INDIA – ASEAN: Trade Relation Analysis and its exclusion from RCEP

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ABSTRACT

Since 1990's economic reforms, India emphasised on building trade relations with ASEAN which resulted into India entering into Free Trade Agreement (FTA) with ASEAN in 2010. However, India's growing trade deficit with all ASEAN nations has become a major concern for Indian policymakers. In the light of this background, the paper analyses India's trade pattern with all 10 ASEAN nations over the period 1991-2020 at an aggregate level using the panel data framework and at product level using Revealed Comparative Advantage (RCA) Approach. Overall, the paper concludes that while import growth has been growing, the export growth has declined after 2010, resulting into increasing trade deficits with ASEAN. The goods in which India hold comparative advantage have not formed the part of India's export basket to ASEAN. Moreover, India's exports are elastic to ASEAN import demand and to India's relative export price competitiveness, which can help India to gain market access. In addition, AFTA has caused the trade to divert from nations outside the agreement to FTA's member nations leading to trade diversion rather than trade creation. Finally, the paper looks into economic implication of RCEP using SMART Simulation Model. It found that in a scenario where India introduces 100% tariff cut for all RCEP members, results into further increase in India's imports and reduced tariff revenue. Hence, the paper provides all economic evidence to support India's decision to stay out of RCEP, given the current scenario and India's experience with the past trade agreements.

Keywords: *ASEAN, RCEP, Trade Deficit, Comparative Advantage, Free Trade Agreements.*

INTRODUCTION

In recent times, International trade and relations have occupied a very significant position in the process of policy making due to its impact on economic prosperity, social development and geopolitical ties of the country with rest of the world. One of the tool which is often used by policy makers in its foreign policy is to reduce or remove tariff and non-tariff barriers by entering into trade agreements with member nations. India is no such exception to such foreign policy, as it started opening up the economy since 1990's economic reforms were undertaken and have entered into various bilateral and multi-regional trade agreements.

One of the major regional trade agreement is Association of South-East Asian Nations (ASEAN) which was aimed at eliminating the trade barriers among member countries through Common Effective Preferential Tariff (CEPT) Scheme. Because of its growing influence in global trade, India formulated "Look East Policy" in 1991 to build strong trade relations with ASEAN. From being a dialogue partner to entering into bilateral economic cooperation, India finally signed Free Trade Agreement with ASEAN in 2010, also known as AIFTA.

However, India's increasing trade deficit with ASEAN nations and with its FTA partners became a major concern for the policy makers and thereby Indian policymakers became cautious of further entering into new trade agreements. This was reflected in India's decision to pull itself out of Asia's largest trade agreement which is Regional Comprehensive Economic Partnership (RCEP). It is an initiative of economic cooperation among 10 ASEAN nations and its 5 FTA partners (Australia, China, Japan, Korea and New Zealand).

In the light of the above framework, the paper examines India's trade pattern with ASEAN nations over the period 1991-2020 to understand how its trade performance under ASEAN has influenced its participation in RCEP negotiation. The paper begins with analysing the trends of India's trade variables with ASEAN as a whole and each nation separately at an aggregate and a product level. In addition, it measures India's comparative advantage with respect to each ASEAN nation for standard product groups using RCA approach. Further, it takes the readers through the determinants of trade flows between India and ASEAN in terms of India's export elasticity with respect to ASEAN import demand and India's price competitiveness. Finally, it explores the impact of AFTA on the global economy in terms of trade creation and trade diversion.

Apart from studying India's trade flows with ASEAN, the paper estimates the economic implication of RCEP by carrying out the similar analysis of India's trade performance with 5 other FTA partners, both at an aggregate and a product level. The paper provides a final blow by carrying out the simulation exercise, wherein India undertakes 100% tariff cut against all RCEP members to analyse the impact on trade, revenue, consumer surplus and overall welfare in such a scenario.

[1] This paper has been done under the supervision of Prof. Pravakar Sahoo.

LITERATURE REVIEW

Ashok Sengupta in his paper "**Trade and Investment Relations of India & ASEAN countries: Opportunities & Challenges**" make use of Export and Import Trade Intensity Index (TII) in order to study the trade profile of India and ASEAN. The paper found that Trade Intensity Index has been increasing at a constant rate. Export Intensity Index (EII) has grown approximately twice and Import Intensity Index (III) has dropped in 2015-16. Using the econometric analysis, the paper found that 41% of change in India's exports to world are due to changes in total imports by ASEAN. Finally, the paper throws light on reasons for India's trade opportunities with ASEAN such as ASEAN being global hub of consumer demand and well positioned in global trade flows.

Dr. Veeramani.S & Anam (2018) draws attention to growing trade deficit between India and ASEAN. Study suggests that low market access, high non-tariff barriers, cheap imports from ASEAN, Heavy imports of essential commodities and less exports of comparative advantage products of India are some major reasons behind the growing Trade Deficit. The paper uses the RCA and DS-RCA Index to look at the India's comparative advantage in goods and services with respect to a particular destination. To deal this gap with positive trade policies and action, actions must be taken by the government through making required changes in the policies like putting barriers on cheap imports from ASEAN, encouraging exports in commodity categories in which DS-RCA analysis has indicated comparative advantage separately for each ASEAN member nation, work for improved market access of Indian goods through removal of non-tariff barriers through progressive and constant consultation with ASEAN members.

Amal Sarkar in his paper "**India's trade linkage with ASEAN: An Econometric Study**" aims to find the determinants of India's export flows to individual ASEAN countries. The consideration of individual countries in this study shows that there exist significant differences in export demand elasticity's in the ASEAN countries with different levels of economic development when explaining their behaviour as importers from a common trade partner, India. As regards to the results of trade model, it can be said that it has performed very well in terms of sign and significance of the explanatory variables. Further, the result of this study reveals valuable insight for policy-makers. The expenditure-effect on India's export to ASEAN has been found to be positive. In other words, the demand for India's exports is influenced positively by the growth of the ASEAN market. The study also shows that India's export is price competitive in the ASEAN market. Therefore, it can be inferred that India's preferential trade agreements with ASEAN countries would be helpful to raise its volume of trade with the region.

Indira M. Hapsari and Carlos Mangunsong (2006) investigate the determinants of trade flows of AFTA members, including the impact of creation of AFTA on its intra-regional and extra-regional trade flow by comparing trade patterns of AFTA countries with AFTA members and non-members. The econometric analysis suggested that AFTA may be causing some trade diversion and shifting trade from countries outside the bloc to possibly less efficient countries inside the bloc. It also confirmed that the more complementary the supply and demand of countries, the more they will trade. Since the export and import profiles of ASEAN members have become more complementary to each other over time, the potential for intra-regional trade is great for ASEAN members. Finally, they also found that the similar structure of export between ASEAN members has a positive effect on its bilateral exports.

B.P. Sarath Chandran (2018) uses the WITS-SMART simulation model to find out the influence of RCEP on India. The simulation exercise showed that India's import from ASEAN plus countries will substantially increase if the FTA comes into existence. China which enjoys a huge trade surplus with India will further improve its trade performance and increase the trade balance. India's advantage will be primarily in the services sector and it is better to complete the comprehensive trade agreement which includes trade, services and investment. Also, protection of sensitive product categories with higher Rules of Origin (RoO) support is necessary. India's experiences with the existing FTAs is nor very encouraging. India should ensure its concerns addressed before signing the FTA.

OBJECTIVES OF THE STUDY

1. To analyse the trade performance (exports, imports and trade deficit) between India and ASEAN group as a whole over the time period 1991-2020, both at aggregate and product level.
2. To examine trade patterns (exports, imports and trade deficit) between India and each of ASEAN nation separately at an aggregate and product level.
3. To measure the comparative advantage of India's exports with respect to each ASEAN nation.
4. To empirically estimate the impact of India entering into free trade agreement with ASEAN in 2010 on export's growth and import's growth.
5. To measure the determinants of trade flows between India and each ASEAN nation.
6. To estimate the impact of ASEAN agreement on the world economy as a whole in terms of trade creation and trade diversion.
7. To examine trade patterns (exports, imports and trade deficit) between India and other RCEP members separately at an aggregate and product level.
8. To measure the comparative advantage of India's exports with respect to other RCEP members.
9. To find out the economic impact of India joining RCEP on revenue, trade, consumer surplus and welfare using simulation exercise.

DATA SOURCES AND METHDOLOGY

1. India-ASEAN: Trade Pattern Analysis

The Paper begins with showing the India- ASEAN trade patterns using descriptive analysis for the entire 10 ASEAN group (Brunei, Cambodia, Indonesia, Lao, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam) as a whole for the current period of 2020 as well as over the time period of 1991-2020. The reason behind this period of study is that India started with the economic reforms in the period 1991 which included opening to the world economy to enhance trade and growth. The variables included in this analysis such as exports, imports and trade deficit, both at aggregate and standard product level (HS-2) are taken from WITS – UN COMTRADE data source.

2. Country-wise Analysis : RCA and DS-RCA

Further, the paper delves into country wise analysis using Revealed Comparative Advantage (RCA) and Destination Specific- Revealed Comparative Advantage (DS-RCA) Index to test for India's export competitiveness of standard product groups. It follows the similar methodology using RCA Index as proposed by Bela Balassa (1965) as well as by using slightly modified version DS-RCA Index.[3] All the data is collected from WITS – UN COMTRADE data source.

DS-RCA Index calculates the revealed comparative advantage by taking export destination as a market, instead of the whole world economy. This is important to highlight as there are various product groups which are exported by India globally, but not getting significant position in ASEAN's import basket. Thus, it provides a better picture of competitiveness of Indian exports to a particular destination.
The Indices are defined as follows:

RCA for a country 'i', for a product category 'j' is given by –

$$\mathbf{RCA_{ij} = (X_{ij} / X_{wj}) / (X_i / X_w)}$$

Where,
X_{ij} : Country 'i' exports in category 'j'
X_{wj} : World's exports in category 'j'
X_i : Country 'i' total exports
X_w : World's total exports

DS-RCA for a country 'i' for a product category 'j' to country 'k'

$$\mathbf{DS\text{-}RCA_{ijk} = (X_{ijk} / X_{wjk}) / (X_{ik} / X_{wk})}$$

Where,
X_{ijk} : Country 'i' exports in category 'j' to country 'k'
X_{wjk} : World's exports in category 'j' to country 'k'
X_{ik} : Country 'i' total exports to country 'k'
X_{wk} : World's total exports to country 'k'

RCA MATRIX

RCA >1 and DS-RCA >1 Country's exports are competitive wordwide as well as at destination. It's a major contributor to growth and needs high care and focussed strategies for growth.	**RCA < 1 and DS-RCA >1** Country's exports are not competitive wordwide but at destination. These are the potential items for exports to destination
RCA >1 and DS-RCA < 1 Country's exports are competitive worldwide, but not gained advantage at a particular destination. This is a potential area to boost trade by removing tariff and non-tariff barriers.	**RCA < 1 and DS-RCA < 1** Country's exports are not at all competitive wordwide as well as at destination.

3. Impact of India's FTA with ASEAN in 2010

Conceptual Framework

ASEAN, which encompasses 10 nations, is one of the growth centres of the world and a major global hub of manufacturing and trade. It was aimed at eliminating tariff barriers among member countries through agreement on Common Effective Preferential Tariff (CEPT). In early 1990's, India focussed on strengthening its relationship with ASEAN. This search for economic space in the global economy resulted into India pursuing 'Look East Policy', which later oriented into 'Act East Policy'. In the pursuit of this policy, India entered into Free Trade Agreement (FTA) with ASEAN in 2010, known as ASEAN- India Free Trade Agreement (AIFTA).
The paper attempts to analyse the change in growth of trade (export and imports growth) between India and ASEAN before and after 2010. For this analysis, the paper fits into a gravity model to the panel dataset.

Gravity Model

Gravity model has been broadly used in explaining the determinants of trade flows of a country and provides accepted framework and a useful multivariate approach for assessing the impact of regional trade. It is a model of trade flows based on the analogy with the law if gravity in physics. Trade between two countries is positively related to their size, and inversely related to the distance between them. Since then, the gravity model has been widely used and increasingly improved in empirical studies of international trade. A number of explanatory variables have been added to initial gravity equation to improve explanatory power of the model to analyse various bilateral trade policy issues.

Data Source and Methodology

The paper modifies the basic gravity equation as follows:

$$Log(Exports_{ij}) = \beta_o + \beta_1 Log(Distance) + \beta_2 COM\_LANG + \beta_3 EX\_PGDP + \beta_4 IM\_PGDP + \beta_5.t + \beta_6 Di + \beta_7 t.Di + u_i$$

Where,
$Log(Exports_{ij})$: log of bilateral exports from country 'i' to country 'j' in 1000 USD.
Log(Distance) : log of distance between the capitals of two countries.
COM_LANG: Dummy variable that takes value 1 for countries with same common language and 0 otherwise.
EX_PGDP : Per-capita GDP of exporting nation.
IM_PGDP : Per-capita GDP of importing nation.
t : Time period that takes value 1 for 1991, 2 for 1992 and so on till 2020.
Di : Dummy variable that takes value 1 for Years for greater than or equal to 2010, 0 otherwise.
t.Di : Interaction term.

The data for bilateral exports is taken from WITS – UN COMTRADE, data for per-capita GDP from World Bank – World Development Indicators and data for distance and common language from CEPII database.

The paper employs the above modified gravity equation to 6 panel data sets and runs 6 regressions as:

1. India's exports to all 10 ASEAN countries as dependent variable.
2. All 10 ASEAN countries' exports to India as dependent variable.
3. India's exports to 7 trade deficit ASEAN countries as dependent variable.
4. 7 Trade Deficit ASEAN countries' exports to India as dependent variable.
5. India's exports to 3 trade surplus ASEAN countries as dependent variable.
6. 3 Trade surplus ASEAN countries' exports to India as dependent variable.

Panel Model

In order to check the type of panel model to be fitted to each dataset, hausman test is undertaken. The Hausman test can be used to differentiate between fixed effects model and random effects model in panel analysis. In this case, Random effects (RE) is preferred under the null hypothesis due to higher efficiency, while under the alternative Fixed effects (FE) is at least as consistent and thus preferred.
The hausman test led to fitting Random effect model to panel dataset (1), (2) and (3) and fitting pooled model to (4), (5) and (6).

Random Effect Model

In the Random Effects model, we assume that the unit-specific effects for all units are distributed around a common mean value according to some unknown probability distribution. Furthermore, this common mean is constant across all time periods in the data panel. These assumptions give rise to the following conditional expectation for the term $Z_i \gamma_i$ that's meant to capture all unobservable unit-specific effects:
$E(Z_i \gamma_i \mid Xi) = \alpha$
Then, the regression equation will be of the form:

$$\boldsymbol{y_i = X_i \beta_i + \alpha + (\mu_i + \epsilon_i)}$$

While estimating the model's parameters, if we were to leave out the unit-specific effects Ziγi, we would be introducing two things:

1. A constant α that captures the mean of all unit-specific effects. This mean does not vary with time and it effectively takes the place of the regression model's intercept term.
2. An error term μ_i whose magnitude is proportional to the variance of the unit-specific effect around the constant mean. Taking this perspective gives us the reason for combining u_i with the error term ϵ_i to form a composite error term.

Pooled OLS Regression Model

In pooled OLS regression model, unit specific characteristics zi'γ are constant. zi = α and uncorrelated with xit. Dependence on the yit may enter through the variance. That is, repeated observations on individual i are linearly independent. In this case,
yit = xit'β + α + eit
OLS estimates α and β consistently. We estimate k+1 parameters.

4. Determinants of Trade Flows between India and ASEAN

Conceptual Framework and Data Source

The paper shows that there are huge trade flows occurring between India and each of ASEAN country over the period of 1991-2020. Now, in order to identify the determinants of trade flows between them, the paper explain bilateral exports in terms of expenditure effect and price competitiveness.

For this, the paper specifies India's exports as a demand function of aggregate import demand of ASEAN nation and India's export price competitiveness relative to domestic price of ASEAN nation.

The Bilateral export demand function can be expressed as follows:

$$X_j = \beta_o + \beta_1 M_j + \beta_2 (UVX/PY_j) + U_j$$

Where,

X_j : India's exports to ASEAN country 'j'

M_j : Aggregate imports of ASEAN country 'j'

UVX : India's unit value of export Index (2000=100)

PYi: GDP Deflator of ASEAN country 'j'

However, log-linear form of the above equation is undertaken to express it in an elasticity form as:

$$\text{Log}\,(X_j / UVX) = \mu + \alpha\, \text{Log}\,(M_j / PY_j) + \beta\, \text{Log}\,(UVX/PY_j) + V_{ij} \quad \text{----- (1)}$$

Where,

α : Elasticity of India's exports to ASEAN country 'j' with respect to country 'j' total aggregate imports.

β : Elasticity of India's exports to ASEAN country 'j' with respect to India's unit value Index of exports relative to the domestic price level of 'j' country.

The data for the variables X_j and M_j are taken from WITS – UN COMTRADE and for the variables UVX and PY_j are taken from World Bank – World Development Indicators (WDI) for the same period 1991-2020.

Methodology

The time series analysis requires running the regression (1) for each of the ASEAN country. However, the application of OLS to time series regression can result into spurious regression if the variables in the regression are found to be non-stationary. Thus, Dickey Fuller Test is used in order to check for the stationarity of each of the time series variable involved in the regression for each ASEAN country separately, both at levels and at first difference.

Dickey Fuller Test

It is used to test the null hypothesis that a unit root is present in autoregressive time series model.

A simple AR (1) model is

$$Y_t = \rho\, Y_{t-1} + \mu_t$$

A unit root is present if ρ=1 and model is non-stationary in this case.

The regression model can be written as follows:

$$\Delta Y_t = (\rho-1)\, Y_{t-1} + V_t$$
$$= \lambda\, Y_{t-1} + V_t$$

Thus, presence of unit root is tested by testing $\lambda = 0$ and it uses Dickey Fuller Statistic.

Fully Modified OLS Technique

Fully modified least squares (FM-OLS) regression was originally designed in work by Phillips and Hansen (1990) to provide optimal estimates of co-integrating regressions by taking into account the non-stationarity of variables. The method modifies least squares to account for serial correlation effects and for the endogeneity in the independent variables that results from the existence of a co-integrating relationship.

It is a semi-parametric approach asymptotically equivalent to maximum-likelihood approach.

Thus, fully modified OLS technique is applied to equation (1) to estimate long run elasticities. The pre-condition for applying this technique is that all the variables must be integrated of order 1, so they must have unit roots.

5. TRADE CREATION AND TRADE DIVERSION EFFECTS

The paper further analyses the impact of Regional Trade Agreement such as that of ASEAN along with its other FTA partners on the global economy as a whole in terms of trade creation and trade diversion.

Thus, the standard gravity model is modified to capture that effect in the following manner:

$$\text{Log}(\text{Exports}_{ij}) = \beta_o + \beta_1\, \text{Log}(\text{Distance}) + \beta_2\, \text{COM\_LANG} + \beta_3\, \text{EX\_PGDP} + \beta_4\, \text{IM\_PGDP} + \beta_5.\text{CONTIG} + \beta_6\, \text{LANDLOCKED} + \beta_7\, \text{TRADE\_CREATION} + \beta_8\, \text{TRADE\_DIVERSION} + u_i$$

Where,

$\text{Log}(\text{Exports}_{ij})$: log of bilateral exports from country 'i' to country 'j' in 1000 USD.

Log(Distance) : log of distance between the capitals of two countries.

COM_LANG: Dummy variable that takes value 1 for countries with same common language and 0 otherwise.
EX_PGDP : Per-capita GDP of exporting nation.
IM_PGDP : Per-capita GDP of importing nation.
CONTIG : Dummy variable that takes value 1 if countries are continuous, 0 otherwise.
LANDLOCKED : Dummy variable that takes value 1 if country is landlocked, 0 otherwise.
TRADE_CREATION : Dummy variable if both exporting and importing country are ASEAN or FTA partner.
TRADE_DIVERSION : Dummy variable if the importing country is ASEAN or FTA partner, but exporting country is not.

The panel data consists of 10 ASEAN countries, its FTA partners (India, China, Japan, and South Korea) and other countries that have huge share in global trade such as Canada, France, Germany, Ireland, Italy, Mexico, Netherland, Switzerland, United Arab Emirates, United States and United Kingdom.
The data for the variable Bilateral Exports is sourced from WITS – UN COMTRADE, per-capita GDP data from World Bank – World Development Indicators and variables such as CONTIG, COM_LANG and LANDLOCKED are taken from CEPII database.

DATA SOURCE AND METHODOLOGY

Regional Economic Cooperation Agreement (RCEP) is an initiative of economic cooperation among 10 ASEAN nations and its 5 FTA partners that are Australia, China, Japan, South Korea and New Zealand. However, India decided not to join RCEP. Thus, in the light of this, the paper studies the economic impact of this large trade negotiation in form of tariff reduction, if India would have joined RCEP.

The paper further extends the analysis of India's trade patterns with the other 5 FTA partners that joined RCEP by using similar approach as before done with 10 ASEAN nations. The descriptive analysis looks at the trends of India's exports, imports and trade deficit with each country separately for the period 1991-2020 by using same data sources. In addition, it also emphasis on exports at standard product level by using RCA Matrix as defined before. Lastly, the paper analysis the economic impact of the proposed RCEP agreement using WITS SMART Simulation Model.

WITS – SMART SIMULATION MODEL

SMART is a data extraction and tariff simulation software included in WITS using databases maintained by WITS such as UN COMTRADE, UNCTAD TRAINS etc. It allows the users to estimate the partial equilibrium impact of tariff reductions by importing country for set of exporting countries for a single period. It is used to simulate the impact of preferential Trade Agreement. The simulation model reports the 4 kinds of effects which are:

1. Trade Effects:
   Effect of trade policy on trade flows (imports), decompose trade effect into trade creation and trade diversion and finally the price effect. Trade Creation is defined as the direct increase in imports due to tariff reduction imposed on a good from a particular country. If the tariff reduction is a preferential tariff reduction which applies only to a particular country, then the imports are going to increase further due to substitution effect as imports from other countries become relatively more expensive. This would be termed as trade diversion. Price effect shows the increase in world prices due to increase in demand occurring from tariff reduction of a good.

2. Welfare Effect
   It shows the impact of trade policy change on welfare. This is what the economy as a whole is going to gain by reducing the tariff. The gain is made up of additional tariff revenue entailed by increase in imports and additional consumer surplus entailed by increase in imports.

3. Market View
   It shows the impact of trade policy on change in imports, tariff change in revenue and consumer surplus. Tariff revenue change on a given import flow is computed simply as the ad-valorem tariff multiplied by the final import value minus the initial ad-valorem tariff multiplied by the initial import value.

4. Revenue Effect
   It shows the impact of trade policy on total trade effect, trade value and revenue effect. The total trade effect is the additional increase in imports due to reduction in tariff.

The simulation exercise for the study used bilateral trade data between India and RCEP members for the year 2020. India is cutting the 100% tariff and beneficiary countries are all the RCEP members. Tariff cut is done across the board and all the products are affected by tariff cut.

DESCRIPTIVE ANALYSIS

India-ASEAN Trade Pattern Analysis

India- ASEAN trade relations have been growing over the time with ASEAN becoming India's fourth largest trading partner. The total trade between the two regions amounted to 78.9 billion USD, in which exports and imports to ASEAN amounted 31.49 billion USD and 47.42 billion USD respectively in 2020-21.[1]

The Table 1 shows that India runs huge trade deficit with 6 out of 10 ASEAN countries – Brunei, Indonesia, Malaysia, Singapore, Thailand and Vietnam in the year 2020, the highest with Indonesia and Singapore.

Table 1

INDIA'S TRADE PATTERN: COUNTRY-WISE (IN 1000 USD)- 2020			
ASEAN COUNTRY	**Exports**	**Imports**	**Trade Deficit**
Brunei	60050.926	422894.374	-362843.448
Indonesia	4363741.9	12020794.5	-7657052.636
Cambodia	144042.578	38186.46	105856.118
Lao PDR	27873.503	2074.905	25798.598
Myanmar	837624.366	575594.224	262030.142
Malaysia	6194006.085	7378040.61	-1184034.524
Philippines	1416026.273	505658.19	910368.083
Singapore	8295020.166	12306747	-4011726.812
Thailand	3777064.296	5223761.79	-1446697.494
Vietnam	4500548.684	5564634.47	-1064085.783

Figure 1 and 2 presents India's export and import share with each of ASEAN countries. India's top three major Export destinations are Singapore, Thailand and Vietnam, whereas India's top three major import sources are Singapore, Indonesia and Malaysia for the year 2020.

Figure 1

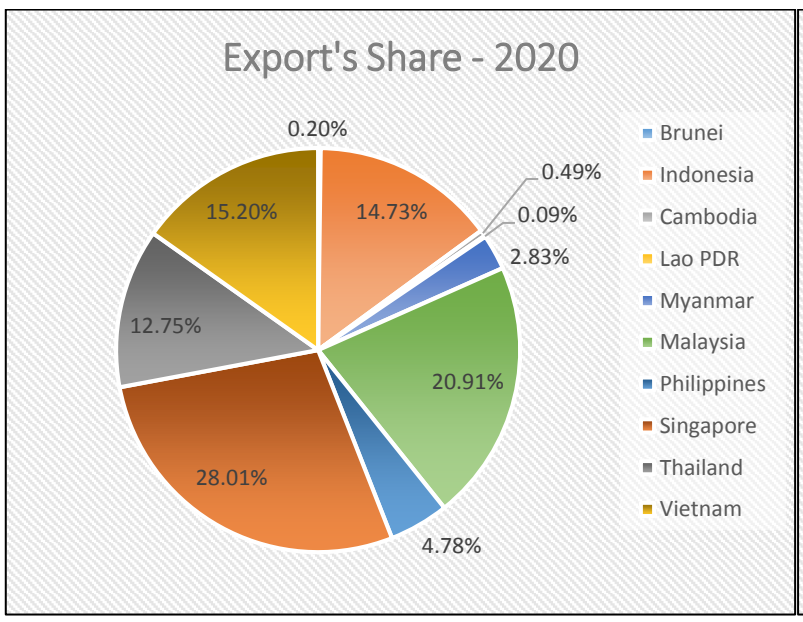
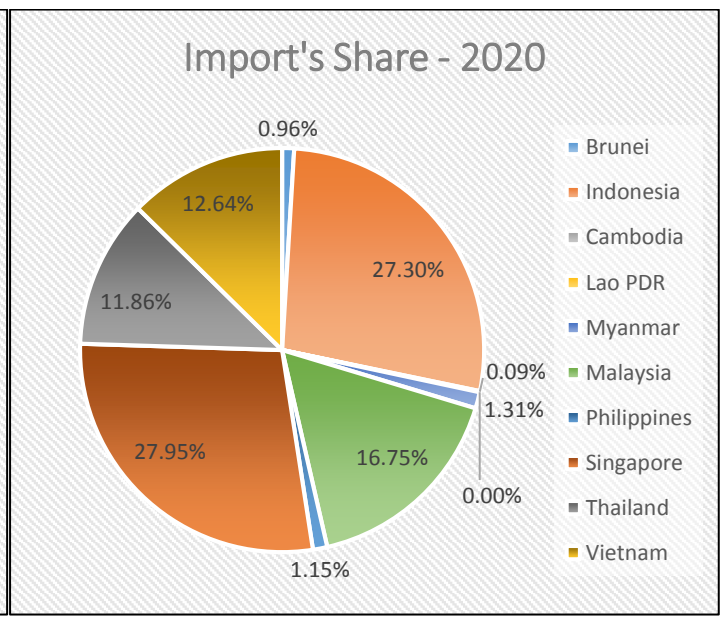


Figure 2

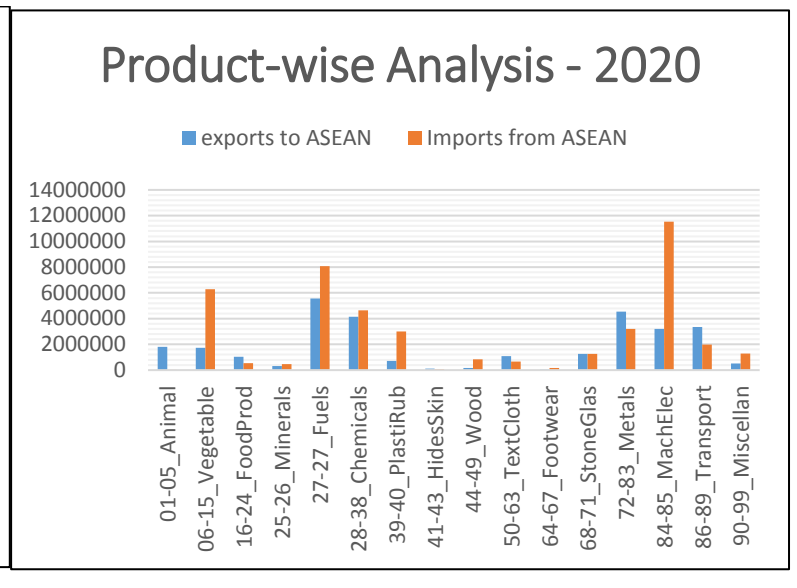


In addition, Figure 3 shows the India's exports and imports to ASEAN for the period 1991-2020. Till the period of 2005-06, India's exports and imports to ASEAN have been approximately of same magnitude. However, since 2006-07, the imports have been of higher magnitude than exports, thereby, India recording trade deficit with ASEAN. This is because India's tariffs were much higher than partner countries, thus the effective reduction on tariff for partner countries led to India's imports growing faster than exports. The gap has been further widening since 2010-11 (year India entered into agreement with ASEAN) leading to increasing trade deficit in India.

Figure 4 illustrates the product-wise India's exports and imports from ASEAN. It shows that India's exports of products such as textile clothing, footwear, food products, and minerals don't have a significant place in ASEAN imports, in which India has a competitive advantage. Instead, there is a higher dependence on products such as vegetables, fuels, chemicals and metals from ASEAN which are essential commodities.

Figure 3

Figure 4



Country-wise Analysis

Till now the paper talked about India's trade relation with entire ASEAN group as a whole consisting of 10 nations. But, it is also important to look at India's trade relation with each specific country to have country level analysis as while some forms the part of top export destinations and others as apart of import sources. Countries which recorded significant trade deficits are illustrated below.[2] (Trade Analysis with other countries are attached in Appendix).

1. **BRUNEI**

   Brunei accounts for 0.2% of India's exports to ASEAN and 0.96% of imports from ASEAN with overall trade deficit share of 2.52%. (Figure1 and Figure2). Thus, Brunei is not a very big trading partner in terms of total trade with India.

   The Figure 5 and 6 shows the trends of exports and imports of India-Brunei for the period 1991-2020. The exports and imports were almost of same magnitude till 2005-06. However, the imports picked up faster than exports recording huge trade deficit for 2006-10. As India entered into FTA with ASEAN in 2010, there was a huge jump in exports between 2010-12 with imports also rising, leading to improvement in trade deficit. But, afterwards, the exports declined while imports continued leading to the trade deficit for the rest of the period.

Figure 5

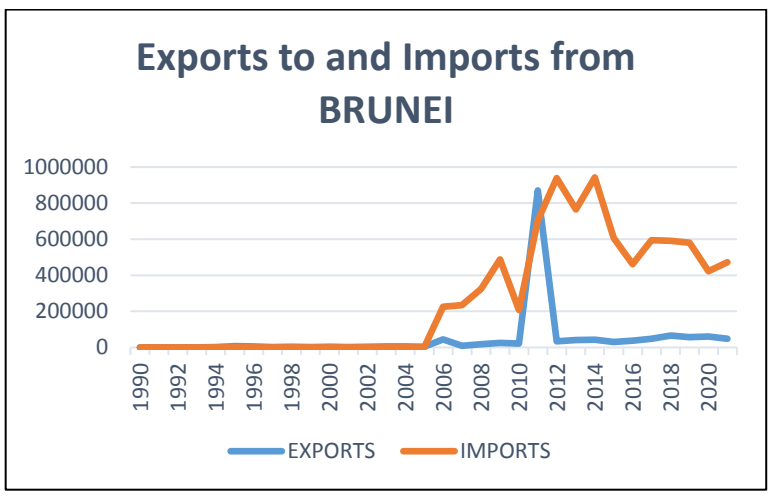
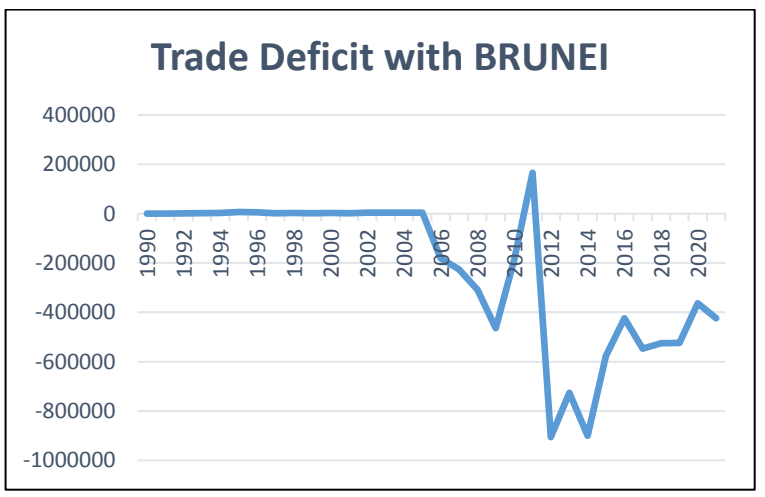


Figure 6



The Figure 7 and Table 2 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as Brunei in products such as animals, vegetables and minerals, however, the value of exports for these products have not been significant in recent year. Thus, these account for lower export's value leading to higher trade deficit and thereby, need to improve exports of these existing products. Further, the products such as fuels, chemicals, textile and metals are the one where India has a comparative advantage with respect to world, but not with Brunei, so there is scope of building exports of these products to Brunei to improve export performance and reduce trade deficits.

Figure 7

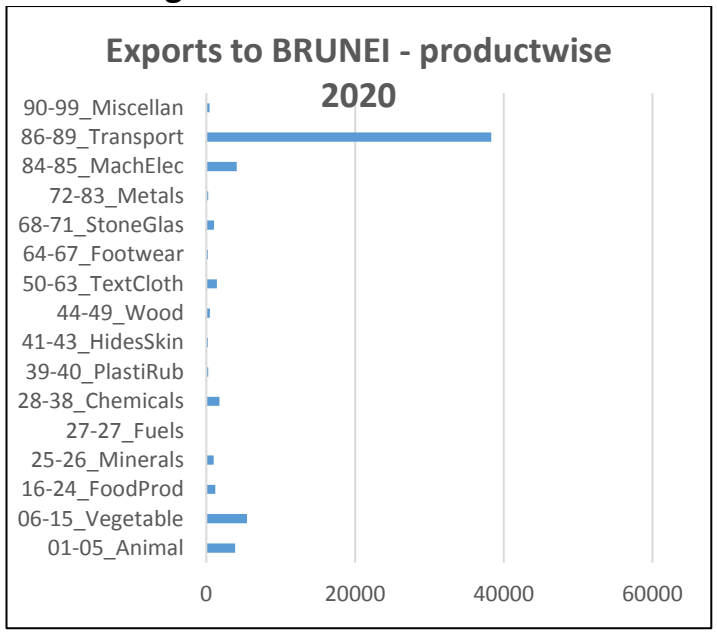


Table 2

BRUNEI		
	RCA>1	**RCA<1**
DS-RCA>1	01-05_Animal 06-15_Vegetable 25-26_Minerals 41-43_HidesSkin	44-49_Wood 64-67_Footwear 86-89_Transport
DS-RCA<1	27-27_Fuels 28-38_Chemicals 50-63_TextCloth 68-71_StoneGlas 72-83_Metals	16-24_FoodProd 39-40_PlastiRub 84-85_MachElec 90-99_Miscellan

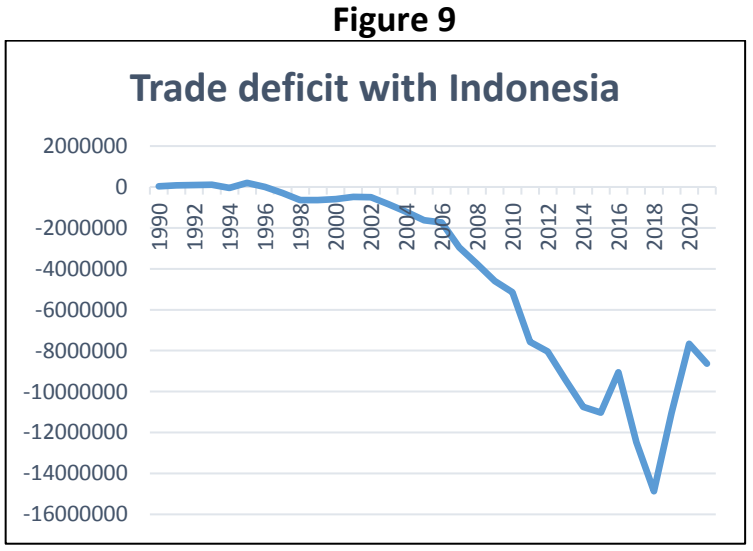
2. INDONESIA

Indonesia accounts for 14.73% of India's exports to ASEAN and 27.3% of imports from ASEAN with overall trade deficit share of 53.09%. (Figure1 and Figure2). Thus, Indonesia is big trading partner in terms of total trade with India.

The Figure 8 and 9 shows the trends of exports and imports of India-Indonesia for the period 1991-2020. The exports and imports were almost of same magnitude till 2003-04. However, the imports picked up faster than exports recording huge trade deficit. As India entered into FTA with ASEAN in 2010, the gap between exports and imports further widened leading to huge trade deficits.

Figure 8

Figure 9



The Figure 10 and Table 3 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as Indonesia in products such as animals, vegetables, chemicals and minerals, and the value of exports for these products have been significant in recent year except for minerals. Thus, India can improve its export value for minerals. Further, the products such as fuels, textile and metals are the one where India has a comparative advantage with respect to world, but not with Indonesia, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 10

Table 3

Indonesia		
	RCA>1	**RCA<1**
DS-RCA>1	01-05_Animal 06-15_Vegetable 25-26_Minerals 28-38_Chemicals	16-24_FoodProd 86-89_Transport 90-99_Miscellan
DS-RCA<1	27-27_Fuels 41-43_HidesSkin 50-63_TextCloth 68-71_StoneGlas 72-83_Metals	39-40_PlastiRub 44-49_Wood 64-67_Footwear 84-85_MachElec

3. **MALAYSIA**

Malaysia accounts for 20.91% of India's exports to ASEAN and 16.75% of imports from ASEAN with overall trade deficit share of 8.21%. (Figure1 and Figure2). Thus, Malaysia is big trading partner in terms of total trade with India.

The Figure 11 and 12 shows the trends of exports and imports of India-Malaysia for the period 1991-2020. The exports and imports were almost of same magnitude till 2001-02. However, the imports picked up faster than exports recording huge trade deficit. As India entered into FTA with ASEAN in 2010, the gap between exports and imports further widened leading to huge trade deficits.

Figure 11

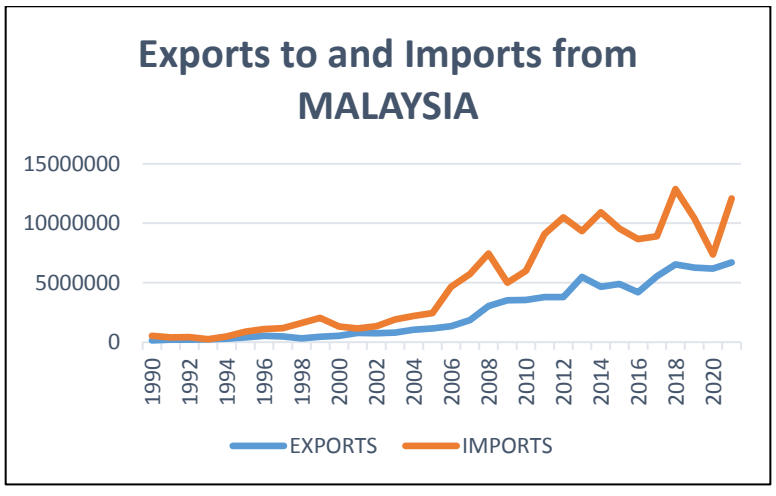
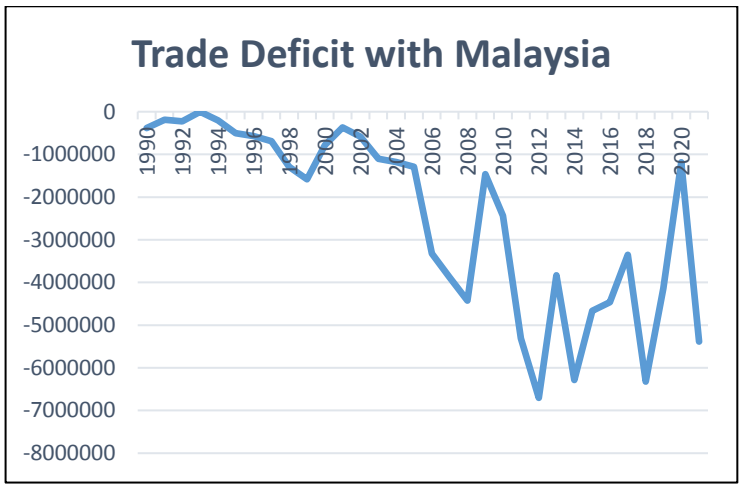


Figure 12



The Figure 13 and Table 4 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as Malaysia in products such as animals, vegetables, fuels, chemicals and metals, and the value of exports for these products have been significant in recent year. Thus, India is tapping well on its comparative advantage. Further, the products such as textile clothing, hides skin are the one where India has a comparative advantage with respect to world, but not with Malaysia, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 13

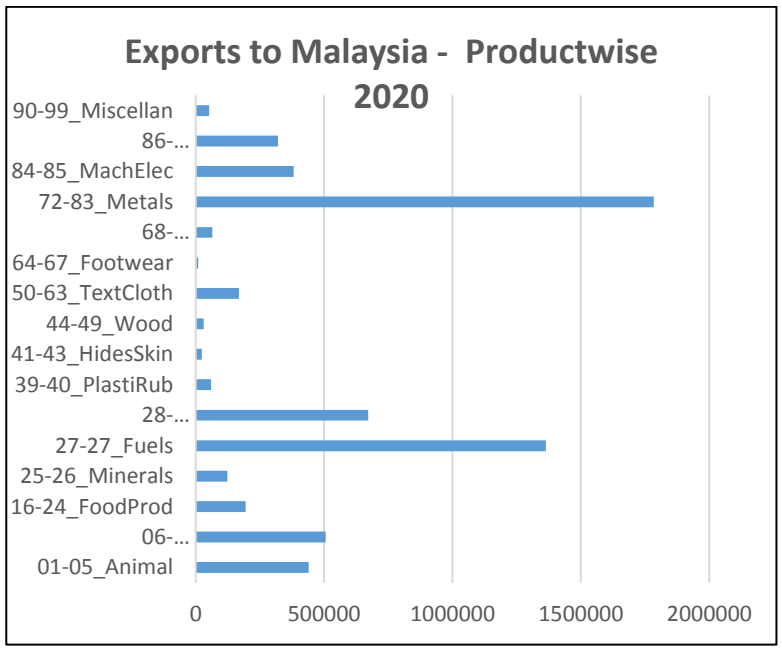


Table 4

Malaysia		
	RCA>1	**RCA<1**
DS-RCA>1	01-05_Animal 06-15_Vegetable 25-26_Minerals 27-27_Fuels 28-38_Chemicals 72-83_Metals	16-24_FoodProd 86-89_Transport
DS-RCA<1	41-43_HidesSkin 50-63_TextCloth 68-71_StoneGlas	39-40_PlastiRub 44-49_Wood 64-67_Footwear 84-85_MachElec 90-99_Miscellan

4. **SINGAPORE**

Singapore accounts for 28.01% of India's exports to ASEAN and 27.95% of imports from ASEAN with overall trade deficit share of 27.82%. (Figure1 and Figure2). Thus, Singapore is big trading partner in terms of total trade with India.

The Figure 14 and 15 shows the trends of exports and imports of India-Singapore for the period 1991-2020. The exports and imports were almost of same magnitude till 2009-10. However, the exports picked up faster than imports recording huge trade surplus for the period 2010-16 as India entered into FTA with ASEAN in 2010. Afterwards, the imports widened than the exports leading to huge trade deficits for the period 2016-20.

Figure 14

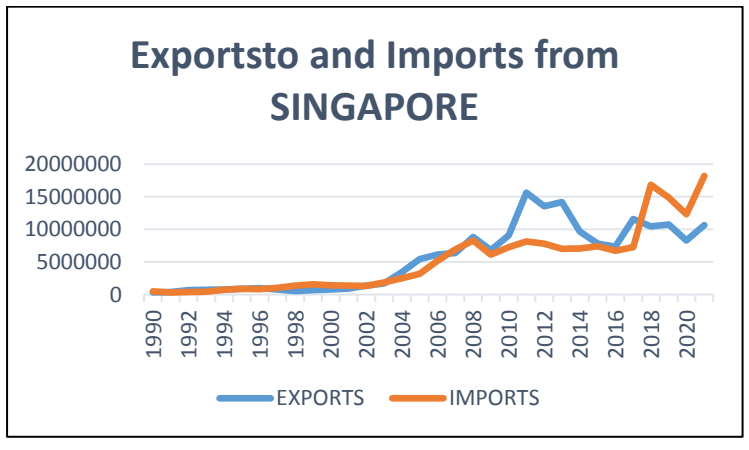
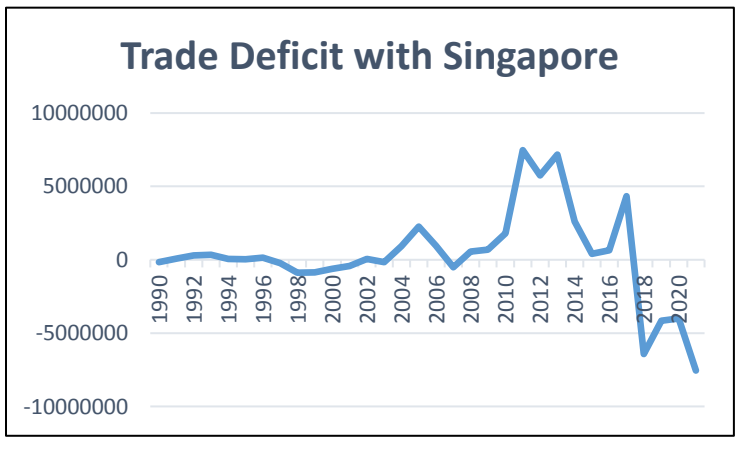


Figure 15



The Figure 16 and Table 5 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as Singapore in fuels and the value of exports for fuels have been significant in recent year. Further, the products such as animal, vegetable, minerals, textile and metals are the one where India has a comparative advantage with respect to world, but not with Singapore, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 16

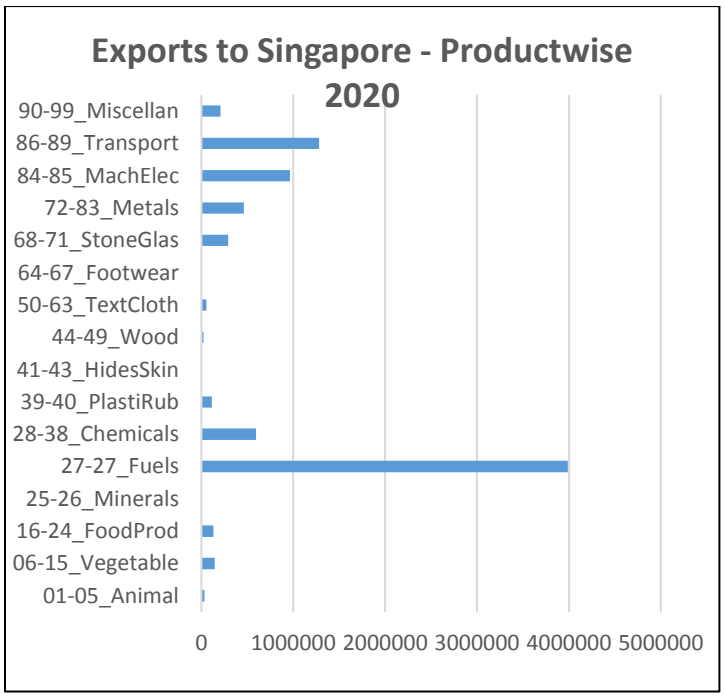


Table 5

Singapore		
	RCA>1	**RCA<1**
DS-RCA>1	27-27_Fuels	86-89_Transport 90-99_Miscellan
DS-RCA<1	01-05_Animal 06-15_Vegetable 25-26_Minerals 28-38_Chemicals 41-43_HidesSkin 50-63_TextCloth 68-71_StoneGlas 72-83_Metals	16-24_FoodProd 39-40_PlastiRub 44-49_Wood 64-67_Footwear 84-85_MachElec

5. THAILAND

Thailand accounts for 12.75% of India's exports to ASEAN and 11.86% of imports from ASEAN with overall trade deficit share of 10.03%. (Figure1 and Figure2). Thus, Thailand is big trading partner in terms of total trade with India.

The Figure 17 and 18 shows the trends of exports and imports of India-Thailand for the period 1991-2020. The exports and imports were almost of same magnitude till 2006-07. However, the imports picked up faster than exports recording huge trade deficit for the period 2007-20. As India entered into FTA with ASEAN in 2010, the gap between the exports and imports has been even more significant resulting into huge trade deficit.

Figure 17

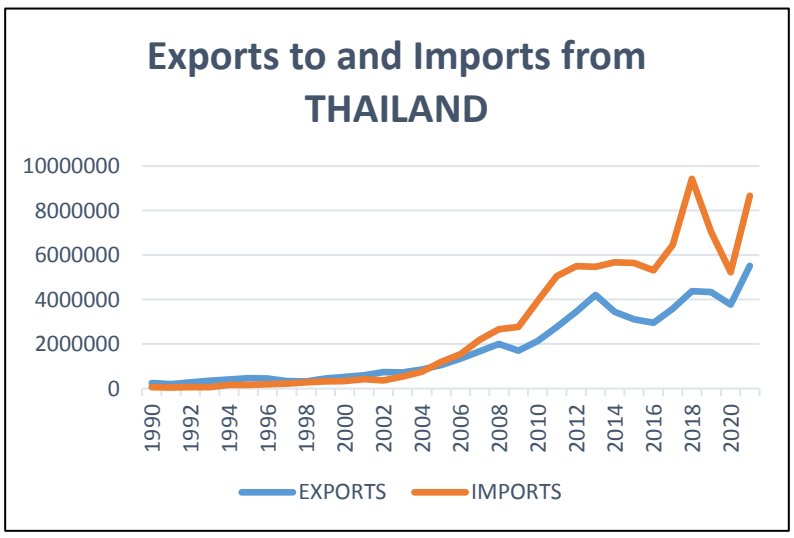
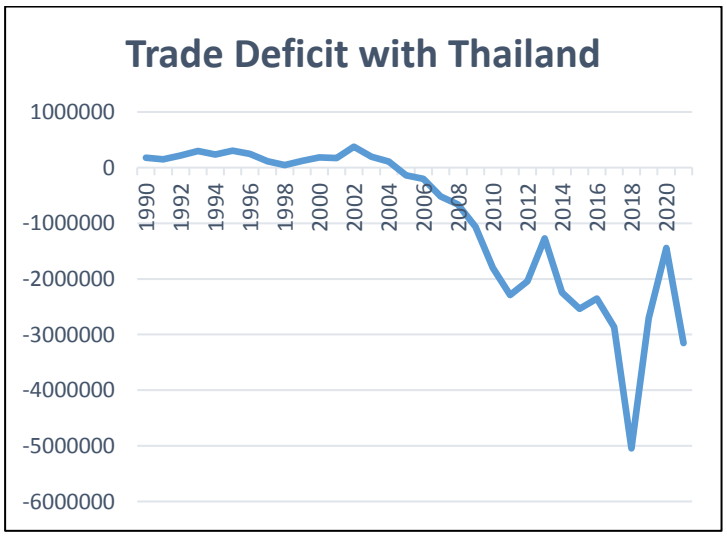


Figure 18



The Figure 19 and Table 6 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as Thailand in animals, minerals, chemicals and stones. The value of exports for these products have been significant in recent year, except for minerals. This provides the scope for increasing export value of minerals. Further, the products such as vegetable, fuels, textile and metals are the ones where India has a comparative advantage with respect to world, but not with Thailand, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 19

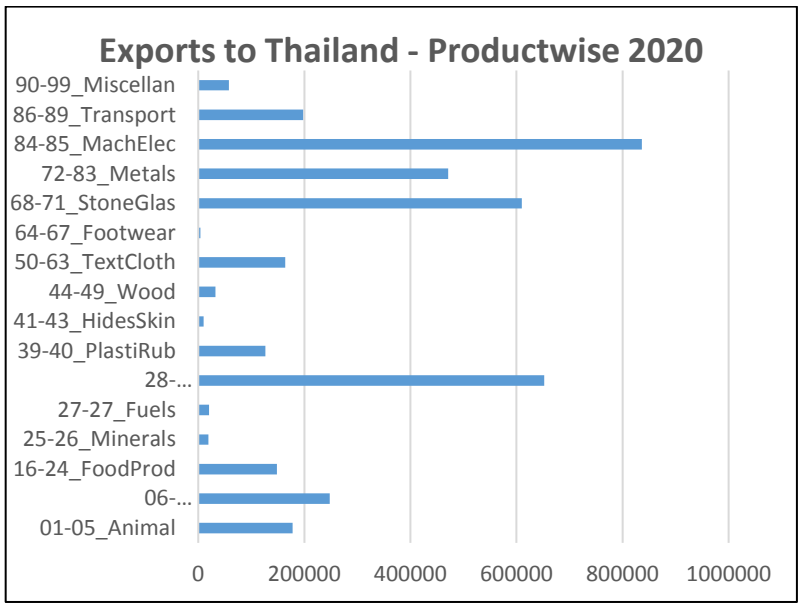


Table 6

Thailand		
	RCA>1	**RCA<1**
DS-RCA>1	01-05_Animal 25-26_Minerals 28-38_Chemicals 68-71_StoneGlas	16-24_FoodProd 44-49_Wood 84-85_MachElec 86-89_Transport
DS-RCA<1	06-15_Vegetable 27-27_Fuels 41-43_HidesSkin 50-63_TextCloth 72-83_Metals	39-40_PlastiRub 64-67_Footwear 90-99_Miscellan

EMPIRICAL RESULTS

1. Impact of India's FTA with ASEAN in 2010 on Exports, Imports and Trade Deficit

The Table 7 shows the regression results for the entire sample of 10 ASEAN countries in column 1 and column 2. The coefficient of t is 0.17 and 0.07988 in column 1 and 2 respectively and are significant, which indicates that India's exports to ASEAN grew at the rate of 17.08% and imports from ASEAN grew at the rate of 7.98% for the period of 1991-2010. However, after India joined with ASEAN in 2010, both exports and imports fell by 17.1% and 15.96% respectively as indicated by negative and significant coefficient of interaction term Di_t. Thus, overall there was no growth in exports, however, imports fell by 8% after 2010 probably due to global slowdown on the account of global financial crisis. As a result, trade deficit cannot be observed when all the countries are taken into account together. Therefore, the same analysis is done for 7 ASEAN countries with which India showed trade deficit over the time as seen in descriptive analysis before and for 3 ASEAN countries with which India showed trade surplus.

Table 7

Dependent Variable	All ASEAN COUNTRIES		7 TRADE DEFICIT ASEAN COUNTRIES		3 TRADE SURPLUS ASEAN COUNTRIES	
LN_EXPORTS	**India's Exports to ASEAN (1')**	**ASEAN's exports to India (2')**	**India's Exports to ASEAN (3')**	**ASEAN's exports to India (4')**	**India's Exports to ASEAN (5')**	**ASEAN's exports to India (6')**
ln_Distance	0.86069	4.435801	2.070715	2.830398*	-26.23894	-47.89905
COM_LANG	2.06002	1.258299	2.922269	3.093336*	11.8852*	22.59615*
EX_PGDP	0.00042	-0.0000171	0.0005981	-0.0000425*	0.0000142	-0.0019743*
IM_PGDP	-0.00001	0.0028261*	-2.13E-06	0.001569	-0.0003258	0.0050463*
t	0.1708899*	0.0798808*	0.1500675*	0.1419609*	0.2281861*	0.0096901
Di	3.875608*	2.620602*	4.141836*	0.4311772	2.907304*	0.5941648
Di_t	-0.1715505*	-0.1596651*	-0.1828979*	-0.1060175	-0.1263316*	-0.0132204
_cons	1.81800	-28.1809	-7.984678	-12.69827	220.2382	393.1747
Model Fitted	Random	Random	Random	Pooled	Pooled	Pooled

The column 3 and 4 shows the results for the sample of 7 trade deficit ASEAN countries. The positive and significant coefficient of t indicates that both exports and imports grew at the rate of 15% and 14.19% respectively for the period before 2010. However, exports fell by 18% and no significant change in growth of imports after 2010 as compared to previous period as indicated by interaction term. Thus, overall exports grew at negative growth of 3% while no significant change in imports. Hence, India reported huge trade deficit with these 7 ASEAN countries with gap widening after 2010.

The column 5 and 6 shows the results for 3 trade surplus ASEAN countries. The positive and significant coefficient of t in column 5 shows that exports grew at the rate of 22.8% while no significant growth in imports before 2010. The exports declined by 12.6% while no significant change in import's growth after 2010. Thus, overall, the exports grew at the lower rate of 10% and imports showed no significant change. Hence, overall trade surplus has been declining with these 3 ASEAN countries.

2. DETERMINANTS OF TRADE FLOWS

In order to check whether the application of OLS will lead to spurious regression, we test for the non-stationarity of each variable by using unit root test. Table 8 displays the Dickey Fuller Statistics for testing the unit root hypothesis at levels. It can be observed that none of the variables for each importing country is significant at 5% level of significance. Thus, the null hypothesis of unit root cannot be rejected and thereby the variables are non-stationary at levels.

Table 8 (Unit Root Test at Levels)

Importing Country	Bilateral Real Exports (Xj/UVX)	Real Imports of Buyer country (Mj/Pyj)	India's Relative Export Price Index (UVX/Pyj)
Brunei	-2.447	-0.499	-1.716
Indonesia	-1.741	-1.842	-2.28
Malaysia	-1.189	-2.415	-1.973
Philippines	-1.606	-1.695	-2.685
Singapore	-1.806	-1.754	-1.425
Thailand	-1.776	-1.328	-2.358

Table 9 (Unit Root Test at First Difference)

Importing Country	Bilateral Real Exports (Xj/UVX)	Real Imports of Buyer country (Mj/Pyj)	India's Relative Export Price Index (UVX/Pyj)
Brunei	-8.739	-4.847	-4.457
Indonesia	-4.5	-4.403	-4.467
Malaysia	-5.338	-5.015	-4.547
Philippines	-5.329	-4.551	-3.933
Singapore	-4.668	-5.042	-4.759
Thailand	-4.367	-4.658	-4.479

However, the Table 9 displays the Dickey Fuller Statistics for testing the unit root hypothesis at first difference. It can be observed that all the variable are significant at 5% level of significance for each importing country. Thus, the null hypothesis of unit root can be rejected and thereby the variables are stationary at first difference. The results for other remaining countries could not be conducted because for each importing country, some variables were stationary at levels and some at first difference.

Table 10

Importing Country	Real import bill to jth ASEAN country (Mj/Pyj)	India's export price relative to domestic price of jth country (UVX/Pyj)	Intercept
Brunei	2.492805*	-7.39289*	-7.401545*
Indonesia	1.159492*	-1.589644*	-2.445144*
Malaysia	2.764576*	-2.476555*	-12.44174*
Philippines	1.527997*	-2.305049*	-4.716142*
Singapore	2.203385*	-0.2438462	-9.536014*
Thailand	1.668269*	-2.054647*	-5.899744*

Table 10 shows that the signs of the two explanatory variables are as per the expectation. The coefficient of real imports of each ASEAN country is found to be statistically significant at 5% level of significance and value greater than 1. This indicates that India's exports are highly elastic with respect to each ASEAN real import demand. The highest elasticity of India's exports with respect to ASEAN imports have been recorded for Malaysia, Brunei and Singapore, indicating 1 percentage point increase in ASEAN imports lead to 2.7, 2.4 and 2.2 percentage point increase in India's exports to the respective ASEAN country.

The coefficient of India's export price relative to ASEAN domestic price is found to be significant at 5% level and value greater than 1 for all ASEAN country in the Table 10, except for Singapore. This indicates that India's exports are highly elastic to the price competitiveness of its exports. The highest price elasticity is found for Brunei, followed by Malaysia, Philippines and Thailand. This indicates that 1 percentage point decrease in India's export price relative to ASEAN domestic price lead to 7.39, 2.4, 2.3 and 2.07 percentage points increase in India's exports to the respective ASEAN country. However, such a price competitiveness doesnot impact India's exports to Singapore.

Thus, the expenditure effect on India's exports have been significant, as the demand for India's exports are positively influenced by imports from ASEAN. In addition, India's exports are price competitive in ASEAN market, thereby, improving upon price competitiveness can result into better performance of India's exports to ASEAN.

3. TRADE CREATION AND TRADE DIVERSION EFFECTS

The Table 11 shows that the panel results for standard gravity model with trade creation and trade diversion effects for the entire set of countries. It found that the standard gravity variables tend to be significant and behave in a manner consistent with the theoretical models. For instance, COMLANG and CONTIG have a positive coefficient and are significant indicating that the common language and continuity of regions have positive impact on bilateral exports of the countries. Variable Landlocked has a negative and significant coefficient indicating that landlocked countries have a lower prospects of higher bilateral exports. Exporting as well importing country per capita GDP have a positive influence on bilateral exports as growth of country increases the exports to and imports from the other country.

Table 11

ln_Exports	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
ln_Distance	0.0888631	0.20007	0.44	0.657	-0.303267	0.4809931
COMLANG	1.076973	0.347953	3.1	0.002	0.3949979	1.758949
CONTIG	1.541319	0.5554066	2.78	0.006	0.4527424	2.629896
LANDLOCKED	-2.579051	0.4416954	-5.84	0.000	-3.444758	-1.713343
EX_PGDP	0.0000485	8.47E-07	57.24	0.000	0.0000468	0.0000501
IM_PGDP	0.0001323	0.0000422	3.13	0.002	0.0000496	0.000215
TRADE_CREATION	-0.1860784	0.3764095	-0.49	0.621	-0.9238275	0.5516707
TRADE_DIVERSION	-1.927638	0.3790902	-5.08	0.000	-2.670641	-1.184635
_cons	11.92827	1.619674	7.36	0.000	8.753769	15.10277

However, the variables which are of significant interest are Trade Creation and Trade Diversion. It was observed that coefficient of Trade Creation came out to be insignificant while coefficient of Trade Diversion is negative and significant. This indicates that after the establishment of AFTA, the bilateral exports between the ASEAN countries to those countries outside trade agreement decreased by 1.92%, keeping other things constant. Thus, AFTA has been trade diverting rather than trade creating for the entire world economy as a whole.

DESCRIPTIVE ANALYSIS

India – RCEP: Trade Pattern Analysis

The RCEP agreement is negotiated between ASEAN countries and their FTA partners which are Australia, China, Japan, South Korea and New Zealand. The Table 12 shows India's trade value with each of the other 5 countries for the period 1991 to 2020. It can be observed that India runs huge trade deficit with 4 out of 5 countries with the highest recorded with China followed by South Korea and Japan. However, India recorded trade surplus with New Zealand.

Table 12

INDIA'S TRADE PATTERN: COUNTRY-WISE (IN 1000USD) 2020			
Partner Countries	**Exports**	**Imports**	**Trade Deficit**
Australia	3471126.903	7263295.691	-3792168.788
China	19008266.74	58798824.68	-39790557.94
Japan	4043285.123	10206851.07	-6163565.944
South Korea	4516495.886	12168869	-7652373.118
New Zealand	439100.806	410837.552	28263.254

Country-wise Analysis

1. AUSTRALIA

Australia has been more of import source rather than export destination for India, resulting into India's huge trade deficit with Australia. The Figure 20 and 21 shows the trend of India's exports, imports and trade deficit with Australia for the period 1991-2020. It was found that the exports and imports were of similar magnitude till the period 2002-03. However, then the imports picked up faster than exports leading to huge trade deficit for the rest of the period. In addition, while the exports has been growing steadily at a constant rate, the imports has shown fluctuating trend over the period. It is the fluctuations in imports that has caused fluctuation in trade deficit.

Figure 20

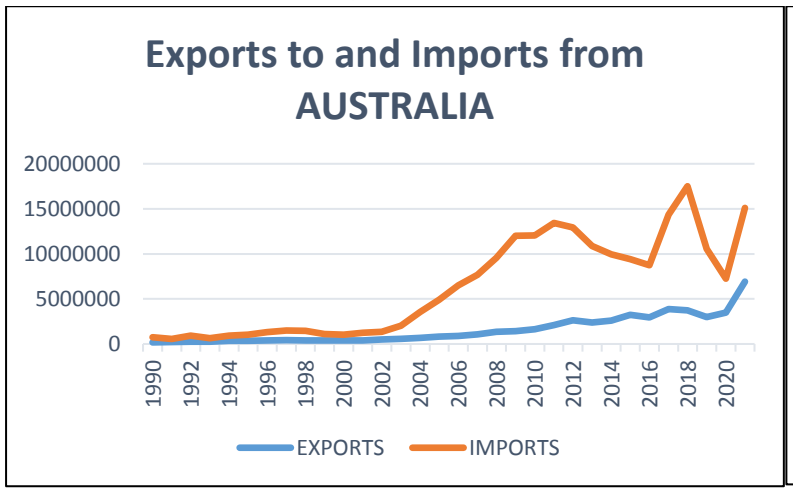
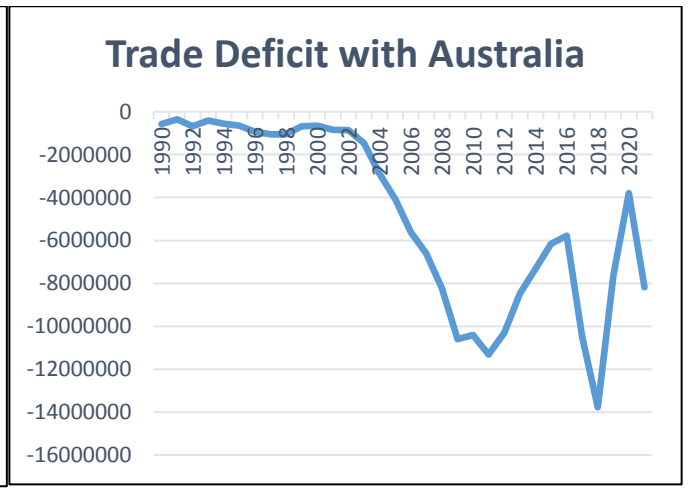


Figure 21



The Figure 22 and Table 13 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as Australia in vegetables, fuels, hides skin and textile clothing and the value of exports for these products have been significant in recent year. However, there is scope for improvement in exports of vegetables and hides skin. Further, the products such as animal, minerals, chemicals, stoneglas and metals are the ones where India has a comparative advantage with respect to world, but not with Australia, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 22

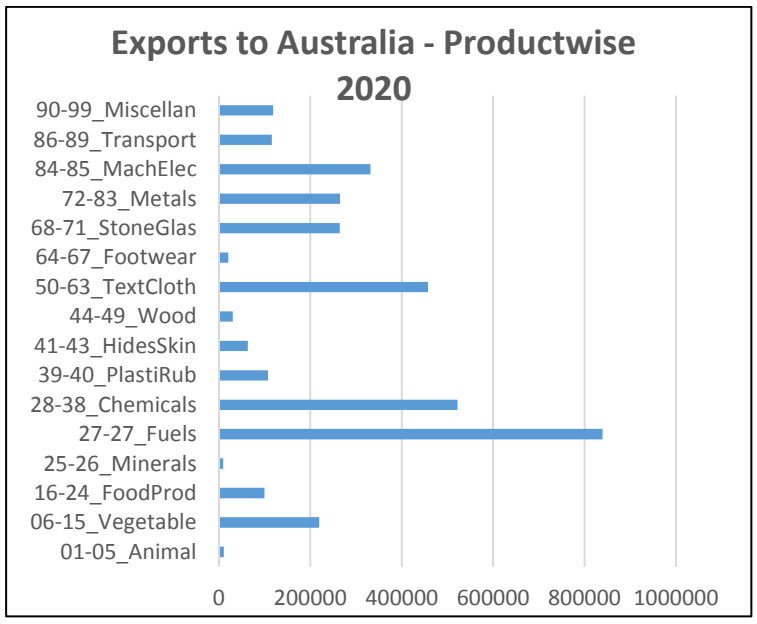


Table 13

Australia		
	RCA>1	**RCA<1**
DS-RCA>1	06-15_Vegetable 27-27_Fuels 41-43_HidesSkin 50-63_TextCloth	90-99_Miscellan
DS-RCA<1	01-05_Animal 25-26_Minerals 28-38_Chemicals 68-71_StoneGlas 72-83_Metals	16-24_FoodProd 39-40_PlastiRub 44-49_Wood 64-67_Footwear 84-85_MachElec 86-89_Transport

2. CHINA

China has been more of import source rather than export destination for India, resulting into India's highest trade deficit with China. The Figure 23 and 24 shows the trend of India's exports, imports and trade deficit with China for the period 1991-2020. It was found that the exports and imports were of similar magnitude till the period 2004-05. However, then the imports picked up faster than exports leading to huge trade deficit for the rest of the period. In addition, while the exports has been growing steadily at a constant rate, the imports has shown fluctuating trend over the period. It is the fluctuations in imports that has caused fluctuation in trade deficit.

Figure 23

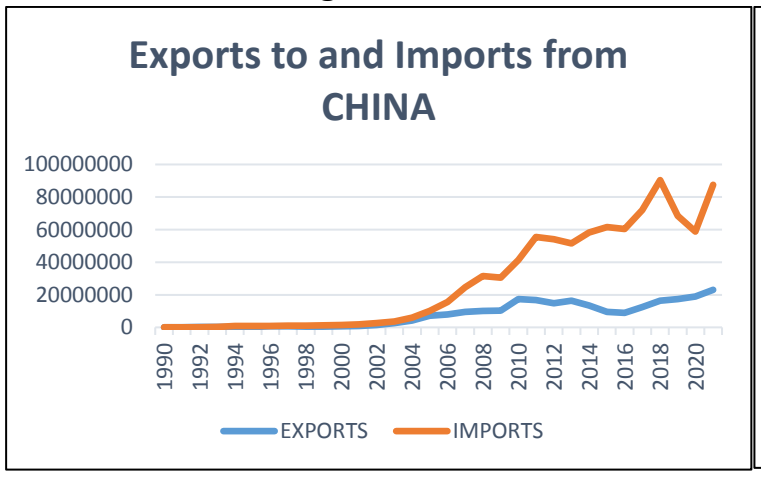


Figure 24

The Figure 25 and Table 14 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as China in animals, minerals, chemicals, textile clothing and metals. The value of exports for minerals, chemicals and metals have been significant in recent year. However, there is scope for improvement in exports of animals and textiles. Further, the products such as vegetables, fuels, Hidesskin and stoneglas are the ones where India has a comparative advantage with respect to world, but not with China, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 25

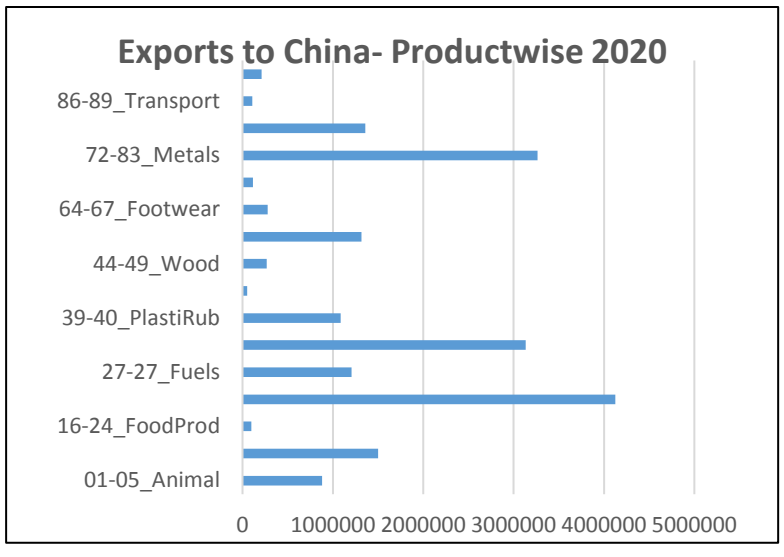


Table 14

China		
	RCA>1	**RCA<1**
DS-RCA>1	01-05_Animal 25-26_Minerals 28-38_Chemicals 50-63_TextCloth 72-83_Metals	39-40_PlastiRub 44-49_Wood 64-67_Footwear
DS-RCA<1	06-15_Vegetable 27-27_Fuels 41-43_HidesSkin 68-71_StoneGlas	16-24_FoodProd 84-85_MachElec 86-89_Transport 90-99_Miscellan

3. JAPAN

Japan has been more of import source rather than export destination for India, resulting into India's huge trade deficit with Japan. The Figure 26 and 27 shows the trend of India's exports, imports and trade deficit with Japan for the period 1991-2020. It was found that the exports and imports were of similar magnitude till the period 2002-03. However, then the imports picked up faster than exports leading to huge trade deficit for the rest of the period. In addition, the gap between the exports and imports have been widening over the time, resulting to increasing trade deficits with Japan.

Figure 26

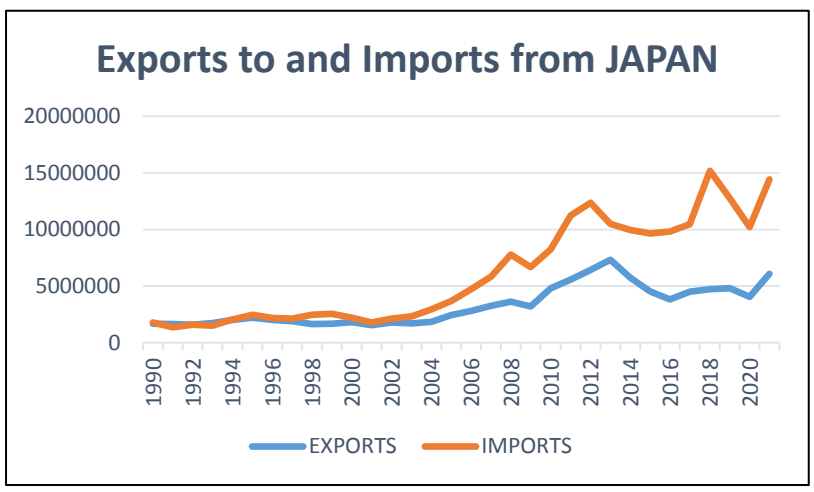
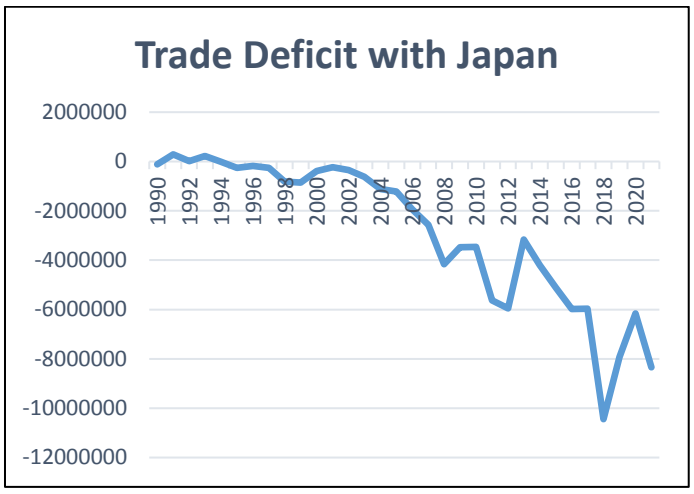


Figure 27



The Figure 28 and Table 15 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as Japan in animals, minerals, chemicals, stoneglas and metals. The value of exports for these products have been significant in recent year. However, there is scope for improvement in exports of minerals. Further, the products such as vegetables, fuels, Hidesskin and textile clothing are the ones where India has a comparative advantage with respect to world, but not with Japan, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 28

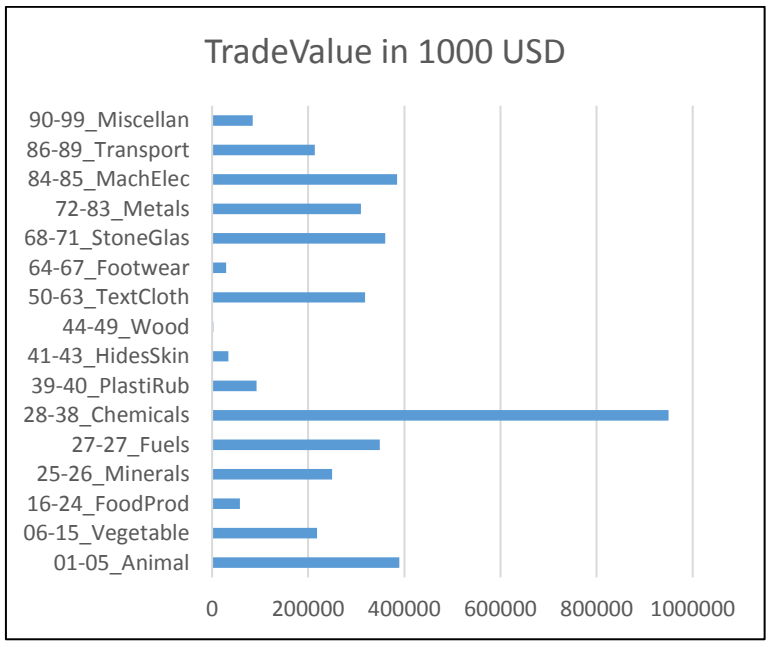


Table 15

Japan		
	RCA>1	**RCA<1**
DS-RCA>1	01-05_Animal 25-26_Minerals 28-38_Chemicals 68-71_StoneGlas 72-83_Metals	86-89_Transport
DS-RCA<1	06-15_Vegetable 27-27_Fuels 41-43_HidesSkin 50-63_TextCloth	16-24_FoodProd 39-40_PlastiRub 44-49_Wood 64-67_Footwear 84-85_MachElec 90-99_Miscellan

4. SOUTH KOREA

South Korea has been more of import source rather than export destination for India, resulting into India's huge trade deficit with South Korea. The Figure 29 and 30 shows the trend of India's exports, imports and trade deficit with South Korea for the period 1991-2020. It was found that the exports and imports were of similar magnitude till the period 2002-03. However, then the imports picked up faster than exports leading to huge trade deficit for the rest of the period. In addition, the gap between the exports and imports have been widening over the time, resulting to increasing trade deficits with South Korea.

Figure 29

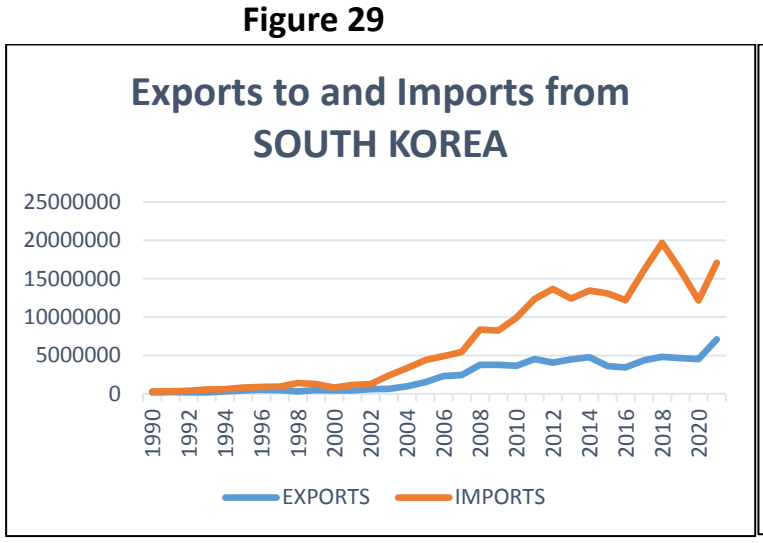
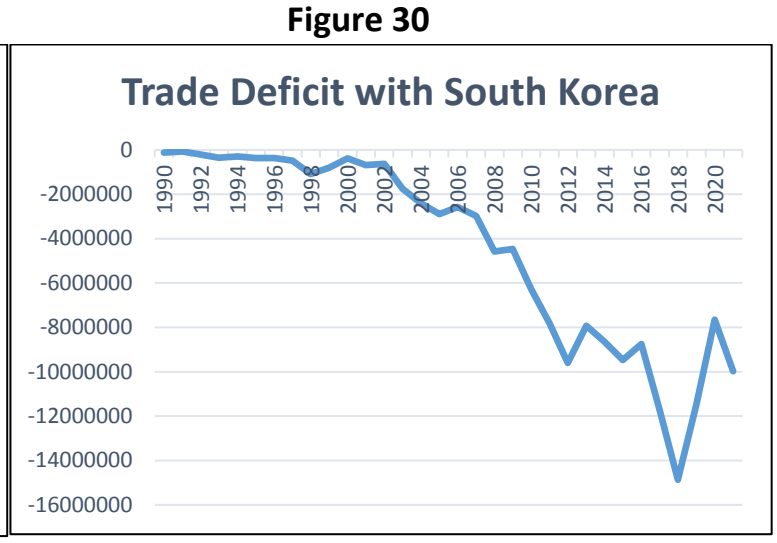


Figure 30



The Figure 31 and Table 16 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as South Korea in fuels and metals. The value of exports for these products have been significant in recent year. However, there is scope for improvement in exports of fuels. Further, the products such as animals, vegetables, minerals, Hidesskin, stoneglas and textile clothing are the ones where India has a comparative advantage with respect to world, but not with South Korea, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 31

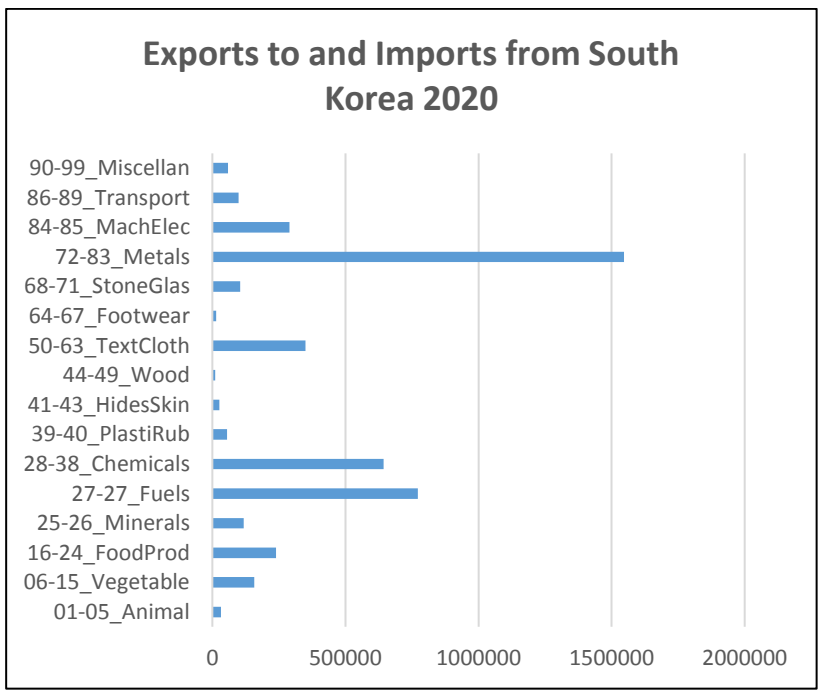


Table 16

Korea, Rep.		
	RCA>1	**RCA<1**
DS-RCA>1	27-27_Fuels 72-83_Metals	16-24_FoodProd
DS-RCA<1	01-05_Animal 06-15_Vegetable 25-26_Minerals 28-38_Chemicals 41-43_HidesSkin 50-63_TextCloth 68-71_StoneGlas	39-40_PlastiRub 44-49_Wood 64-67_Footwear 84-85_MachElec 86-89_Transport 90-99_Miscellan

5. NEW ZEALAND

New Zealand has been more of export destination rather than import source for India, resulting into India's trade surplus with New Zealand in 2020. The Figure 32 and 33 shows the trend of India's exports, imports and trade deficit with New Zealand for the period 1991-2020. It was found that the exports and imports were of similar magnitude till the period 2004-05. However, then the imports picked up faster than exports leading to huge trade deficit for the rest of the period. However, there was a jump in exports over imports resulting into trade surplus in 2020.

Figure 32

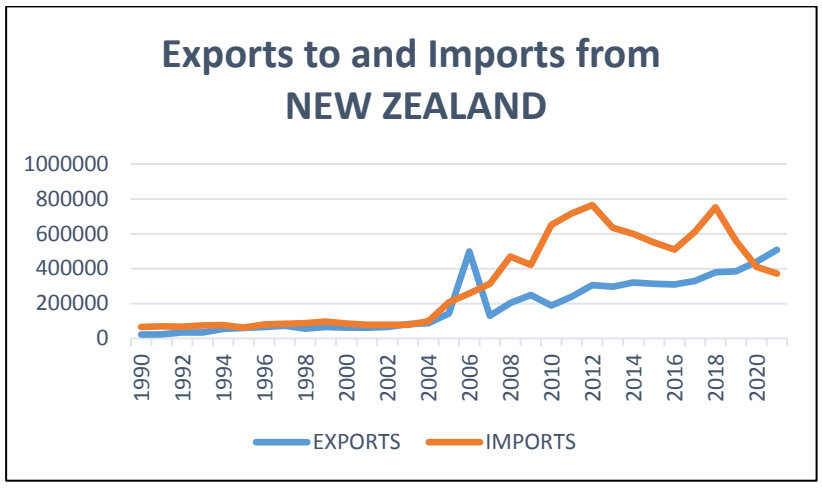
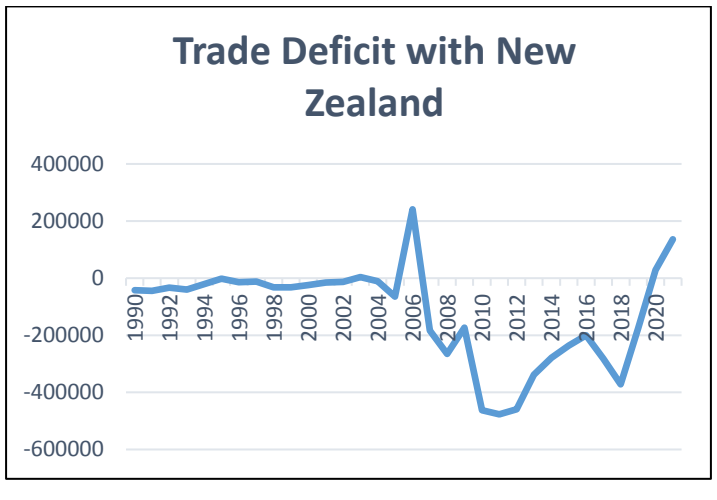


Figure 33



The Figure 34 and Table 17 shows the product-wise analysis. India has a comparative advantage with respect to both world as well as New Zealand in vegetables, chemicals, hidesskin and textile clothing. The value of exports for these products have been significant in recent year. However, there is scope for improvement in exports of vegetables and hidesskin. Further, the products such as animals, minerals, fuel, stoneglas and metals are the ones where India has a comparative advantage with respect to world, but not with New Zealand, so there is scope of building exports of these products to improve export performance and reduce trade deficits.

Figure 34

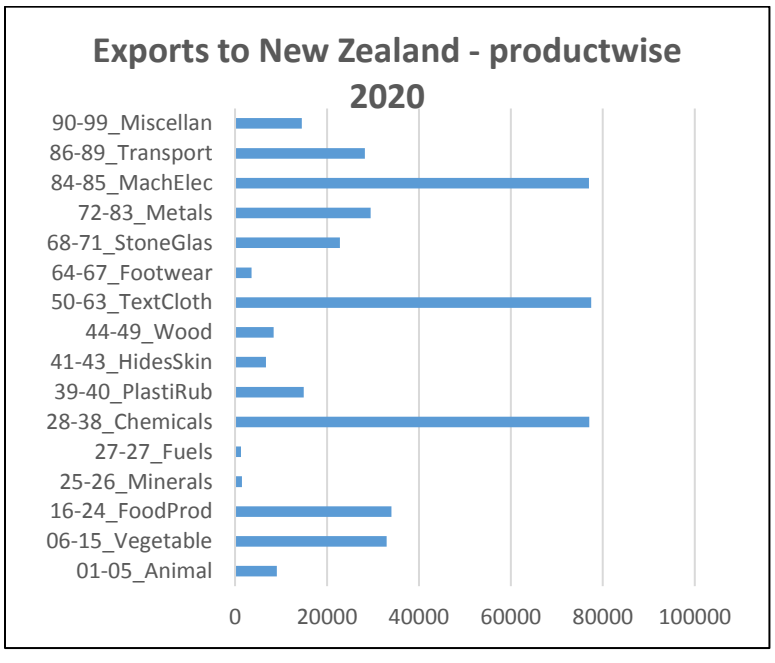


Table 17

New Zealand		
	RCA>1	**RCA<1**
DS-RCA>1	06-15_Vegetable 28-38_Chemicals 41-43_HidesSkin 50-63_TextCloth	16-24_FoodProd 44-49_Wood 64-67_Footwear 84-85_MachElec 90-99_Miscellan
DS-RCA<1	01-05_Animal 25-26_Minerals 27-27_Fuels 68-71_StoneGlas 72-83_Metals	39-40_PlastiRub 86-89_Transport

SMART SIMULATION ANALYSIS

When India initiates 100% tariff cut against ASEAN and its 5 FTA partners, they gain the access to Indian markets and their exports are going to increase substantially. Table 18 and 19 shows the percentage change in exports of these countries due to 100 percent tariff reduction by India. It can be observed from the Table 18 that all the countries are gaining due to such as tariff cuts as observed by positive percentage change in their exports.

The highest export gain is for New Zealand which is 30.108% increase in its exports. This is followed by China and Australia with 29.993% and 10.73% increase in their exports respectively after the tariff cuts.

Table 18

Partner Name	Exports Before in 1000 USD	Exports After in 1000 USD	Export Change In Revenue in 1000 USD	Percentage change in exports
New Zealand	372171.942	484226.582	112054.643	30.108%
China	56874864.69	73933086.98	17058222.37	29.993%
Australia	7164823.752	7933831.092	769007.241	10.733%
Philippines	495448.117	532167.843	36719.728	7.411%
Thailand	5084007.619	5453126.728	369119.123	7.260%
Indonesia	11962778.31	12751522.85	788744.608	6.593%
Japan	9850414.655	10448211.75	597797.074	6.069%
Korea, Rep.	11211663.36	11836001.15	624337.815	5.569%
Malaysia	6816896.687	7192646.011	375749.351	5.512%
Brunei	422733.249	445385.876	22652.631	5.359%
Vietnam	5477310.627	5732410.826	255100.133	4.657%
Cambodia	38144.885	39610.036	1465.151	3.841%
Singapore	11506110.51	11931136.63	425026.13	3.694%
Myanmar	575338.678	591153.245	15814.566	2.749%

The Table 19 shows the percentage change in exports for the countries that are going to lose due to 100% tariff cut by India against ASEAN and its 5 FTA partners as the trade will be diverted to these countries from the rest of the world. It can be observed that the highest loss is recorded for Sri Lanka followed by Zimbabwe which accounts for 14.8% and 11.58% decrease in exports after the implementation of 100% tariff cut. The neighbouring countries such as Nepal, Bangladesh and Pakistan also saw decline in their exports by 2-4%. It is interesting to note that despite being part of ASEAN, Lao also experience decline in its exports by 1.45%. The developed world also see significant decline in percentage of their exports such as United States and United Kingdom.

Table 19

Partner Name	Exports Before in 1000 USD	Exports After in 1000 USD	Export Change In Revenue in 1000 USD	Percentage change in exports
Sri Lanka	660519.068	562742.597	-97776.469	-14.803%
Zimbabwe	2482.644	2195.133	-287.511	-11.581%
Nepal	601743.551	573090.163	-28653.385	-4.762%
Italy	3467218.615	3334795.066	-132423.557	-3.819%
Germany	9233550.392	8914906.73	-318643.687	-3.451%
France	2904810.622	2820337.52	-84473.107	-2.908%
Mexico	869510.32	846458.143	-23052.186	-2.651%
Netherlands	2866128.576	2790372.327	-75756.248	-2.643%
United Kingdom	4562664.79	4464343.402	-98321.375	-2.155%
United States	21643172.32	21292566.05	-350606.247	-1.620%
Bangladesh	1008527.857	992281.907	-16245.946	-1.611%
Iran, Islamic Rep.	287852.113	283540.494	-4311.622	-1.498%
Lao PDR	2074.906	2044.824	-30.082	-1.450%
Mauritius	36264.713	35780.791	-483.922	-1.334%
Pakistan	2343.689	2316.171	-27.518	-1.174%
Brazil	2001954.082	1980382.472	-21571.59	-1.078%

The Results from the Simulation exercise provides impacts across different dimensions – Market view, Revenue Impact, Welfare Impact and Trade Creation Impact. Table 20 shows the results for market view. It can be observed that India's Imports will increase by 18.806 Billion US Dollars. Because of the reduction in tariff, the tariff collection revenue will decline by 13 Billion US Dollar. However, due to reduction in tariff, prices will decline and thereby leads to consumer surplus of 1.5 billion US Dollar.

Table 20

MARKET VIEW					
Imports Before in 1000 USD	**Import Change**	**Tariff Revenue in 1000 USD**	**Tariff New Revenue in 1000 USD**	**Tariff Change In Revenue in 1000 USD**	**Consumer Surplus in 1000 USD**
2919,07,499.34	188,06,290.33	304,25,173.33	174,16,501.88	-130,08,671.46	15,07,155.06

The Table 21 shows the revenue effect from the simulation exercise. It can be observed that it will lead to total trade value of 29 billion US dollars.

Table 21

REVENUE EFFECT				
Revenue Effect in 1000 USD	**Trade Total Effect in 1000 USD**	**Trade Value in 1000 USD**	**Old Weighted Rate**	**New Weighted Rate**
-69,88,551.984	188,06,290.33	29,19,07,499.3	10.42	5.61

The Table 22 shows the welfare impact out of the simulation exercise. It can be observed that it will lead to total welfare creation of 15 Billion US Dollars.

Table 22

WELFARE IMPACT				
Product Code	**Trade Total Effect in 1000 USD**	**Welfare in 1000 USD**	**New Weighted Rate**	**Old Weighted Rate**
Total	188,06,290.33	15,33,132.313	5.61	10.42

The Table 23 shows the trade creation effect out of the simulation exercise. It can be observed that such a 100% tariff cut will lead to total trade creation of 18.806 billion US Dollars whereas trade diversion is negligible.

Table 23

TRADE CREATION EFFECT					
Trade Total Effect in 1000 USD	**Price Effect**	**Trade Creation Effect in 1000 USD**	**Trade Diversion Effect in 1000 USD**	**Old Simple Duty Rate**	**New Simple Duty Rate**
188,06,290.33	-	188,06,290.33	0.11	10.42	5.61

CONCLUSION AND POLICY IMPLICATIONS

Overall, the paper finds India's increasing trade deficit with ASEAN nations for the entire period of 1991-2020. Since 2010, when India entered into Free Trade Agreement with ASEAN, the gap has been further widening between India's exports and imports with ASEAN nations resulting into huge trade deficit. In addition, the paper finds the list of product categories wherein India has a comparative advantage, however the trade volume with ASEAN is low. This provides the scope of improving India's trade deficits by targeting the exports of such product categories to markets wherein they bear destination based comparative advantage. Apart from that, the paper concludes that AFTA has overall led to trade diversion, rather than trade creations.

Moreover, India also recorded huge trade deficit with 5 other FTA partners over the same time frame of 1991-2020. The simulation model provides the useful insights that 100% tariff cut by India would lead to huge increase in India's imports, reduction in tariff revenue, enhanced consumer surplus and trade flows. All these evidences support India's decision to stay out of RCEP negotiations, given the current scenario and India's experience with existing trade agreements.

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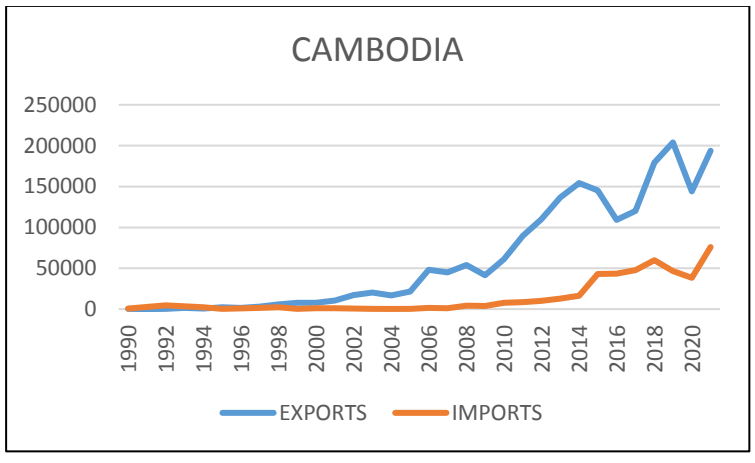
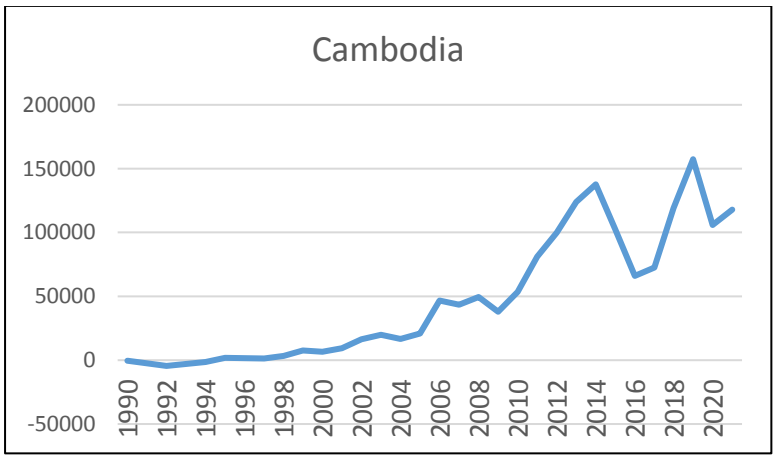
Appendix

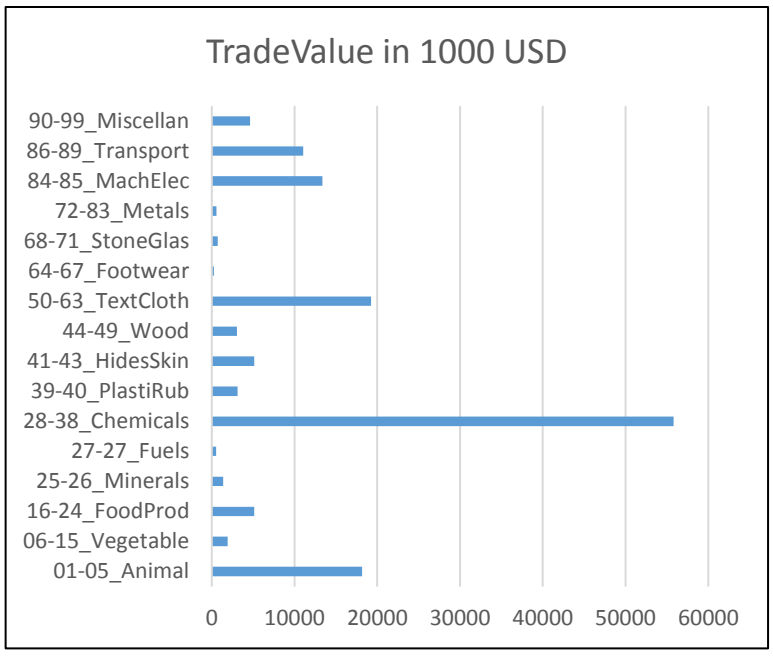
Country-wise Analysis

India's trade pattern analysis

6. CAMBODIA

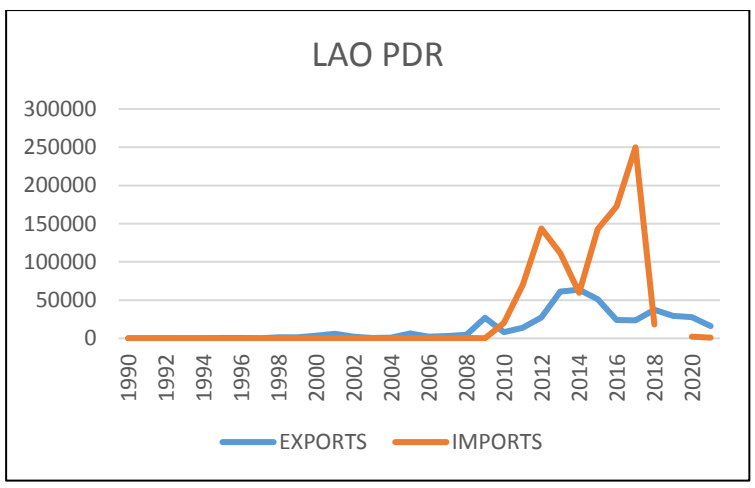


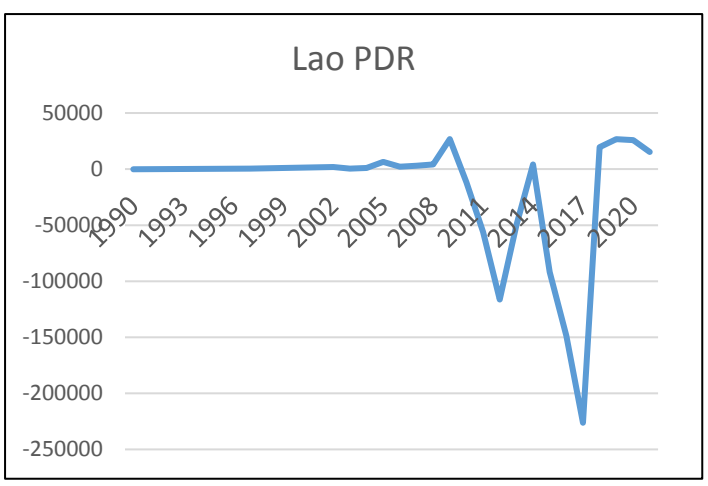


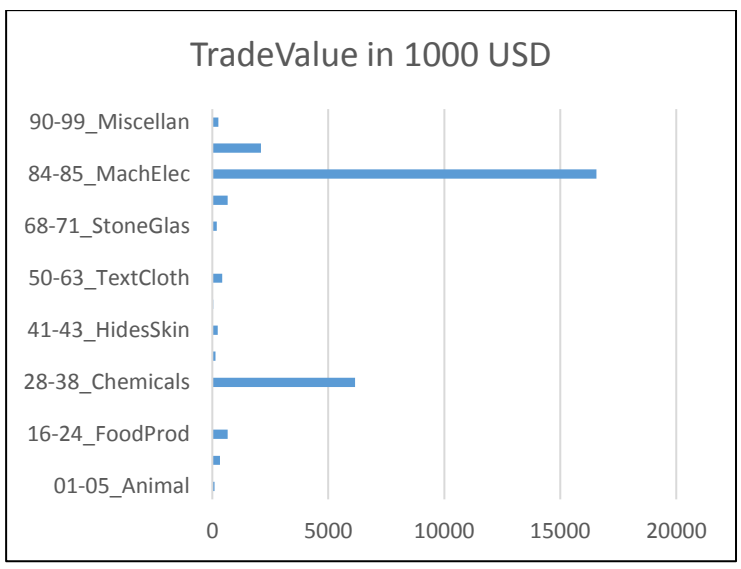


Cambodia		
DS-RCA>1	**RCA>1**	**RCA<1**
	01-05_Animal 25-26_Minerals 28-38_Chemicals 41-43_HidesSkin	44-49_Wood 84-85_MachElec 86-89_Transport 90-99_Miscellan
DS-RCA<1	06-15_Vegetable 27-27_Fuels 50-63_TextCloth 68-71_StoneGlas 72-83_Metals	16-24_FoodProd 39-40_PlastiRub 64-67_Footwear

7. LAO PDR

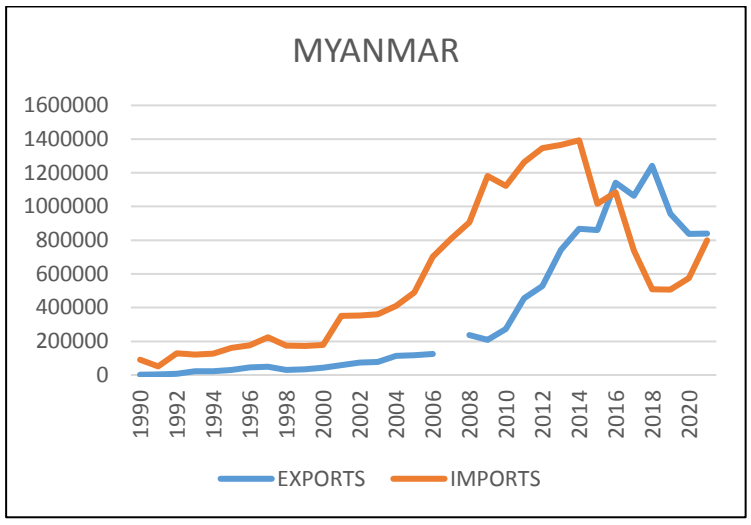


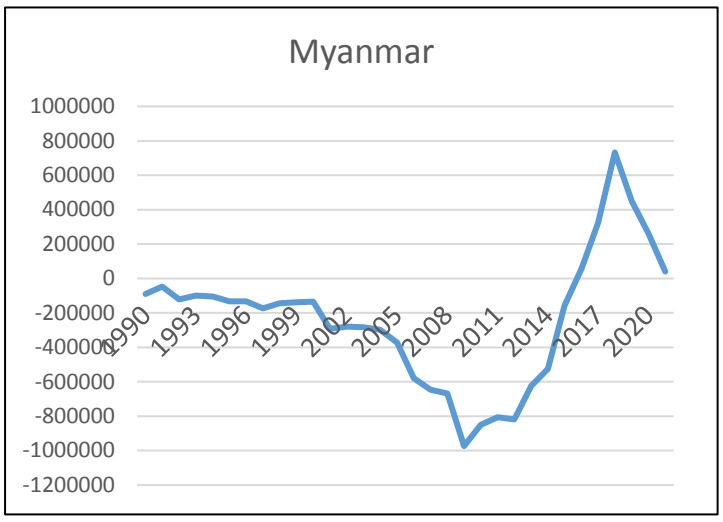


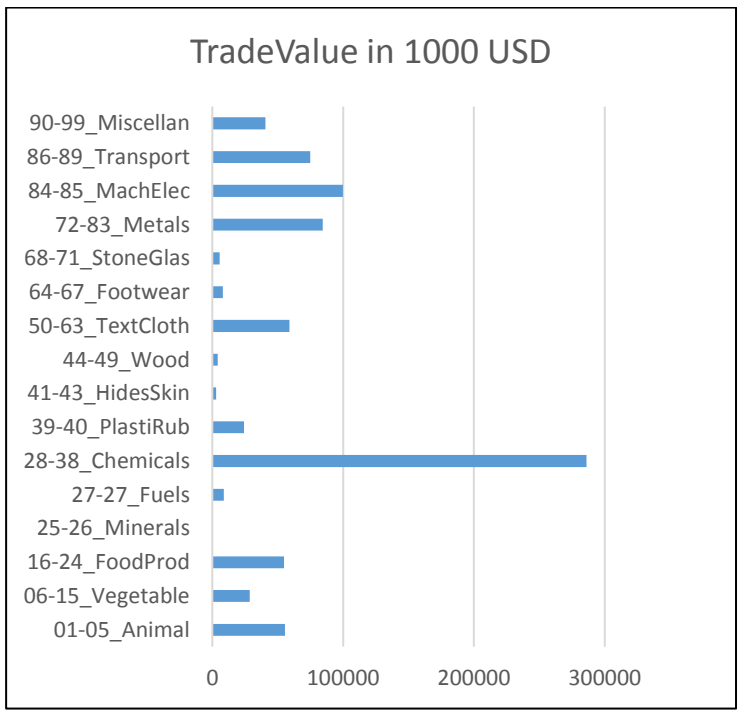


Lao PDR		
DS-RCA>1	**RCA>1**	**RCA<1**
	28-38_Chemicals 41-43_HidesSkin	84-85_MachElec 86-89_Transport
DS-RCA<1	01-05_Animal 06-15_Vegetable 27-27_Fuels 50-63_TextCloth 68-71_StoneGlas 72-83_Metals	16-24_FoodProd 25-26_Minerals 39-40_PlastiRub 44-49_Wood 64-67_Footwear 90-99_Miscellan

8. MYANMAR

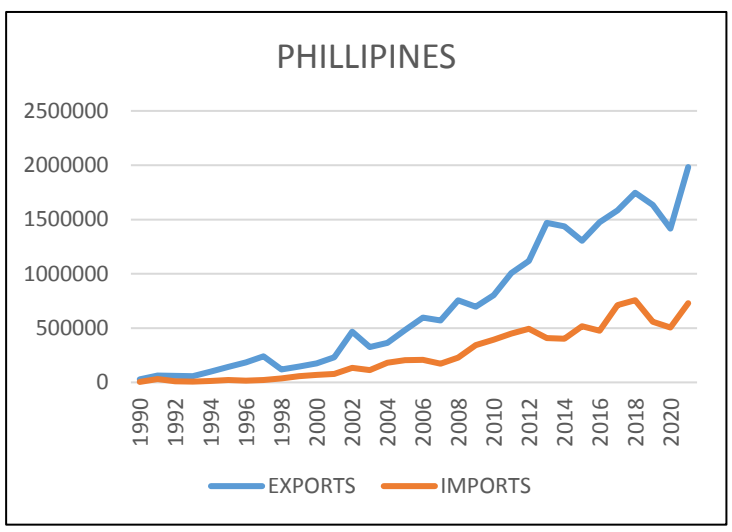


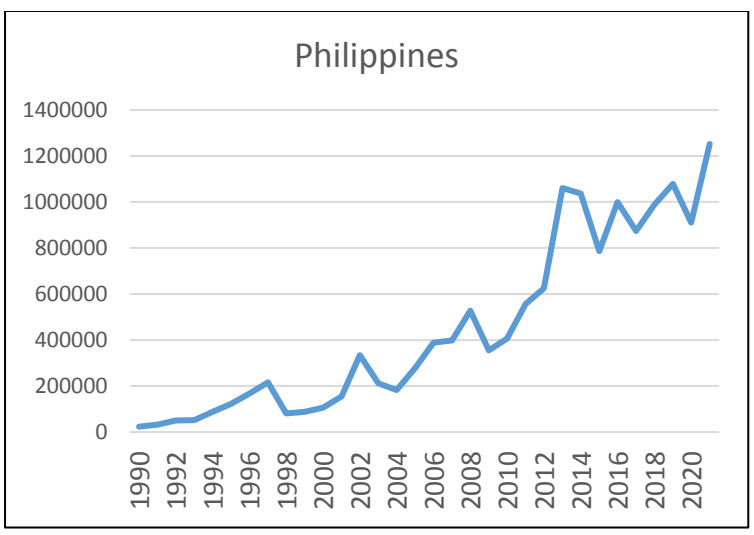


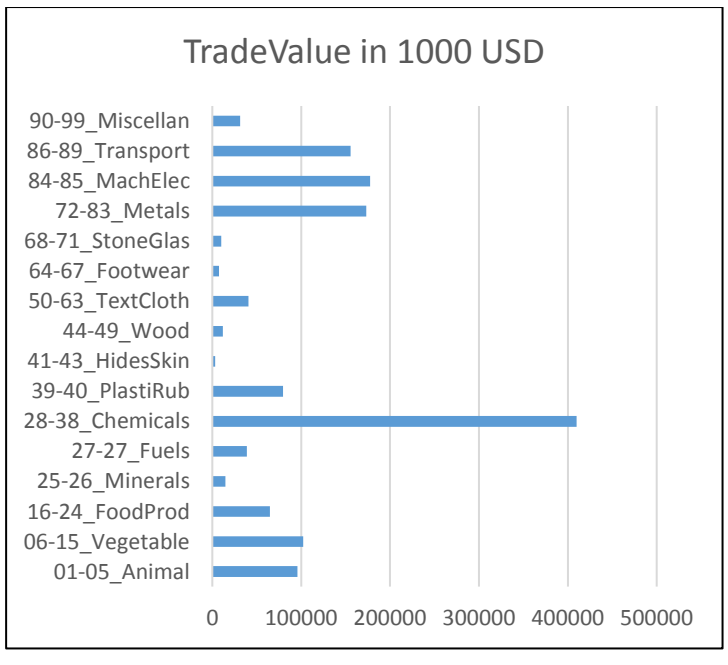


Myanmar		
	RCA>1	**RCA<1**
DS-RCA>1	01-05_Animal 28-38_Chemicals	16-24_FoodProd 64-67_Footwear 84-85_MachElec 86-89_Transport 90-99_Miscellan
DS-RCA<1	06-15_Vegetable 25-26_Minerals 27-27_Fuels 41-43_HidesSkin 50-63_TextCloth 68-71_StoneGlas 72-83_Metals	39-40_PlastiRub 44-49_Wood

9. PHILIPPINES

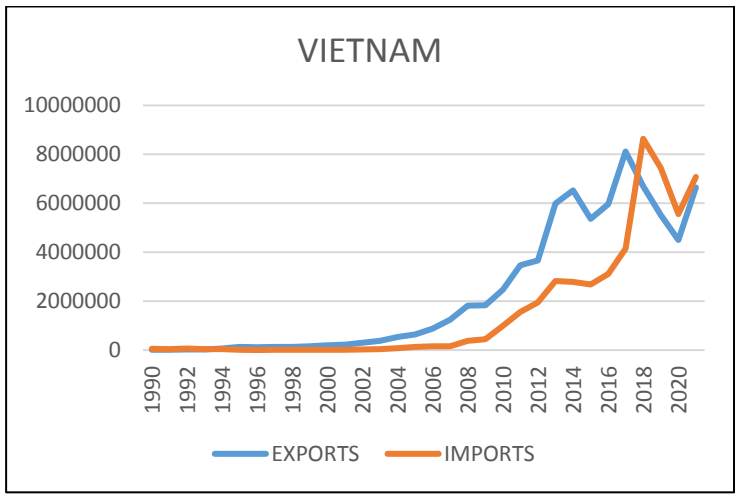


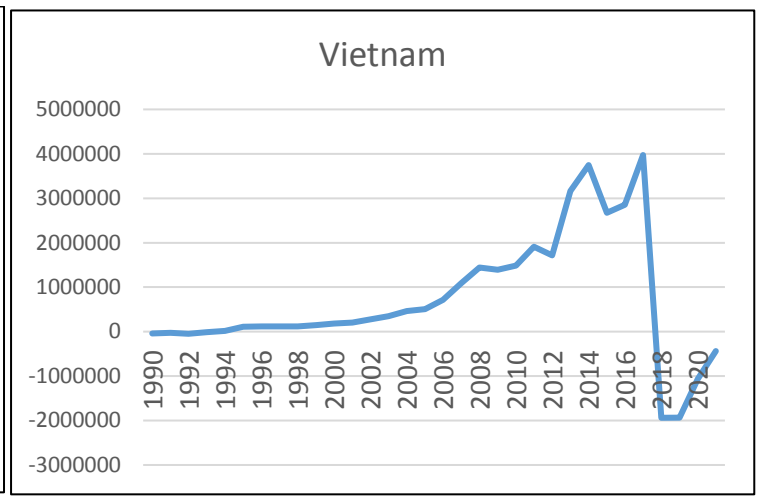


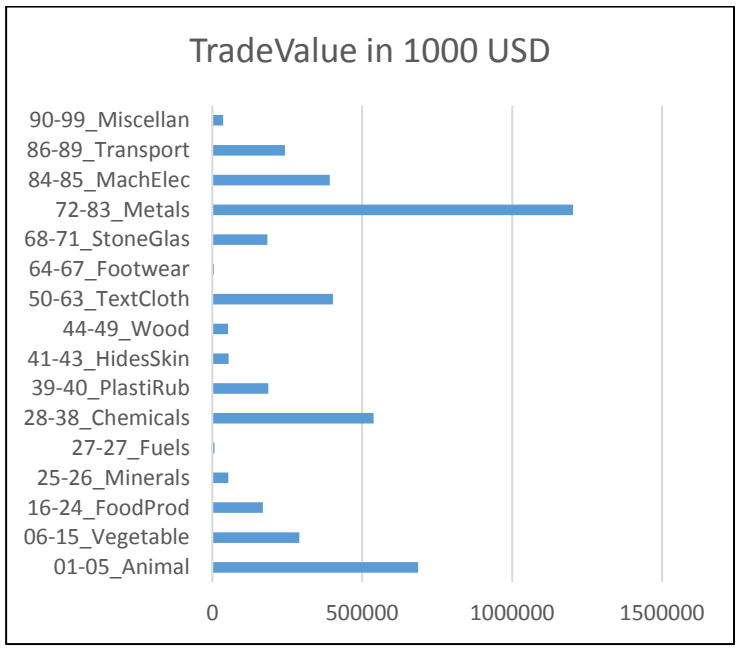


Philippines		
	RCA>1	**RCA<1**
DS-RCA>1	01-05_Animal 28-38_Chemicals 72-83_Metals	16-24_FoodProd 39-40_PlastiRub 86-89_Transport 90-99_Miscellan
DS-RCA<1	06-15_Vegetable 25-26_Minerals 27-27_Fuels 41-43_HidesSkin 50-63_TextCloth 68-71_StoneGlas	44-49_Wood 64-67_Footwear 84-85_MachElec

10.VIETNAM







Vietnam		
DS-RCA>1	**RCA>1**	**RCA<1**
	01-05_Animal 25-26_Minerals 28-38_Chemicals 41-43_HidesSkin 68-71_StoneGlas 72-83_Metals	16-24_FoodProd 44-49_Wood 86-89_Transport
DS-RCA<1	06-15_Vegetable 27-27_Fuels 50-63_TextCloth	39-40_PlastiRub 64-67_Footwear 84-85_MachElec 90-99_Miscellan