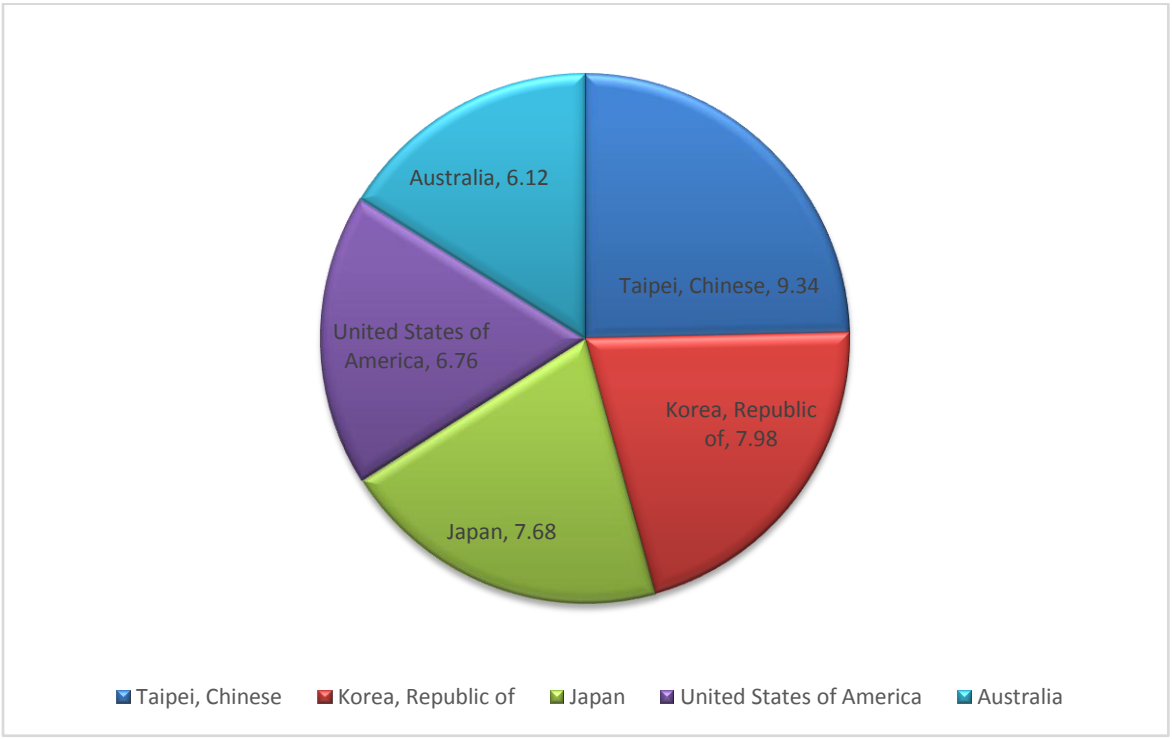

Table 2 depicts export, import and trade intensity index (TII) of India with China from 2001, when China became a part of the plurilateral trading order by joining World Trade Organization (WTO). India had joined WTO since its inception. India's trade intensity increased with China from 2001 to 2005. Trade intensity exceeded 1 in 2005. Since 2006, India's imports intensified as compared to the exports and it has continued over the years. India's trade intensity with China declined in 2008 due to financial crisis but it relatively picked up next year. India's trade intensity declined continuously from 2011 to 2021 except two years i.e., 2018 and 2020. The trade intensity is less than unity from 2001 to 2021 except 2005 which shows that the India's trade flow with China is lesser than expected.

Table 2: India's Export, Import and Trade Intensity Index

Year	ExportIntensity Index	Import Intensity Index	Trade Intensity Index
2001	53.91	82.45	0.53
2002	67.77	89.27	0.67
2003	79.92	84.58	0.78
2004	89.42	92.99	0.88
2005	113.56	97.02	1.12
2006	98.61	107.18	0.98
2007	94.45	125.65	0.94
2008	78.52	110.39	0.78
2009	72.08	116.37	0.72
2010	84.84	111.10	0.86
2011	56.85	112.52	0.58
2012	50.39	97.85	0.51
2013	46.05	92.98	0.47
2014	39.81	100.28	0.41
2015	34.76	111,62	0.35
2016	33.79	125.34	0.34
2017	39.80	123.08	0.40
2018	45.74	110.37	0.46
2019	48.07	105.10	0.48
2020	58.22	106.24	0.59
2021	47.64	99.14	0.48

Source: Author Calculations Based On Un COMTRADE Database

Trade Potential

To examine the trade potential of India with China the gravity model is used. Trade flow of India with China is dependent variable which is used to analyze the trade potential and GDP, PCGDP (taken in log form), population of India, similarity index between India and China, relative factor

endowment index for India with China, distance between India and China, Preferential trade agreement, common border and common language are independent variable.

The table 3 has shown gravity model estimation for India and China.The overall value of R^2 is 0.964531. It shows that 96 per cent variations in dependent variable i.e., India's trade flow with China, can be explained by the given independent variables of the study.

Table 3: Gravity model estimation

Group variable:	Year	Number of groups	21
R-sq: Within Between Overall	0.969271 0.963373 0.964531	Obs. per group: min Avg Max.	13 13.0 13
F(5,90)		1451.13	
Corr (u_i, Xb)	0.0772	Prob > F	0.0000

Source: Author Calculations based on United Nation COMTRADE Database

In given models as shown in table 4, the GDP_i, $PCGDP_i$and POP_icoefficients are positive and significant at 5 per cent significance level. The coefficients of SIM_i are negative in the OLS model.In Random Effect (GLS) method coefficient of SIM_i is positive and significant at 5 per cent level of significance. The coefficient of relative factor endowment is negative but statistically significant in both models. The coefficient of distance is negative but significant in both the models. The coefficients of PTA, Com_border, COM_LANG are positive and significant at 5 per cent level of significance.

Thus the gravity model equation, along with the estimated parameters, is presented as below:

$$logTi = 35.147 + 0.912logGDPi + 0.8154logPCGDPi + 0.5514POPi + 0.6411SIMi - 8.0032RFEi - 2.477Dist + 0.6434PTA + 0.5146Com\_border + 0.678COM\_LANG + \square ij$$

This model helps in estimating the trade creation and trade diversion effects. The estimated coefficients are put in the equation and actual data of each independent variable is addedin order to estimate trade diversion and trade creation for India. If the estimated trade creation and diversion is greater than the actual trade data then there is unfulfilled trade potential between two countries. If estimated values are lesser than the actual trade data then that implies that India has already exploited its trade potential.

As depicted in Table 4, two different modelling techniques were used to identify the most appropriate model that fits the data well and confirms with theoretical basis. Random Effects Generalised Least Squares (REGLS) methodis selected to predict the trade potential as it provides best parameters and expected signs (except REF_i which is negative and significant). The explanatory independent variables used in the study are significant at five per cent level of significance.Results obtained are analyzed as below:

According to gravity model theory, bilateral trade flow is directly proportional to the economic sizes of trading countries. Trade flows should be larger between countries with higher GDP becausethey can produce more and trade more. Log_GDP variable capturing economic size of economies under study is significant at 5 per cent significancelevel. In case of India, Log_GDP is expected to positively impact its trade flows with China. A one per cent change in GDP of India will bring about 0.912 per cent change in India's trade flow with China.

Per capita GDP is used to reflect the development level in the economy. Countries with similar levels of per capita production are expected to trade more with each other. Result shows that Log_PCGDP is significant at 5 per cent significance level. PCGDP is expected to positively affect changes in India's trade flows with China. A one per cent change in PCGDP of India will bring about 0.8154 per cent change in India's trade flow with China.

Population variable denotes the size of the economies and is expected positive influence trade flow. Larger the population, larger the market size and thus trade volumes are expected to rise. Result shows that POP is significant at 5 per cent significance level. A one per cent change in POP of India will bring about 0.5514 per cent change in India's trade flow with China.

The increased similarity in the differentiated goods sectorproduction leads to an increased trade

volume. Result shows that SIM_i is significant at 5 per cent significance level. SIM is expected to be positively changeIndia's trade flows with China. A one per cent change in SIM of India will bring about 0.6411 per cent change in India's trade flow with China.

A country will have advantage in the trade of that productwhich uses the factor with which it is heavily endowed. This variable is hypothesized to positively influence trade flow in gravity analysis. Result shows that its sign is negative but RFE_i is significant at 5 per cent significance level. The results imply existence of technology differences between both nations and it negatively impacts India's trade flow with China. A one per cent change in RFE_i of India will bring about negative 8.0032 per cent change in India's trade flow with China.

Theory states that bilateral trade flow is negatively related to the geographical distance between two trading partners. Longer distances lead to higher transportation and communication costs which increase price of products and decrease their export competitiveness resulting in adverse impact on volume of trade. Dist is significant at 5 per cent significance level. A one per cent increase in Dist will adversely impact India's trade flow by 2.477 per cent.

Various literatures supports the hypothesis that trade flows are positively affected if a country joins a trade agreement. India, China being members of PTA (Asia Pacific Trade Agreement (APTA) is expected to boost trade between two nations. PTA is expected to positively affect changes in India'strade flow with China. PTA is significant at 5 per cent significance level. A one per cent change in PTA will bring about 0.6434 per cent change in India's trade flow with China.

Trade flow between two nations is expected to enhance when they share a common border. This leads to reduction in transport costs and increases the competitiveness of a country's exports. India shares land border with China thus this variable is expected to positive impact trade flow.Com_border is positively significant at 5 percent. A one per cent change in Com_border will bring about 0.5146 per cent change in India's trade flow with China.

Trade flow between two nations is expected to enlarge when they share a common language as it aids in doing business and increasing trade among partner countries. This variable is expected to negatively impact trade flow as India and China have different official languages. COM_LANG variable is positive thus implying that lack of common language in present study is not restriction for trade. A one per cent change in COM_LANG will bring about 0.678 per cent change in Indian trade with China.

Table 4: Results of the Gravity Model

Independent Variables	Dependent Variable –Trade flow	
	Ordinary Least Square (OLS)	Random Effect (GLS)
Log_GDP	1.06991* (37.21)	0.912* (31.30)
Log_PCGDP	7.05361* (57.81)	0.8154* (43.09)
POP	1.893201* (11.21)	0.5514* (10.15)
SIM	-3.649* (-1.89)	0.6411* (8.833)
RFE	-9.5601* (-2.93)	-8.0032* (-0.986)
Dist	-1.478* (-41.74)	-2.477* (-30.09)
PTA	0.345* (-1.55)	0.6434* (0.78)
Com_border	0.832* (23.12)	0.5146* (1.59)
COM_LANG	0.9312* (41.11)	0.678* (4.77)
Constant	17.2617* (-57.15)	35.147* (52.61)
R^2	0.96	-
Observations	273	273

*significant at 5% level, OLS values, GLS- Generalised Least Squares

Source: Author Calculations based on United Nation COMTRADE Database

Conclusion

This study has estimated India's potential of trade with China with the aid of the gravity model estimation technique. Time series data from 2001 to 2021 has been analyzed using Ordinary Least Square (OLS) and Random Effects Generalised Least Squares estimation techniques. The results meaningfullyexplain the trade flow patterns which are consistence with the theoretical model. Results have shown that India's trade flowswith China are positively impacted by GDP, PCGDP, POP of India whereas it is negatively affected by the relative factor endowment of India with China and distance between the two nations. Thus, it can be stated that India's flow with China does not follow the Hecksher-Ohlin framework but follows the Linder hypothesis. It is also stated that bilateral trade is positively affected by common border, trade agreement (PTA) and common language. The study finds that there exists trade potential between India and China. Their bilateral trade has over time emerged to be considered as the most dependable and also

highlyapprovablemeasurefor restoration of harmony between two nations. The Indian industry, export promotion bodies and exporters should adopt new measures to facilitate exports, achieve diversification of export products and aim to achieve reasonable equality in bilateral trading relations with China.

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Annexure

Table 1

ABBREVIATIONS	**VARIABLE NAME**	**MEASUREMENT**	**EXPECTED SIGN**
GDP	GROSS DOMESTIC PRODUCT	GDP AT CURRENT US$	+
PCGDP	PER CAPITA GDP	PCGDP AT CURRENT US$	+
POP	POPULATION	MILLIONS	+
SIM	SIMILARITY INDEX	AUTHOR CALCULATION	+
REF	RELATIVE FACTOR ENDOWMENT INDEX	AUTHOR CALCULATION	+
DIST	BILATERAL DISTANCE	KILOMETERS	-
PTA	REGIONAL TRADE AGREEMENT	IF COUNTRIES PART OF AN RTA, PTA 1 OR OTHERWISE 0	+
COM_BORDER	COMMON BORDER	IF COUNTRIES SHARE BORDER, IT IS 1 OR OTHERWISE 0	+
COM_LANG	COMMON OFFICAIL LANGUAGE	IF COUNTRIES SHARE LANGUAGE, IT IS 1 OR OTHERWISE 0	+