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# India's Possible Alignment with RCEP  and CPTPP:
## and its relative gains and losses

# India's Possible Alignment with RCEP & CPTPP and its relative gains and losses

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# Executive Summary

We use both partial (structural gravity model) and general equilibrium models to understand India's possible deeper alignment with 15-nation RCEP (Regional Comprehensive Economic Partnership) and 11-nation CPTPP (Comprehensive and Progressive Agreement for Trans-Pacific Partnership) mega trade blocs. There are 7 common members in RCEP-15 and CPTPP-11. The existing trade of India with the two mega trading blocs suggests that India should align with RCEP because India's trade with RCEP-15 is approximately $185 billion while with CPTPP it is lower to the tune of $70 billion. However, the general equilibrium model allows us to study the economy-wide impact of our deeper engagements and provides us with the policy responses of whether India should align with the RCEP or the CPTPP. The latter will depend on India's deeper engagements with the mega trading blocs with India following an atmanirbhar policy of promoting input and output-oriented technological progress in manufacturing and transport and communication. The deeper alignment policies go beyond tariff and non-tariff liberalization with capital and natural resource endowment movement and include global value chain participation with the adoption of output and input-oriented technological progress in either one nation or in all member states. An FTA simulation scenario with deeper integration clauses brings relatively the lowest welfare and VGDP growth for India whether it aligns with the RCEP or the CPTPP. The best scenario for India is when it aligns with either the RCEP or the CPTPP with the inclusion of deeper integration clauses being adopted with India following an atmabirbhar policy while others don't. We use a structural gravity model to analyse the RCEP and the CPTPP trade among themselves including India when the RCEP and the CPTPP form a union and when they as a mega block standalone liberalize using data for the year 2021.

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# 1. Introduction

In view of promoting free trade and economic interdependence among the member nations, two major free trade agreements were signed namely the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in the year 2018 and Regional Comprehensive Economic Partnership (RCEP) in the year 2020. The agenda includes strengthening of backward and forward linkages as well. The list of RCEP nations include ten ASEAN nations plus five partner nations namely, China, South Korea, Australia, Japan and New-Zealand. Further, the list of CPTPP nations include Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam. The CPTPP evolved from Trans-Pacific Strategic Economic Partnership Agreement (TPSEP) also known as T4 (SICE,2021) which was signed by four pacific rim countries namely Brunei, Chile, Singapore, and New Zealand in the year 2005. Eight more countries joined TPSEP namely Australia, Canada, Japan, Malaysia, Mexico, Peru, the United States, and Vietnam. Now this group of 12 members made a proposal to form Trans-Pacific Partnership (TPP), a trade agreement between countries bordering the Pacific Rim. Although the proposal was signed in 2016, the US withdrew and then 11 remaining members signed the new version known as the CPTPP in 2018.

Both regions seem to have huge potential. The RCEP includes more than 3 billion people or 45% of the world's population, a combined GDP of about $21.3 trillion, and accounts for about 40 percent of world trade (ASEAN Secretariat).

Further, if the prevalence of tariff barriers and non-tariff measures needs to be seen, refer to appendix 1 and 2 below:

In terms of the degree of liberalization, the RCEP is not as deep as the CPTPP. Although the RCEP & the CPTPP share various similarities with respect to their membership and aspiration. Both have seven common members, and target to bring free trade with open & competitive markets by encouraging their member states to remove tariffs, offer greater market access, and promote policies for easier trade and investment. In spite of these similarities, the CPTPP is more comprehensive than the RCEP as it covers virtually all sectors and aspects of trade in order to eliminate barriers. The CPTPP is a much more open and inclusive agreement because along with all the RCEP issues it also includes other important issues related to the development, environment, labor, transparency, regulatory coherence, anti-corruption, textiles & apparel, financial services & telecommunications, state-owned enterprises & designated monopolies,

competitiveness & business facilitation which are  not in the RCEP agreement making the CPTPP more comprehensive and exhaustive in the promotion of free trade as shown in the figure 1 given below:

**Figure 1: Showing the CPTPP is more comprehensive than the RCEP**
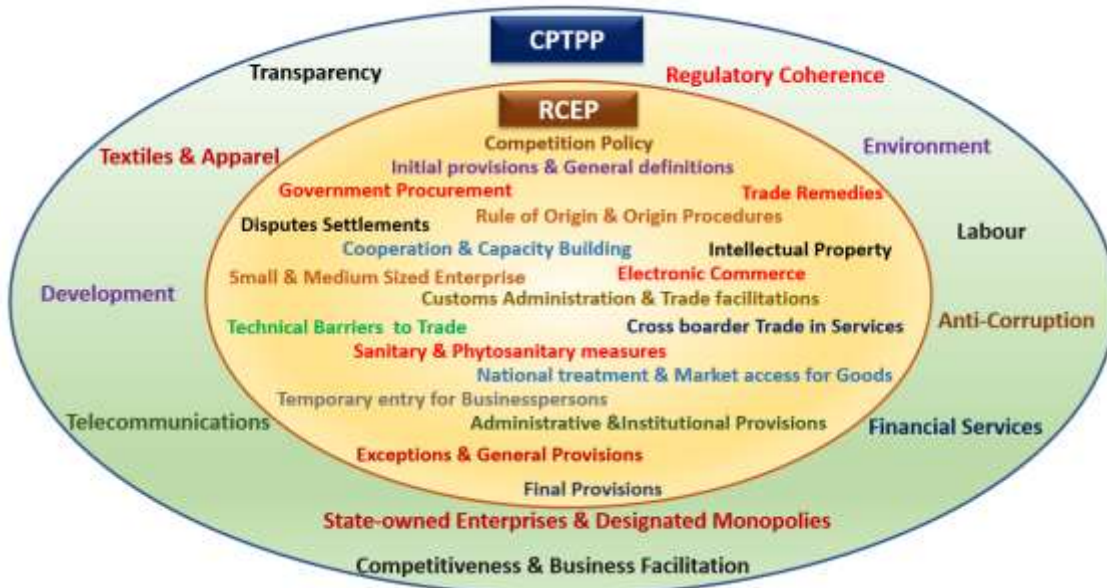


*Source: Prepared by Authors*

The comprehensiveness of the CPTPP can be seen in its holistic approach covering issues beyond the RCEP. CPTPP's primary objective is to promote tariff liberalization among the member nations and establish the procedures to protect intellectual property rights. The CPTPP aims to promote supply chain resilience and identify new areas for collaboration in the digital economy and green economy.

It covers issues like technical barriers to trade (TBTs), sanitary & phytosanitary measures (SPS), fair administration, transparent customs procedures which are also there in the RCEP.  The CPTPP has added a special focus on labor and its welfare which was not there in the RCEP by eliminating all forms of forced labor. The CPTPP aims to promote a consistent, transparent, and predictable trade environment. Unlike the RCEP, the CPTPP gives special focus on the environment and combating the illegal trade of wildlife species. Another important add-on part of the CPTPP is its concern for the environment which includes climate issues.

Further in the context of FDI, to boost infrastructure, the RCEP has initiated FDI in greenfield investment projects along with other finance projects both inside & outside the region. Many

FDI projects were done by the RCEP on Mergers & Acquisitions like food, beverages, transportation, etc. Between 2010-2020, the RCEP received $1.3 trillion in international project finance which is almost 26% of the world's total international project finance. The RCEP accounts for 12% of global financing deals in renewal energy. In its promotion of FDI, the RCEP also aims to promote Sustainable Development Goals (SDGs) in the region. To meet the target of SDGs, the RCEP encourages FDI in sectors like infrastructure, renewal energy, water, sanitation, healthcare, education, agriculture, etc.

The RCEP is a major global destination for FDI both inside and beyond the region. It accounts for about 24% of the global FDI flow in 2019. The annual inflow of FDI in the RCEP group has been increasing continuously. It was only $ 2.7 trillion in 2010 but it increased to $5.7 trillion in the year 2019 which was almost the average rate of growth of 9% per year.

But in the year 2019 due to the spread of Covid, the FDI flow from the RCEP got affected and fell by 4% due to the lockdown and slowdown of economic activities. The fall continues in 2020 as well. As a result, all FDI deals signed by the RCEP got affected. It hampered cross-border trade agreements, mergers & acquisitions, many greenfield projects were either cancelled or delayed which overall slowed down the pace of FDI undertaken by the RCEP.

However, FDI inflow in the RCEP region is mainly concentrated in 5 countries namely China, Singapore, Australia, Indonesia & Vietnam. All these five countries together account for 84% of the FDI inflow in the RCEP between 2015 to 2019.

The RCEP is not only significant for its own region but for the whole world as well. It is also growing as a major source of FDI for the world. The share of the RCEP in Global FDI outflow was 17% in 2010 which has increased to 36% in 2019 which is almost double. This shows the achievement of the RCEP as a major trading bloc in the world in promoting FDI across the globe.

If we talk about FDI in intra-regional Investment, we find that the RCEP accounts for almost 30% of FDI in intraregional investment. However, it is important to know that the intraregional investment is largely driven by major exporting countries of the RCEP namely China, Korea & Singapore.

About 70 % of the FDI inflow in the RCEP region is from non-RCEP countries. A major area of FDI was renewable power, extractives, transportation infrastructure, power generation (non-renewable), Industry and real estate, health, etc. Major FDI projects in the RCEP region are

coming from China in the field of real estate & infrastructure, Japan's contribution to the RCEP region has been in power generation including renewables 7 fossil fuel-based power generation, and Singapore & Thailand are promoting FDI in the RCEP region in promotion of renewable energy.

FDI inflows in the RCEP are largely concentrated in basically 5 countries namely China, Singapore, Australia, Indonesia & Vietnam as shown in the figure given below. These countries account for 84% of FDI inflow in the RCEP in the last 5 years between 2015 to 2019. Some outside FDI is from the US and the UK which are the major sponsors of the project finance in the RCEP region in the field of renewable energy.

Looking at the importance of the CPTPP and the RCEP, many countries aim to be part of the emerging trading blocs. It is against this backdrop; the present paper intends to analyse India's possible alignment either in the CPTPP or in the RCEP region using a partial and general equilibrium approach. The rest of the paper is structured as follows: The next section 2, is focused on the review of the literature followed by methodology in section 3. Section 4 details simulation scenarios. Section 5 focuses on results and discussion followed by the conclusion and policy implications in the last section.

## 2. Literature Review

There are studies, which focus on the relative benefits of the CPTPP and the RCEP. ASEAN centrality is common between the two. Also among the ASEAN member countries, the motive for joining the groups is different (Wu, 2019).

A study estimated that the RCEP could add $209 billion annually to the world income and $500 billion to world trade by 2030 (Petri &Plummer,2020). Based on the performance it is believed that the RCEP would be going to drag the economic center of gravity of the world back to Asia. This would further help all the member states of ASEAN to expand their free-trade opportunities & further help ASEAN achieve the target of forming the ASEAN Economic Community (AEC) with a single economic market by 2025 (Benson,2018).

The RCEP aims to reduce all free trade barriers including tariffs and red tape to achieve free trade targets which may facilitate international supply chains and trade within the region. (Bradsher, 2020). As per the Asian Development Bank (ADB), the RCEP would bring Asia a step closer to a region-wide trading block by liberalizing its goods and services trade and establishing open & competitive markets with common rules of origin for all goods traded.

A study was done by Chunding, Jing Wang & John Whalley in 2016 based on a general equilibrium model with trade costs in 13 countries to predict the impact of both tariff and non-tariff reduction effects. The Simulation results showed that China-TPP and the RCEP will yield the highest welfare outcomes for China. The study also showed that the RCEP will also generate the highest welfare outcome for Japan, Korea & India.

Seeing the importance of the CPTPP as an emerging trade block with promising opportunities for trade and development. Many other countries like China, the UK, Taiwan, and Ecuador applied for the CPTPP membership in 2021. But for China to join the CPTPP, it has to fulfil two necessary conditions. Firstly, China has to get support from all the other members of the CPTPP, and secondly, it has to fulfil all the conditions related to trade standards set up by the CPTPP. However, there is no unanimous consensus among all the CPTPP members over China's candidature to the group. Australia, Canada, Japan, and Mexico are still not giving their support to China. The United States though not a part of the CPTPP but still very cautious over China's membership bid in it (Chunding,Zhang &Yifan, 2021). While other members like Malaysia and Singapore are looking forward to welcoming China's entry to the CPTPP. Besides the consent of members over China's accession, the issue of meeting all the specified standards of the CPTPP was another great concern for Beijing. In fact, China has been following its policies which are in complete contrast to the norms set by the CPTPP agreements, especially in the field of labor laws concerning labor rights protection, providing a level-playing field for private enterprises, and promoting free cross-border data flows among its members. But China is moving in the opposite direction from the ideologies or principles of the CPTPP by having stringent labor laws, human rights issues, the continuation of giving subsidies, and a strong supporter of data localization. Against the CPTPP policy of free cross-border data flows, Beijing introduced the new Data Security Law on September 1, 2021, making it harder for foreign companies to move data out of China (Haiwei & Miaojie, 2021).

As far as India's prospects to join the CPTPP or the RCEP is concerned, it would be a win-win situation for both parties as India accounts for 2.4% of the land area but shares 17.7 % of the world population. India is the second largest populated country in the world after China with more than 60% of the working population between the age group 15-65 years which will not only provide skilled and unskilled labor along with other resources to the CPTPP or the RCEP but would also provide a large market of about 1.38 billion consumers to these trade blocs that would provide a huge market for their finished products. As a result, both India and these trade blocs would be mutually benefited and further get tremendous opportunities for the growth and

development of international trade. It is against this backdrop the present study intends to analyse the relative gains of India if it aligns with either the CPTPP or the RCEP region.

## 3. Methodology

The present study uses GTAP (Global Trade Analysis Project) framework, which is a multi-market, multi-regional, multi-agent model. GTAP is a most common general equilibrium analysis tool for estimating the economic impacts of proposed trade agreements. The model works on the assumptions of perfect competition, full employment and constant elasticity of substitution (CES) production and utility functions. These can be changed with changes in closures if required.

Trade gets promoted with the tariff liberalization and expects to lead to have higher growth rate in the liberalizing economies. The model further works on real returns to the factors of production. The GTAP model in fact integrates the production, consumption, traded sectors and also the equilibrium markets. Generated elasticities play a pivotal role in realizing the economy wide impacts due to shocks in the economy. The GTAP model works with the equations, and data in structural accounting matrix form and works with parameters like elasticities. These can be changed as well.

To analyse the economy-wide impact of exogenous variables on the given endogenous variables can be solved using non-linear deterministic equations. We can do that by changing the closures. The present study shall be using GTAP 10 to analyse the possible alignment which considers total 65 sectors and 141 regions. The model considers 244 countries and also 50 updated I-O tables.

Further, to analyse the economy wide impact of liberalisation, say tariff liberalization, we say that it may lead to decline in real returns of the factor of production which are used intensively in the production of commodity and increase in the real returns of the other factors.

In case of liberalization, if price of savings rises, it would lead to decrease in savings and investments in the country who is liberalising as per the GTAP model. The liberalisation further leads to increase in output of the non-liberalised sectors. Consumption in the non-liberalized sector reduces due to increase in price because of liberalization. The opposite happens in the exporting country.

Further, in case of intermediate goods, if there is tariff liberalization, profits increase in the home country. There would be expansion in the sector in contrast to the case where liberalisation took place in the final good. Therefore, the changes in the price because of tariff liberalisation leads to income distribution impacts with Stolper-Samuelson theorem which in turn affects consumption, production, price changes and real returns to the factors of production.

**GENERAL Equilibrium impact of tariff reduction**[1]

Assume a decrease of the tariff on imports of $i$ from $r$ into $s$, $tms(i, r, s)$. This brings down $pms(i, r, s)$ via price linkage equation:

$$pms(i, r, s) = tm(i, s) + tms(i, r, s) + pcif(i, r, s) \tag{1}$$

Now domestic users immediately substitute from competing imports as given the condition:

$$qxs(i, r, s) = qim(i, s) - \sigma_M(i) \times [pms(i, r, s) - pim(i, s)] \tag{2}$$

Similarly, the composite cost of imports confronting sector $j$ is derived through conditions given as:

$$pim(i, s) = \sum_{k \in REG} MSHRS(i, k, s) \times pms(k, s) \tag{3}$$

$$pfm(i, j, s) = tfm(i, j, s) + pim(i, s) \tag{4}$$

This constructs the aggregate demand for imports through equation given as:

$$qfm(i, j, s) = qf(i, j, s) - \sigma_D(i) \times [pfm(i, j, s) - pf(i, j, s)] \tag{5}$$

Now cheaper imports bring down the total cost of intermediates through the condition given as:

$$pf(i, j, s) = FMSHR(i, j, s) \times pfm(i, j, s) + [1 - FMSHR(i, j, s) \times pfd(i, j, s)] \tag{6}$$

This causes excess profits at current prices given the condition:

$$VOA(j, s) \times ps(j, s) = \sum_{i \in ENDW} VFA(i, j, s) \times pfe(i, j, s)$$

$$+ \sum_{i \in TRAD} VFA(i, j, s) \times pf(i, j, s) + VOA(j, s) \times profitslack(j, s) \tag{7}$$

This expands output which in turn generates an expanding effect via conditions given below:

$$qva(j,s) + ava(j,s) = qo(j,s) - ao(j,s) \tag{8}$$

$$qf(i,j,s) + af(i,j,s) = qo(j,s) - ao(j,s) \tag{9}$$

This expansion effect leads to increased demand for primary factors of production through equation:

$$qfe(i,j,s) + afe(i,j,s) = qva(j,s) - \sigma_{VA}(j) \times \left[ pfe(i,j,s) - afe(i,j,s) - pva(j,s) \right] \tag{10}$$

In the general equilibrium analysis, this expansion generates an excess demand through the mobile endowment market-clearing condition equation given as:

$$VOM(i,s) \times qo(i,s) = \sum_{j \in PROD} VFM(i,j,s) \times qfe(i,j,s) + VOM(i,s) \times endwslack(i,s) \tag{11}$$

This shoots up the prices of these factors and transmits the shock to other sectors in the liberalizing region.

Now turning to region $r$, which produces the goods for which $tms(i,r,s)$ reduced. Equation (2) is used to determine the implications for total sales of $i$ from $r$ to $s$, given the responses of agents in region $s$ to the tariff shock.

$$\begin{aligned} VOM(i,r) \times qo(i,r) &= VDM(i,r) \times qds(i,r) + VST(i,r) \times qst(i,r) \\ &+ \sum_{s \in REG} VXMD(i,r,s) \times qxs(i,r,s) + VOM(i,r) \times tradslack(i,r) \end{aligned} \tag{12}$$

Above equation describes the resulting implications for total output: $qo(i,r)$. Now, the equations (8) and (9) again lead the expansion effect back to intermediate demands in region $r$'s factor markets.

Further for NTBs, we use the AMS command of the GTAP 10 by assuming 2% improvement in the imports embodying new technologies. NTBs once addressed improves technology through imports. The NTBs include SPS measures, TBT measures, Rules of origin, pre-shipment finance and all pernicious regulations behind the border constraining imports.

**General Equilibrium Impact of Non-Tariff Reduction[2]:** To understand the scenario as how the AMS variable is introduced in the GTAP model, here are the following price and import equations when *ams* variable is introduced into the GTAP model:

$$pim_{is} = \sum_k \theta_{iks}\left[pms_{iks} - ams_{iks}\right] \tag{13}$$

$$qxs_{irs} = -ams_{irs} + qim_{is} - \sigma_m\left[pms_{irs} - ams_{irs} - pim_{is}\right] \tag{14}$$

Here:

$\sigma_m$ is elasticity of substitution among imports of *i*

$qxs_{irs}$ is percentage change in bilateral exports of *i* from *r* to *s*

$qim_{is}$ is percentage change in total imports of *i* into *s*

$\theta_{iks}$ shows the share of imports of *i* in region *k* in the composite imports of *i* in region *s*

$pms_{irs}$ is the percentage in price of imports of *i* from *r* in *s*

$pim_{is}$ is percentage change in average import price of *i* in *s*

$ams_{irs}$ is percentage change in effective price of *i* from *r* in *s* due to change in unobserved trade costs

There are two conflicting effects of these *ams* shocks. One is that an *ams* shock lowers the price of imports as shown in equation (13) which leads to increase in demand for imported goods at the expense of domestic goods while the other effect is that the *ams* shock leads to gain in efficiency by increasing real production content of each single unit exports as shown in equation (14). Both the effects are opposing to each other and the second one shows that a few exports are required to meet the demand of the importing country. As the *ams* shock applies uniformly to all the trading partners, this should favour an overall impact leading to an increase in domestic expenditures on imports and in their shares in the reforming country.

The *ams* variable is similar to a technological shock. Therefore, whenever shocks are given to *ams* variable, we assume that supply would shift resulting in more quantity produced but no extra cost would be required. Such shift would lead to welfare gain. With the introduction of

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[2] Directly taken from the paper by Fugazza and Murr (2006) as the GTAP equation remain the same.

*ams* shocks, the technological component of welfare increases and distributed more widely than the *tms* shocks. The efficiency gains have multiple effect on value of import base.

We use for estimating the structural gravity model, the procedure suggested by Baier & Bergstrand (2009). The Latin American name of this methodology is named Bonus Vetus OLS. This approach accounts for MTR without using dummies. This approach entails use of first order Taylor's expansion of all the trade cost terms included in our model. We explicitly consider tariffs, distance and non-tariff barriers as our trade cost.

Baier and Bergstrand transformation

$$\log X_{ij}^k = \log Y_i^k + \log E_j^k - \log Y^k + (1 - \sigma_k)\left[\log \tau_{ij}^{k*}\right]$$

by using the 1st order Taylor series approximation of MTR:

$$\log \tau_{ij}^{k*} = \log \tau_{ij}^k - \sum_{j=1}^N \theta_j^k \log \tau_{ij}^k - \sum_{i=1}^N \theta_i^k \log \tau_{ji}^k + \sum_{i=1}^N \sum_{j=1}^N \theta_i \theta_j \log \tau_{ij}^k$$

weighted by GDP shares $\qquad \boldsymbol{O}_i^k = \dfrac{Y_i^k}{Y^k}$

BB estimation procedures involves the calculation of weight terms and also calculation of $\log \tau_{ij}^*$ for each trade-cost variable given as:

$$\ln \text{dist}_{ij}^* = \ln \text{dist}_{ij} - \sum_i \theta_i \ln \text{dist}_{ij} - \sum_j \theta_j \ln \text{dist}_{ij} + \sum_i \sum_j \theta_i \theta_j \ln \text{dist}_{ij}$$
$$\text{contig}_{ij}^* = \text{contig}_{ij} - \sum_i \theta_i \text{contig}_{ij} - \sum_j \theta_j \text{contig}_{ij} + \sum_i \sum_j \theta_i \theta_j \text{contig}_{ij}$$

Estimation of the BB gravity model with OLS involves:

$$\log X_{ij}^k = \log Y_i^k + \log E_j^k - \log Y^k + (1 - \sigma_k)\left[\log \tau_{ij}^{k*}\right]$$

Find the weight term: $\quad \theta_i^k = \dfrac{1}{N_i^k}$

## 4. Experimental Design

All the simulations scenarios are directed in a multi-nation, multi-commodity, general equilibrium framework. We use GTAP-10 database to analyse the simulation scenarios given below:

1. India's deeper alliance with the CPTPP and the RCEP which includes tariff and non-tariff liberalization, movement of skilled labor, capital and natural capital, global value chains enhancing technological progress and atmanirbhar policy of India wherein output oriented technological progress is introduced in manufacturing and transport and communications sector.

2. India's deeper alliance with the CPTPP and the RCEP which includes tariff and non-tariff liberalization, movement of skilled labor, capital and natural capital, global value chains enhancing technological progress and adoption of common industrial policy in all member nations wherein output oriented technological progress is introduced in manufacturing and transport and communications sector.

3. India's deeper alliance with the CPTPP and the RCEP which includes tariff and non-tariff liberalization, movement of skilled labor, capital and natural capital, global value chains enhancing technological progress and adoption of common industrial policy in all member nations wherein output oriented technological progress is introduced in manufacturing and transport and communications sector and India becomes a part of the CPTPP/RCEP FTA.

## 5. Results and Discussion

### 5.1. Structural Gravity Model Results

We use structural gravity model to analyse the RCEP and the CPTPP trade among themselves including India when the RCEP and the CPTPP form a union and when they as a mega block standalone liberalizes using data for year 2021. The trade creation and trade diversion dummies of the RCEP and the CPTPP in the union scenario becomes positive and facilitates regional trade among 20 countries including 15 RCEP nations and 11 CPTPP nation's noting that there are 7 common members. The RCEP standalone liberalization is good in creating trade among 7 common members and hence trade among the RCEP nations and India while CPTPP standalone liberalization does not significantly impact trade among the CPTPP and the RCEP members including India. We use Bair and Bergstrand (2009) to estimate the structural gravity model. The controls are tariffs, distance, non-tariff barriers, exporter and importer GDP and multilateral trade barriers. The focus of attention is the RCEP and the CPTPP trade creation and two trade diversion dummies for each of the mega trade blocks. Trade creation happens when both importer and exporter are part of the agreement while trade diversion dummy takes value one when either importer or exporter are not part of the mega trade blocks, zero otherwise. The RCEP has 10 ASEAN nations with China, Australia, New Zealand, Korea and Japan. CPTPP has 11 members with 7 common members Australia, New Zealand, Singapore, Vietnam, Brunei, Japan and Malaysia along with Canada, Peru, Chile and Mexico. India's trade with the RCEP reaches $185 billion while it is half that with the CPTPP members. The general equilibrium model conveys that deeper integration clauses allow one to decide whether India

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should join the RCEP or the CPTPP or liberalize with all 19 members of two blocks when both mega blocks form a union and liberalize multilaterally.

The Baier and Bergstrand Structural Gravity results are given in appendix 3:

## 5.2. General Equilibrium Model Results

The three simulation scenarios mentioned above have differential impact on economy wide variables pertaining to India under the circumstances that India joins either RCEP or CPTPP (see appendix 4).

The simulations result show that the first simulation scenario gives India relatively higher gains in terms of GDP growth and welfare, among others irrespective of the fact that India joins either the RCEP or the CPTPP. The welfare gains for India hover around $114.76 billion (deeper alliance with CPTPP with Atmanirbhar policies) to $117.87 billion (deeper alliance with the RCEP with Atmanirbhar policies) with growth rates varying between 7.3 (with RCEP) to 7.69 (with the CPTPP) percent. These set of figures are relatively higher when India either liberalizes with the RCEP or the CPTPP and all members adopt deeper integration policies including common industrial policies and have an FTA agreement among all members including India. For example, in simulation 2, when all members adopt a common industrial policy with deeper integration clauses, India's gain in terms of welfare hovers around $96.08 billion (deeper alliance with the CPTPP with common industrial policies) to $115.88 billion (deeper alliance with the RCEP with common industrial policies) and growth rates varying between 6 (with the RCEP) to 6.35 (with the CPTPP) percent.

In the third simulation, when all members adopt deeper integration policies but have a free trade agreement, India's welfare hovers around 95.91 (deeper alliance with CPTPP and an FTA) to 114.61 (deeper alliance with RCEP and an FTA) billion USD and a growth rate of 5.63 (with RCEP) to 6.3 (with CPTPP) percent.

The welfare levels for the common members of the CPTPP and the RCEP (7 in number, namely Australia, New Zealand, Brunei, Singapore, Malaysia, Japan, and Vietnam) hovers between 190.67 billion USD (India's deeper alignment with the CPTPP and India's atmanirbhar policy) to $336.29 billion (deeper alliance with the RCEP and an FTA among all members including India). The growth rates for CPTPP-7 are relatively the highest when India has a deeper alliance with the RCEP along with an FTA (7.83%).

The welfare levels for RCEP-8 (China, Korea, Myanmar, Laos, Thailand, Cambodia, Philippines, and Indonesia) are the least when India has deeper integration with CPTPP and an

FTA ($-165 billion) to $667.81 billion when India has deeper integration with the RCEP and an FTA. The VGDP growth for the RCEP-8 nations is also relatively higher in the third simulation scenario when India has a deeper alliance with the RCEP along with an FTA agreement.

It seems that the relevant question of India aligning with the RCEP or the CPTPP will depend on deeper alignment clauses along with India adopting atmanirbhar policies of promoting input and output-oriented technological progress in manufacturing and transport and communications.

In all the simulation scenarios, all factors of production except natural capital gains in terms of real returns to factors of production. It seems that the scarcity of natural resources is the major stumbling block to the Indian development process. To become atmanirbhar, it needs to promote input-oriented technological progress in energy inputs ranging from coal, oil, natural gas, petroleum, and electricity. Investments in renewables will sustain our growth processes and achieve the millennium sustainable development goals of India. CPTPP-7 position regarding real returns to natural capital is similar to India when New Delhi has deeper engagements with either the RCEP or the CPTPP.

India's trade balance with the world becomes negative in all the scenarios suggesting realignment of our exchange rates which have already reached beyond rupees 80 to a dollar.

EU and Latin-American economies are impacted the most in terms of welfare and VGDP growth when India aligns with the CPTPP and the RCEP.

In all the simulation scenarios, the maximum growth rates sectorally in India, are in light manufacturing, heavy manufacturing, public utilities (electricity, water, gas, and construction), transport and communications, and domestic investments. Maximum trade is in heavy manufacturing and trade in services due to India's deeper engagements with the RCEP or the CPTPP. Agriculture and allied activities lag behind in terms of output and trade. However, there is a lot of potential in promoting output and trade of meat and meat products[3].

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[3] Sectoral results are available with the authors and would be produced on demand.

## 6. Conclusion and Policy Implications

Should India align with the 15 nation's RCEP with which it has a relatively higher $185 billion trade or with the 11 nations' CPTPP with which it has a lesser $70 billion trade in agriculture, industrial products, and petroleum? It will depend on India's engagement with the mega blocks who agree on having deeper integration clauses along with the adoption of Atmanirbhar policies in India promoting innovation in manufacturing and transport and communications and member states promoting global value chains in the region. We construct three simulation scenarios. First, when India separately has deeper integration relations with the RCEP and the CPTPP in the form of tariff and nontariff liberalization, freer movement of capital, skilled labor, and endowment enhancement of natural capital, with global value chains enhancing technological progress and output-oriented technological progress in manufacturing and transport and communications.

This is the best scenario for India irrespective of whether India joins the CPTPP or the RCEP, in terms of welfare hovering from $110 billion to $117 billion with vgdp growth beyond 5 percent in all scenarios. Other scenarios of deeper integration clauses mentioned above with the adoption of common industrial policies of having output-oriented technological progress in manufacturing in all member nations and having free trade with either the RCEP or the CPTPP, bring relatively lower welfare and vgdp growth in India. CPTPP 7, common members of the RCEP and the CPTPP, comprising Australia, New Zealand, Vietnam, Brunei, Singapore, Japan, and Malaysia are impacted more or less the same whether they are part of the RCEP or the CPTPP by deeper integration policies. CPTPP4, the other nations in eleven member alliances, comprising Canada, Mexico, Peru, and Chile, and RCEP8 are impacted negatively when India aligns with the RCEP and the CPTPP respectively. All factors gain in this deeper integration alignment except real returns to natural capital. We have the highest average tariff imposed on CPTPP7 tuning to the level of 22 percent while for RCEP8 nation's product we impose an average 20% tariff rate. We protect our grains crops and processed food sectors the most with tariffs reaching 70 percent for edible oil, palm oil, and dairy products being imported from the two mega blocks.

The gravity results show that a union between the RCEP and the CPTPP is more conducive to trade among 20 members including India rather than standalone liberalization of the mega-regional trading blocks.

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# Appendices

## Appendix 1: Tariff Profile of India, RCEP and CPTPP

| Tariff Profile of India RCEP 8 | | Tariff Profile of India CPTPP 7 | | Tariff Profile of RCEP 8 CPTPP 7 | | Tariff Profile of CPTPP 7 CPTPP 4 | | Tariff Profile of India CPTPP 4 | |
|---|---|---|---|---|---|---|---|---|---|
| **India Exporting to RCEP 8** | | **India Exporting to CPTPP 7** | | **RCEP8 Exporting to CPTPP 7** | | **CPTPP 7 Exporting to CPTPP 4** | | **India Exporting to CPTPP 4** | |
| Grains and Crop | 21.89 | Grains and Crop | 3.41 | Grains and Crop | 5.14 | Grains and Crop | 3.81 | Grains and Crop | 3.08 |
| Meat and Meat Products | 32.33 | Meat and Meat Products | 10.88 | Meat and Meat Products | 6.43 | Meat and Meat Products | 1.63 | Meat and Meat Products | 1.4 |
| Extraction and Mining | 0.46 | Extraction and Mining | 1.04 | Extraction and Mining | 0.19 | Extractio and Mining | 0.02 | Extractio and Mining | 1.79 |
| Processed food | 11.01 | Processed food | 8.27 | Processed food | 5.49 | Processed food | 4.5 | Processed food | 3.33 |
| Textile and Readymade garments | 4.51 | Textile and Readymade garments | 3.11 | Textile and Readymade garments | 7.42 | Textile and Readymade garments | 13.83 | Textile and Readymade garments | 12.39 |
| Light Manufacturing | 4.95 | Light Manufacturing | 5.71 | Light Manufacturing | 2.67 | Light Manufacturing | 2.67 | Light Manufacturing | 12.92 |
| Heavy Manufacturing | 2.19 | Heavy Manufacturing | 0.94 | Heavy Manufacturing | 0.677 | Heavy Manufacturing | 0.35 | Heavy Manufacturing | 1.14 |
| Average | **11.04857** | | **4.765714** | | **4.002429** | | **3.83** | | **5.15** |
| **RCEP 8 Exporting to India** | | **CPTPP 7 Exporting to India** | | **CPTPP 7 Exporting to RCEP 8** | | **CPTPP 4 Exporting to CPTPP 7** | | **CPTPP 4 Exporting to India** | |
| Grains and Crop | 19.23 | Grains and Crop | 42.36 | Grains and Crop | 7.55 | Grains and Crop | 15.9 | Grains and Crop | 41.31 |
| Meat and Meat Products | 22.64 | Meat and Meat Products | 5.39 | Meat and Meat Products | 8.69 | Meat and Meat Products | 38.04 | Meat and Meat Products | 6.25 |
| Extractio and Mining | 3.54 | Extractio and Mining | 2.97 | Extractio and Mining | 0.08 | Extractio and Mining | 0.14 | Extractio and Mining | 1.48 |
| Processed food | 69.24 | Processed food | 78.04 | Processed food | 6.36 | Processed food | 4.33 | Processed food | 35.13 |
| Textile and Readymade garments | 13.07 | Textile and Readymade garments | 11.2 | Textile and Readymade garments | 3.94 | Textile and Readymade garments | 4.35 | Textile and Readymade garments | 9.41 |
| Light Manufacturing | 9.23 | Light Manufacturing | 8.78 | Light Manufacturing | 9.07 | Light Manufacturing | 1.68 | Light Manufacturing | 7.72 |
| Heavy Manufacturing | 5.58 | Heavy Manufacturing | 5.66 | Heavy Manufacturing | 2.67 | Heavy Manufacturing | 0.63 | Heavy Manufacturing | 6.83 |
| Average | **20.36143** | | **22.05714** | | **5.48** | | **9.295714** | | **15.44714** |

*Source: GTAP10*

**Appendix 2: Non-Tariff Measures of Selected RCEP and CPTPP Countries**

| | RCEP Countries | | | | CPTPP Countries | | |
|---|---|---|---|---|---|---|---|
| | Frequency Index | Coverage Ratio | Prevalence Score | | Frequency Index | Coverage Ratio | Prevalence Score |
| **Australia** | 67 | 70 | 3.5 | **Australia** | 67 | 70 | 3.5 |
| **Brunei** | 46 | 60 | 2.4 | **Brunei** | 46 | 60 | 2.4 |
| **Cambodia** | 96 | 98 | 4.4 | **Canada** | 100 | 98 | 4.2 |
| **China** | 90 | 92 | 6.8 | **Chile** | 61 | 61 | 1.3 |
| **Indonesia** | 61 | 70 | 3 | **Japan** | 61 | 76 | 3.3 |
| **Japan** | 61 | 76 | 3.3 | **Malaysia** | 48 | 63 | 2.4 |
| **Malaysia** | 48 | 63 | 2.4 | **Mexico** | 38 | 45 | 1 |
| **Myanmar** | 88 | 88 | 2.6 | **New-Zealand** | 59 | 73 | 2.5 |
| **New-Zealand** | 59 | 73 | 2.5 | **Singapore** | 47 | 60 | 2.6 |
| **Philippines** | 84 | 88 | 4 | **Vietnam** | 89 | 92 | 5 |
| **Singapore** | 47 | 60 | 2.6 | | | | |
| **Thailand** | 28 | 38 | 2.1 | | | | |
| **Vietnam** | 89 | 92 | 5 | | | | |

**Source: UNCTAD**

**Appendix 3**

| VARIABLES | (1) CPTPP & RCEP with BB | (2) CPTPP with BB | (3) RCEP With BB |
|---|---|---|---|
|  |  |  |  |
| ln_distance_star | -0.971*** | -1.148*** | -1.029*** |
|  | (0.115) | (0.204) | (0.135) |
| ln_tariff_star | 0.752*** | 0.407*** | 0.774*** |
|  | (0.119) | (0.149) | (0.150) |
| ln_ntb_reporter_star_2 | 0.0677 | 0.324 | -0.179 |
|  | (0.245) | (0.378) | (0.390) |
| ln_ntb_partner_star_2 | -0.204 | 0.107 | -1.159*** |
|  | (0.208) | (0.285) | (0.382) |
| RCEP_TC | 0.698** | 0.226 | 0.978* |
|  | (0.343) | (0.420) | (0.502) |
| RCEP_TD_1 | -0.135 | -0.331 | 0.782 |
|  | (0.365) | (0.375) | (0.588) |
| RCEP_TD_2 | -0.132 | -0.478 |  |
|  | (0.390) | (0.459) |  |
| CPTPP_TC | 2.071*** | 0.490 | 2.050*** |
|  | (0.309) | (0.426) | (0.350) |
| CPTPP_TD_1 | 1.580*** |  | 1.397*** |
|  | (0.299) |  | (0.306) |
| CPTPP_TD_2 | 0.0970 | -0.821 | 0.0971 |
|  | (0.312) | (0.734) | (0.342) |
| ln_GDP_exporter | 1.060*** | 0.786*** | 1.047*** |
|  | (0.0613) | (0.110) | (0.0723) |
| ln_GDP_importer | 1.082*** | 0.861*** | 1.149*** |
|  | (0.0805) | (0.155) | (0.0932) |
| o.CPTPP_TD_1 |  | - |  |
|  |  |  |  |
| o.RCEP_TD_2 |  |  | - |
|  |  |  |  |
| Constant | -50.97*** | -40.09*** | -54.37*** |
|  | (3.207) | (6.246) | (3.796) |
|  |  |  |  |
| Observations | 583 | 206 | 378 |
| R-squared | 0.585 | 0.510 | 0.573 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

*Source: Author's own estimations*
*Note: o. in the tables shows omitted.*

| | Scenario 1 | | | | Scenario 2 | | | | Scenario 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | India's deeper alliance with CPTPP (atmanirbhar policies) | | India's deeper alliance with RCEP (atmanirbhar policies) | | India's deeper integration with CPTPP11 (CPTPP7+CPTPP4) with common Industrial policy | | | | India's deeper integration with CPTPP11 (CPTPP7+CPTPP4) with common Industrial policy and a FTA | | | |
| EV | EV | VGDP | EV | vgdp | EV | vgdp | EV | vgdp | EV | VGDP | EV | vgdp |
| RCEP8 | -5897.7 | 9.46 | 359057.69 | 12.17 | -15851.8 | 8.79 | 642477.3 | 15.61 | -16582.5 | 8.77 | 667812.4 | 15.79 |
| INDIA | 114760.22 | 17.69 | 117879.28 | 17.3 | 96081.02 | 16.35 | 115884.1 | 16 | 95913.56 | 16.3 | 114617.7 | 15.63 |
| CPTPPRCEP7 | 190670.45 | 12.69 | 192229.31 | 12.56 | 292447.22 | 16.63 | 291517.1 | 15.76 | 296511.3 | 16.77 | 336293.6 | 17.83 |
| CPTPP4 | 94222.85 | 12.25 | 334.64 | 9.17 | 133376.39 | 15.32 | -408.83 | 7.89 | 137550.9 | 15.65 | -1712.46 | 7.56 |
| Oceania | -3.98 | 9.66 | 46.58 | 9.65 | -17.32 | 9.33 | -179.85 | 8.17 | -24.59 | 9.3 | -389.52 | 7.31 |
| EastAsia | -9.09 | 9.61 | 549.02 | 9.57 | -129.44 | 9.21 | 494.5 | 8.54 | -161.19 | 9.2 | -2215 | 7.83 |
| SouthAsia | -360.45 | 9.39 | -547 | 9.02 | -594.77 | 8.81 | -1260.4 | 7.57 | -628.32 | 8.78 | -1943.25 | 7.04 |
| NAmerica | -2544.8 | 9.42 | -7522.46 | 9.02 | -6434.12 | 8.86 | -16659.6 | 7.59 | -8768.29 | 8.79 | -23954.54 | 7.18 |
| LatinAmer | -1482.57 | 9.32 | -1650.27 | 9 | -2479.13 | 8.8 | -3340.95 | 7.73 | -2680.11 | 8.77 | -5014.64 | 7.36 |
| EU_28 | -7922.96 | 9.42 | -9840.72 | 9.17 | -17992.15 | 8.85 | -26214.1 | 7.88 | -18293.3 | 8.84 | -34139.18 | 7.57 |
| MENA | -161.07 | 9.5 | 3687.54 | 9.39 | -531.4 | 9.01 | 1956.71 | 8.15 | -586.21 | 9 | -417.99 | 7.84 |
| SSA | -366.97 | 9.45 | 902.66 | 9.35 | -799.58 | 8.94 | -611.23 | 8.14 | -813.33 | 8.92 | -1693.88 | 7.8 |
| RestofWorld | -331.45 | 9.48 | 2246.89 | 9.31 | -1023.46 | 8.98 | 394.56 | 8.06 | -1165.79 | 8.97 | -916.68 | 7.78 |

*Note: EV is given in million USD, Vgdp is growth rate with threshold 10. Therefore, 15.76 should be read as 5.76 percent growth rates.*
*Source: Author's own simulations using GTAP-10*

# India's Possible Alignment with
# RCEP & CPTPP
# and its relative gains and losses

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