CWS/WP/200/24

Trans-Pacific Partnership Agreement (TPPA): Implications for India's Trade and Investments

Working Paper

October 2015

By

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Trans Pacific Partnership Agreement (TPPA): Implications for India's Trade and Investments

Rashmi Banga[3] and Pritish Kumar Sahu[4]

1. Introduction

India has signed and is in the process of signing many bilateral and regional Free Trade Agreements (FTAs). The regional FTAs include the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, or BIMSTEC; South Asian FTA (SAFTA), Indo ASEAN FTA, RCEP, etc. Whether these FTAs have and will result in gains to the country or not is still an issue of discussion. However, an agreement reached under TPP in October 2015 between 12 countries, has necessitated an early analysis of the likely impacts on India of joining or not joining this mega FTA. Mega FTAs, unlike the regional FTAs, engage developed countries with developing countries, defying regions and continents. What makes these mega FTAs important is not only the unequal economic weights of the partners involved but also the fact that these FTAs include new issues which are not part of the multilateral negotiations.

The first round of negotiations on TPPA commenced in March 2010. 12 countries have agreed on TPP, although the agreement needs to be ratified by the countries. The participant countries to TPPA are Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States and Vietnam. Of these, almost half of the member countries are rich developed countries while the other half are small developing countries, but rich in natural resources like oil and gas. Many other Asian countries like Thailand, Philippines, Taiwan and

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South Korea have expressed their interest in joining TPPA. All these countries are important trade partners for India.

In this context, it becomes important to assess the implications for India if it becomes a part of TPPA or if it chooses to remain outside. As pointed out earlier, TPPA goes much beyond trade and tariff negotiations as it includes 29 chapters ranging from issues of market access, technical barriers to trade, sanitary and phytosanitary measures, rules of origin, customs cooperation, investment, services and legal and institutional aspects of the negotiation, and further it includes government procurement, competition, intellectual property, labour and environment issues. Although each of these issues need to be analysed in detail, the trade implications of TPPA can be important for India since many big markets are engaged in TPPA negotiations, like USA, Australia, Japan and Canada.

This paper provides a quantitative assessment of gains and losses to India of joining and not joining TPPA. A detailed analysis is undertaken to estimate the extent of trade diversion that may take place for the member countries which may adversely affect India's exports to these countries. Further, if India becomes a member of TPPA, quantitative assessment is undertaken on its likely rise in exports and imports to/from different member countries. The analysis is undertaken at HS six-digit disaggregation which enables identification of potential products for exports and imports of India. Further, the paper identifies investment potential for India in TPPA member countries in post TPPA scenario.

The paper is structured as follows: section 2 briefly outlines the provision under TPPA; section 3 provides brief review of existing literature; section 4 provides a critical review of studies using CGE analysis; section 5 reports the trends in trade and investments of India with TPPA member countries as well as extent of integration of India in terms of domestic value-added exports and imports to these countries; section 6 discusses the methodology and data used; section 7 presents three sets of results, first, India's loss of exports at product-level and country-level if it does not join TPPA, second, India’s likely rise in exports and imports if it joins TPPA and third, India’s investment potential and opportunities in TPP countries if it remains out of TPPA; section 8 presents results of implications on net trade if India joins TPPA; section 8 summarises and concludes.

2. TPPA Provisions: Brief Review

The TPPA is a potential free trade agreement aimed at creating a platform of economic integration across the Asia Pacific region. This is an expansion of the 2005 Trans-Pacific Strategic Economic Partnership Agreement (TPPA) that included originally 4 countries namely Brunei, Chile, New Zealand, and Singapore. In August 2014, the agreement was being negotiated between 12 countries of the Asia pacific region. Other countries such as South Korea, Taiwan, Philippines, Laos, Colombia, Indonesia, Cambodia, Bangladesh and Thailand have also expressed their interest to be a member of the TPPA. Although most of the countries involved in the agreement are already into some sort of trade agreements, either bilateral or regionally with each other, the present partnership treaty goes beyond the existing partnership agreements in terms of scope and prospects.

The text of the negotiation is based on 29 chapters which cover both the traditional areas in FTAs and the new issues. Of the 29 draft chapters only eight deal with traditional trade issues. The traditional issues in TPPA chapters cover the market access, technical barriers to trade, sanitary and phytosanitary measures, rules of origin, customs cooperation, investment, services and legal and institutional aspects of the negotiation. The new generatoion FTA issues include government procurement, competition, intellectual property, labour and environmental issues. The negotiation covers the legal texts which prescribe rules and disciplines on the subject areas; and market access which confers access opportunities for goods, services, procurement and investment. The legal texts cover all aspects of commercial relations among the TPPA countries are virtually complete except in some areas where the differences remain. In the later stage, further negotiations and discussions are required on specific issues that still remain sensitive.

The first round of negotiations on TPPA commenced in March 2010 and the original participant's countries were Australia, Brunei, Chile, New Zealand, Peru, Singapore, United States and Viet Nam. During the third round at Brunei Darussalam, Malaysia joined the negotiations and in December 2012, at the 15th Round, Mexico and Canada were accepted as members to TPPA. Similarly, Japan joined in the 18th round held in Malaysia.

Given the confidentiality of agreement between the partner countries, provisions in most of the chapters have remained out of the public domain. Leaked texts in context of the investment provisions indicate the formation of legal protection to the investment and the investors of each

TPP partners. The TPPA envisages elevating individual foreign firms to equal status with the sovereign nations. The negotiations aim at providing the investors a non-discriminatory and a minimum standard of treatment and restrict performance requirements for foreign investments. The text aims to include provisions for expeditious, investor-state dispute settlement. Though the investment chapter has not been officially released by the trade negotiators but the leaked document reveals that TPPA would restrict the signatories from regulating foreign firms operating within their boundaries.

The TPPA would expand on the investor privileges found in the North American Free Trade Agreement (NAFTA) and subsequent NAFTA-style deals. The leaked documents claim that TPPA includes the provisions to acquire land, natural resources, factories without adequate government review and the right to move capital without limits for foreign investors. Risks and costs of offshoring to low wage countries are reduced and special guarantees are provided for "minimum standard of treatment" for relocating firms. Under this regime, foreign investors can directly sue the host government before tribunals consisting of three members operating under ICSID or UNCITRAL rules to seek compensation for any domestic law that investors believe violates their rights under the treaty.

Similarly, on cross border services the TPP partner countries have agreed on most of the cross border service text that is likely to include an open market for services trade. On goods negotiations, although not much is in public domain, it is expected that TPPA will include a 'yarn forward' rule of origin, which is a standard USFTA requirement. This rule requires the TPPA nation to use a member-produced yarn in textiles in order to receive duty-free access.

3. Existing Empirical Literature on Implications of TPPA on India

The underlined theoretical analysis of a Free Trade Agreement (FTA) is based on the fact that it would lead to the trade creation and trade diversion (Viner, 1950). All FTAs, in one way or other, will inevitably involve some trade diversion. In this context, it is important for a country like India to access the possible economic loss and gains from trade diversion and trade creation if a TPP bloc with 12 members is created.

Although the confidentiality clause in the negotiations of TPPA has severely limited the researchers in estimating more accurately the likely impacts of TPPA on participating countries, there are a growing number of studies which estimate the likely impact of the TPPA on trade in both participating as well as non-participating countries. Majority of these studies use the Computable General Equilibrium (CGE) model with Global Trade Analysis Projects (GTAP) database for the quantitative assessments. These studies analyse various scenarios with possible trade blocs and implications for member countries of TPPA under different scenarios. Some of these studies include PIIE (2015), Petri et al (2011), PIIE (2012), Cheong (2013), Xin (2014), Litkara (2014) and Kenichi K. (2011). However, the empirical studies in context of India are still limited in number. The existing literature suggests that India's GDP, economic welfare and the trade would be reduced marginally if India choose not to be a part of the ongoing TPP. The available literature in context of India is summarized below –

PIIE (2015) has estimated that if India joins the TPP and *if TPP expands into FTA Asia Pacific* (FTAAP), its exports could increase by more than $500 billion annually. This expansion of 60 percent would be more than for any other country. India's national income would rise by more than 4 percent. In contrast, India stands to lose $45 billion in exports and $30 billion in income annually from the trade diversion from an FTAAP that comprise all members of APEC excluding India. These estimates are quoted from an earlier paper by Petri, Plummer, and Zhai (2014). Petri et al (2014) reported that if India does not join TPP (16) it would lose $ 13 billion, while by joining RCEP it gains $238 billion.

Faruqui et al (2015) use GTAP model to estimate the impact of TPP on India in three different scenarios. First, with complete tariff elimination between the TPP12 partners, India's terms of trade is expected to decrease by 0.09%, the real GDP would drop by 0.14% and the welfare loss will amount to US$3.5 billion. Second, with TTIP in place, India's welfare would decrease by US$ 2.2 billion, terms of trade and GDP would deteriorate by 0.03% and 0.11% respectively. Under third scenario, the study finds that if South Asian countries joins TPP, India would gain significantly with welfare gain of US$ 46.7 billion, real GDP and export would increase by 0.4% and 4.3% respectively.

Narayan and Sharma (2014) use the standard GTAP model to analyse the impact of TPP countries tariff reduction on India. The study simulates five different scenario of tariff reduction between different regions with a multi-country multi sector CGE model. The estimated results show that India loses in terms of GDP in all scenarios including when it reduces tariff, mainly because of the reduction in consumption and investment. However, the welfare gains measured in equivalent variation (EV) show India gains in welfare when it reduces tariff. At the sectoral level, India mostly loses in the food products sector, wheat and sugar products irrespective of the decision of joining or not joining in TPP. Similarly the study finds, if India does not join TPP, the output and the trade of textile and leather products would be adversely affected and the situation is reversed if India decides to join the TPP.

Cheong (2013) estimates the implication of TPP on the East Asian region. The results are arrived for using a recursive dynamic CGE model in three different scenarios, viz. TPP9 members (Australia, Brunei Darussalam, Chile, Malaysia, New Zealand, Peru, Singapore, United States, Viet Nam), TPP12 members (TPP9+ Canada, Mexico and Japan) and TPP12+ China (13 members). The simulations show larger the number of countries higher will be the overall economic effect. Although none of the scenarios include India but the economic analysis shows that the GDP gain to India would be maximum (0.38%) if China becomes a part of the negotiations. However, under the TPP9 and the TPP12 scenarios the GDP gain to India would be 0.01% and 0.05% respectively.

Petri et al (2011) empirically estimates impact on India if it is neither a part of TPP nor the Asian track. The estimations show that India would lose on both the tracks and sustain losses in terms of trade diversion in case of FTAAP. On the TPP track, though the global benefit is estimated to grow from US$16 billion to US$104 billion, welfare gain for India is estimated to decline by -0.01 percent of the baseline GDP. This welfare decline is estimated to be higher in Asian Track (-0.12%) and FTAAP (-0.21%).

In a slightly different assumption, Xin (2014) takes 25 regions and 41 production sectors from each region to find the impact of the TPP by using the CGE framework. The empirical estimation includes India as a region with the assumption that it is not expected to participate in TPP for the next 5 years. The estimated result shows that India may experience trade diversion losses of about 0.2% of gross exports in both the scenario of TPP with and without China.

4. Critical Review of Literature using CGE Analyses

Although, CGE models continue to be popular models for analysing implications of regional FTAs on 'included' and 'excluded' countries, there exists a growing literature with consensus on the limitations of CGE modelling and its unrealistic assumptions which invariably lead to 'over-estimation' of gains, especially for small developing countries.

According to Taylor and Arnim (2006), most of the CGE models assume (i) fixed or 'full' employment of labour and capital is maintained everywhere in the world (ii) each country's trade deficit (or surplus) stays constant after liberalisation; and (iii) completely flexible taxes on households enable each country's internal economy to adjust smoothly. This implies that the models are designed in such a way that 'the price system' will always respond to liberalisation in a way that it leads to increases in overall well-being. Other studies that have criticized these assumptions include Raza et al (2014), Charlton and Stiglitz (2005),

Further, Panagariya and Duttagupta (2001), argue that CGE models which show 'gains' for a country from its own preferential liberalization are able to do so by using internally inconsistent assumptions. 'Armington assumption' used in all CGE models implies that there exists 'product differentiation' which implies that no country, howsoever small, produces something which is also produced by another country in the world. In other words, domestic and foreign products are imperfect substitutes.

According to Tokarick (2005), this assumption implies that each country has some degree of market power (even for bulk commodities) and if prices change, no country can ever shift from exporting to importing a commodity. Further, it has to be pointed out that in real world product differentiation may not be location-specific but is producer-specific, for example, cars produced by Honda in Japan will be similar to cars produced by Honda in any other country.

While different studies arrive at different results using different assumptions, although using same models and GTAP dataset, one of the major limitations of studies using CGE is that their assumptions take into account the change in horizontal intra-industry trade across countries but fail to take into account the change in vertical intra-industry trade. These assumptions imply that producers can decide whether to sell their products in domestic markets or exports and consumers

can similarly decide whether to use domestic products or imported products. However, these do not take into account the 'imports of intermediate products' that may be needed for 'increased exports' in each sector, especially post FTA. Given the rising importance of Global Value Chains, the studies grossly overestimate the related results of rise in exports with respect to change in GDP and resulting change in employment.

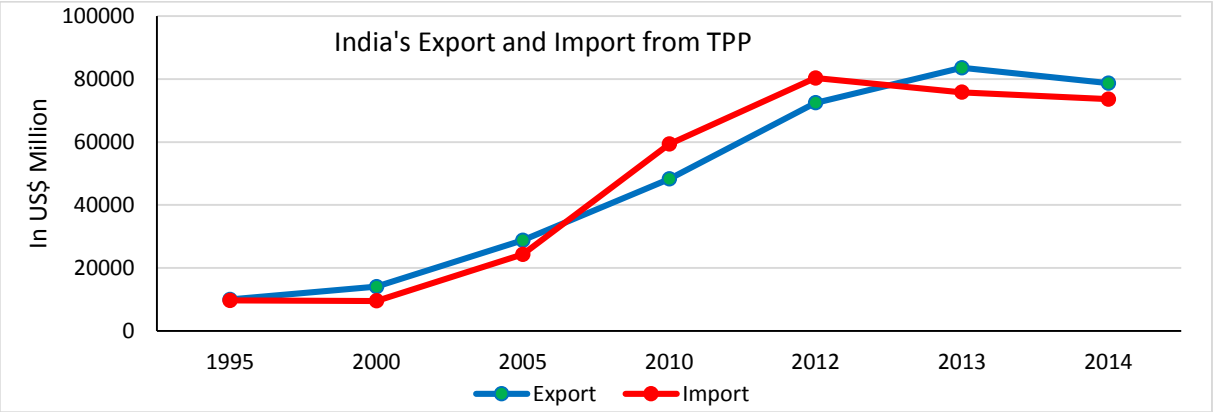
With the rising importance of the global value chains (GVCs) and trade in intermediate products almost 70% of the total trade (UNCTAD 2013), many countries have large proportion of exports comprising of imports of intermediate products. In fact, in many countries, linking into GVCs has actually declined the 'domestic value-added content' in their exports (Banga 2014). Mega FTAs like TPPA, with liberal provisions on foreign direct investments and trade in services, are more likely to increase the imports of inputs which are used in the exports of member countries. This would imply that an estimated "rise in exports" by models like CGE, may not be translated into rise in output and employment but may actually be fed by imports from the partner countries, reducing the existing domestic value-added content of exports of some member countries. This can have adverse implications for domestic production and employment for some of the countries engaged in TPPA. This aspect has been completely ignored by the existing literature.

There is a need to estimate the implications of India joining TPP on imports as well as exports at the product level. Further, apart from trade creation and trade diversion, formation of a bloc such as TPP gives rise to important investment opportunities to countries which may choose to remain outside and serve the combined market through investments. Indian investments in TPP bloc will also have the potential of raising India's exports of intermediate products from India into the bloc.

5. India's Trade with TPP Partners

India's total trade with TPP countries in 2014 recorded US$ 152 billion with $78 billion of exports and around $74 billion of imports (Figure 1). Although imports have increased much faster than exports since 2005, India had a positive balance of trade vis-à-vis TPP countries in 2014 (Figure 1).

Figure 1: India's Export and Import from the TPP Countries



Source: wits database, supplied by World Bank.

5.1 India's Exports to TPP countries

India's total trade with the developed TPP partners has declined over the years as against the rising share of the developing countries (Table 1). The average annual growth of India's exports remained highest to Vietnam (31.8%) followed by Peru (28.6%) and Brunei (27.4%). With the developed TPP partners, even though India's total export to US remained the highest in value terms but since the year 2001 growth rate of India's export to Singapore (25%) has remained the highest followed by Australia (16%) and US (14%).

Table 1: Percentage share of India's total trade with TPP countries

Countries	Total (1991-00)	Total (2001-05)	Total (2006-10)	Total (2011-13)	Total 2014
United States	48.9	49.1	41.1	39.8	41.4
Singapore	8.6	13.2	15.5	14.6	11.0
Japan	20.9	12.7	11.2	11.7	10.3
Malaysia	7.2	7.7	9.2	9.2	10.2
Australia	7.5	9.1	11.8	9.7	8.2
Vietnam	0.7	1.3	2.3	4.3	6.1
Mexico	0.9	1.1	1.8	3.3	4.2
Canada	3.9	4.1	3.5	3.1	3.9
Chile	0.6	0.9	2.0	2.1	2.5
Peru	0.2	0.2	0.5	0.8	0.9
Brunei	0.0	0.0	0.3	0.7	0.6
New Zealand	0.7	0.6	0.7	0.6	0.6

Source: Estimated from Wits database.
Note: The total trade with TPP is considered as 100%. Ranking is based on 2014 database.

Product-wise trends in exports reveal that the export basket with TPP countries is not very diversified with the weight of top ten products increasing over time from 58% in 2005 to 62% in 2013. The top two exports comprise of minerals fuels and natural/cultured pearls comprising around 32% of total exports (Table 2).

Table 2: Share of top 10 products in the total export of India to the TPP countries (percentage)

Products Name	**(2001-2005)**	**(2006-20010)**	**2011**	**2012**	**2013**
Mineral fuels, oils & product of their distillation; etc.	6.7	13.6	18.1	17.8	19.6
Natural/cultured pearls, prec stones & metals, coin etc.	23.4	14.9	12.4	10.6	12.2
Pharmaceutical products	1.9	3.3	4.2	5.1	5.3
Organic chemicals	3.7	4.7	4.5	5.1	4.5
Nuclear reactors, boilers, mchy & mech appliance; parts	4.0	4.6	4.0	3.8	3.9
Vehicles other than railway/ tramway roll-stock, pts & accessories	1.9	2.4	2.9	3.6	3.5
Art of apparel & clothing access, not knitted/crocheted	8.4	5.1	3.5	3.2	3.3
Fish & crustacean, mollusc & other aquatic invertebrate	3.7	1.6	2.4	2.2	3.3
Other made up textile articles; sets; worn clothing etc	4.1	3.2	2.9	3.1	3.2
Meat and edible meat offal	0.5	0.8	1.4	1.6	2.8
Total (Top 10)	**58.2**	**54.1**	**56.2**	**56.2**	**61.7**

Source: Estimated from Wits Database, Ranking is based on 2013

5.2. India's Imports from the TPP Countries

The rise in India's imports from the TPP partner countries has been steady over the years. Imports in value terms have reached $73.6 billion in 2014 (Table 3). A disaggregated analysis shows that the share of the developed countries in India's total imports from TPP is much higher than that of the developing countries. US alone accounted for 34% of total imports of India from the TPP partners in 2005, but this declined to 32% in 2010 and further to 28% in 2014. India's import from the TPP developed countries together reduced from 87% in 2005 to 75% in 2012 and further to 70% in 2014. On the other hand, the share of developing countries in India's import basket has increased to around 30% in 2014 from a mere 13% in 2005.

Table 3: India's total Import from the TPP countries

Countries	**(1991-00)**	**(2001-05)**	**(2006-10)**	**(2011-13)**	**2014**
United States	31,040	26,368	85,110	69,280	20,440
Malaysia	9,700	9,028	28,829	28,931	10,929
Japan	20,528	12,902	33,315	34,071	9,964
Australia	10,468	13,076	47,830	37,217	9,935
Singapore	8,823	10,207	33,796	22,979	7,069
Canada	3,505	3,418	9,952	7,864	3,748
Mexico	669	367	5,369	9,960	3,446
Chile	548	1,063	7,628	7,567	3,184
Vietnam	254	280	2,121	6,326	2,782
Brunei	1	2	1,482	2,410	943
New Zealand	783	539	2,111	2,115	598
Peru	144	140	813	1,543	564
All TPP	86,463	77,389	258,355	230,264	73,600

Source: Wits database supplied by World Bank

At the product level, we find that the import basket is much more concentrated as compared to the export basket as top 10 products comprised 72% of total imports from TPP countries. In 2013, mineral fuels, boilers, and electrical machinery comprised around 38% of total imports (Table 4).

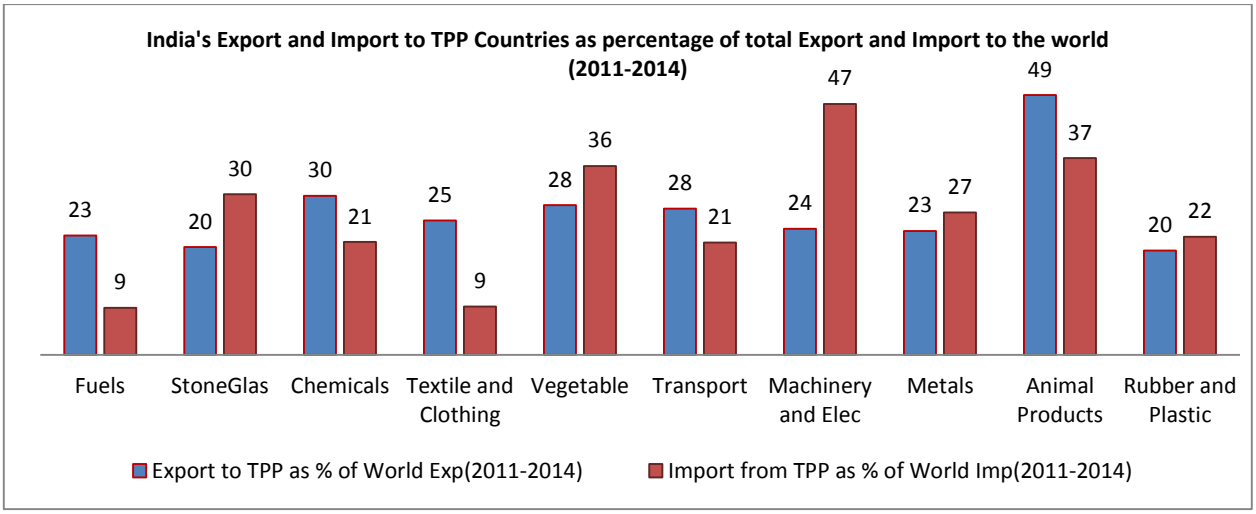
Table 4: Share of top 10 products in the total Import of India from the TPP countries (percentage)

Products Name	(2001-2005)	(2006-20010)	2011	2012	2013
Mineral fuels, oils & product of their distillation; etc.	8.6	19.8	21.9	20.4	19.7
Nuclear reactors, boilers, machinery & mechanical appliance; parts	17.6	13.1	11.9	11.3	10.5
Electrical machinery equip parts thereof; sound recorder etc.	12.5	7.6	8.7	8.2	8.6
Ores, slag and ash	2.5	5.2	4.9	5.5	7.2
Natural/cultured pearls, precious stones & metals, coin etc.	9.1	10.2	10.5	11.4	6.2
Works of art, collectors' pieces and antiques	0.5	1.4	4.1	3.6	5.3
Organic chemicals	5.6	3.8	3.7	3.8	4.6
Iron and steel.	2.8	3.3	3.5	3.6	3.4
Optical, photographic, cinematographic, measuring, checking, precision, etc.	4.9	3.4	3.1	3.2	3.3
Ships, boats and floating structures	2.5	2.1	0.9	2.6	3.0
Total (Top 10)	**66.6**	**69.9**	**73.2**	**73.6**	**71.9**

Source: Estimated from Wits Database,
Ranking is based on 2013 data

A comparative picture of India's exports and imports to the TPP partner countries vis-à-vis the world shows that TPP bloc is important for India in terms of its exports of animal products (49%), chemicals (30%), vegetables (28%) and textiles and clothing (25%). In terms of imports, machinery and electronics (47%), animal products, vegetables, stone and glass, and metals are important to India from the bloc (Figure 2).

Figure 2: India's Export and Import to the TPP Countries as percentage of its total World Export and Import (2011-2014).



Source: Based on Wits Database, Supplied by World Bank

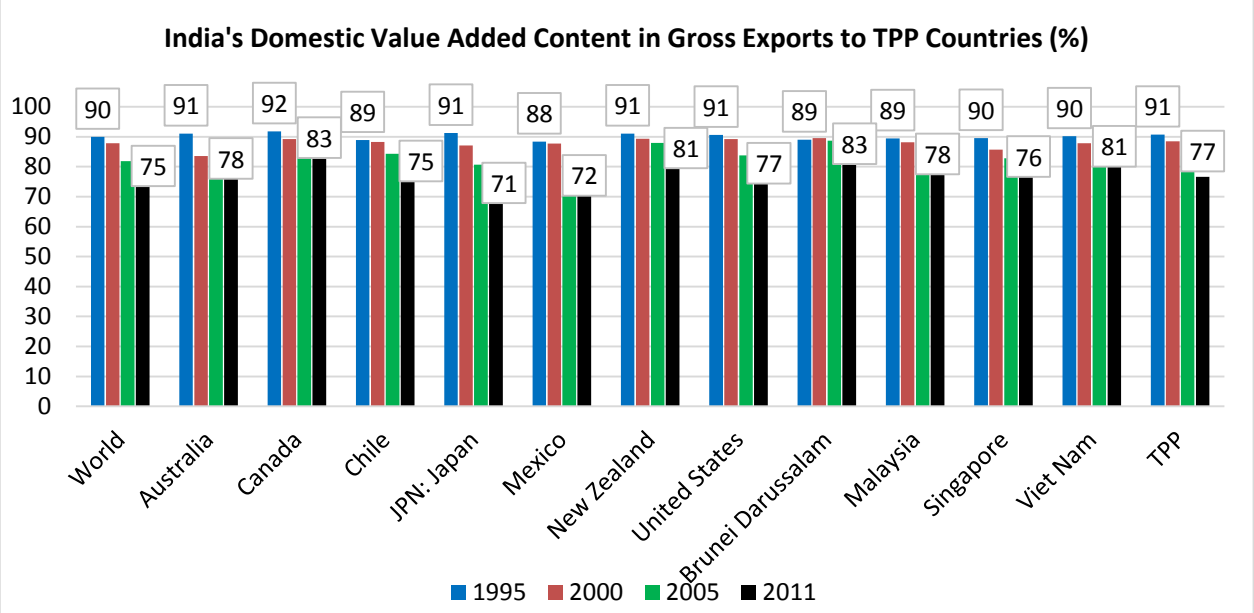
5.3 Trends in India's Bilateral Domestic Value-Added Exports to TPPA Member Countries

The present section attempts to make a broad analysis of India's domestic value added trade (DVA) with these countries using Trade in Value Added (TiVA) database of OECD-WTO (June 2015 version).

If imported intermediate goods are used for exports, the traditional statistics tends to mislead the value added exports originating from the country. Stated differently, if much of the country's export is driven by products with high import content, value added for the domestic economy would be relatively lower. Using the ratio 'gross exports of India minus foreign value added in its exports', we arrive at India's bilateral domestic value added exports with TPPA member countries. It is seen from the estimated result that India's domestic value added content of exports has declined steadily since the year 1995 to 2011 with the world as well as TPP countries as a bloc. The decline with TPP countries is from 91% to 77%. The decline in DVA content in gross exports is much steeper

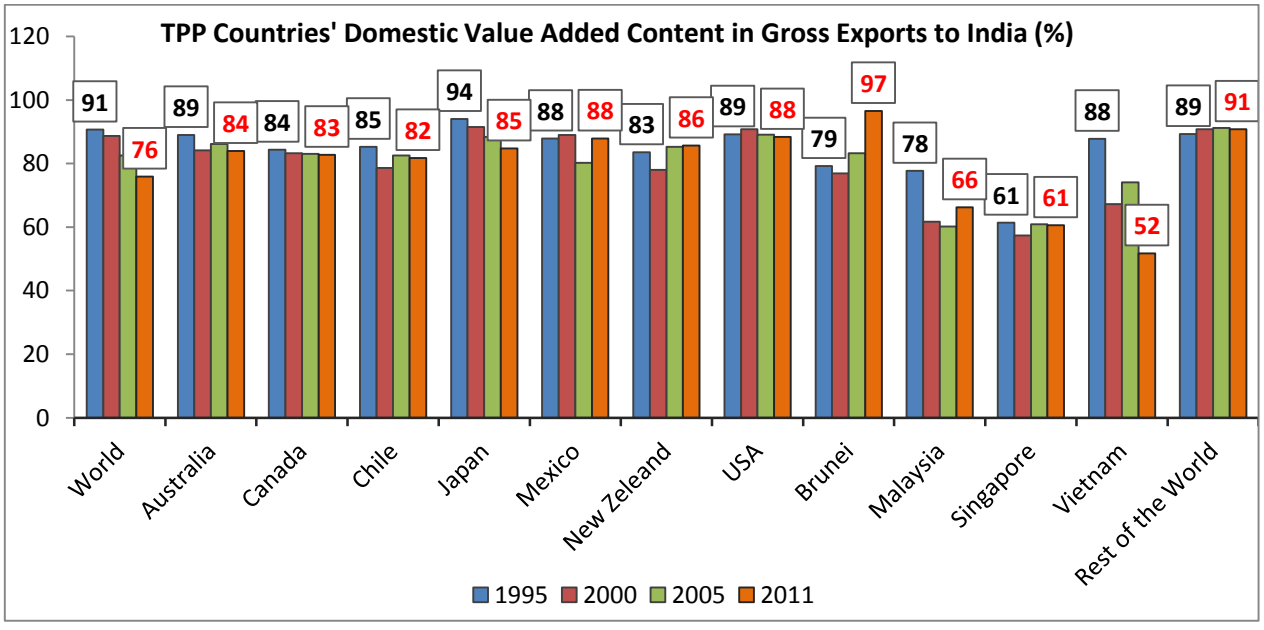
vis-à-vis developed countries in TPP as compared to developing countries (Figure 3). On the other hand, the domestic value-added exports from TPP countries have not been affected much (Figure 4).

Figure 3: Trends in India's Bilateral Value-Added Exports to TPPA Member Countries



Source: Trade in Value Added (TiVA) Database, OECD/WTO (June 2015)

Figure 4: TPP Countries' Domestic Value-Added Exports to India

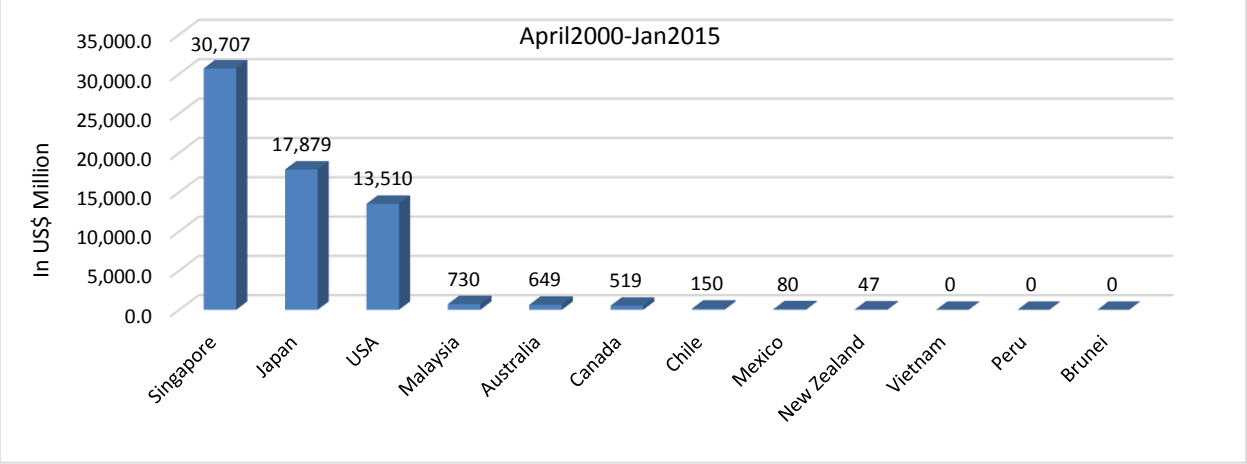


Source: Trade in Value Added (TiVA) Database, OECD/WTO (June 2015)

5.4. India's Investments in/out of TPP Countries

Total inward FDI stock from TPP countries in India was approx. USD 60 billion in 2014 while outward FDI comprised around USD 30 billion (Figure 5) . The top three investing countries in India are from TPP bloc, namely, Singapore, Japan and United States. These countries together invested more than one fourth (26%) of the total FDI inflow during the period April 2000 to January 2015 (figure 8). However, India does not have any Bilateral Investment Promotion and Protection Agreement (BPPA) with any of these three partners. It has BPPA with only five TPP partners (Malaysia, Australia, Mexico, Vietnam and Brunei).

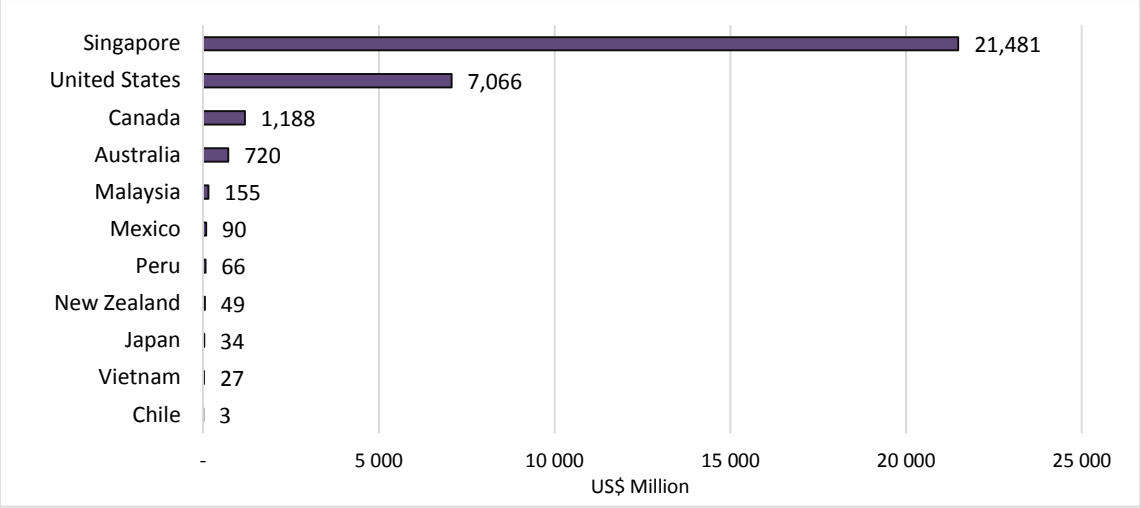
Figure 5: TPP Countries Cumulative Investment (Inward FDI) in India during April 2000-Jan2015 (in US$ Million)



Source: Department of industrial Policy and Promotion, Ministry of Commerce and Industry, GOI

A large number of Indian companies are undertaking outward investments across a wide range of sectors in both the developed and the developing countries of the world. Geographical composition of Indian outward FDI shows that USA and Singapore are among the top 4 recipient in TPP bloc and Singapore alone attracted about 27% of total outward FDI from India by the end 2012. TPP countries together received 39% of the total outward FDI from India. TPP bloc is therefore an important investment destination for India since almost two fifth of India's total outward investment stock in invested there. The distribution of India's outward investment among the TPP Countries is depicted in Figure 6.

Figure 6: India's Outward FDI Stocks in TPP Countries by the end 2012 (in US$ Million)



Source: Bilateral FDI Statistics, UNCTAD
Note: Peru Data is till the end of 2011 and Outward FDI Stock to Brunei is not reported.

6. Methodology and Data Used

To identify the sectors where TPPA may affect trade, impact of tariff liberalisation at a six-digit disaggregation is estimated. The data is extracted from COMTRADE in World Integrated Solutions (WITS). SMART simulations are used which are based on Partial equilibrium. One of the advantages of this approach is that it allows estimation of tariff reduction at a much disaggregated level, for example, implications of removing tariffs on broken rice (at HS six digit disaggregation). Such a disaggregated product level estimations of tariff liberalisation is not possible in any other model. SMART simulations are appropriate to use for TPPA 12 analysis as only few products have high tariffs in many of the member countries and implications for removing these tariffs on exports, imports, trade creation and trade diversion needs to be estimated. This also resolves a number of "aggregation biases." However, it needs to be remembered that this result of partial equilibrium analysis applies to only that product/sector and ignores inter-sectoral linkages. Estimations are also reported for the countries not in the trading bloc in terms of trade creation and trade diversion.

Using SMART simulations, we first estimate the impact of removal of all six digit product level tariffs in TPPA12 countries. Existing applied tariffs are used and all import tariffs among TPPA12 countries are brought down to zero, while tariffs with respect to excluded countries remain the same. Implications of India being included in TPP12 bloc are then estimated.

7. Implications of Tariff Liberalisation under TPPA for India

The implication of TPPA tariff liberalisation is based on two alternative scenarios. The first would reflect the loss of export market for India in the post TPPA with the member countries. This is basically an assessment of how much loss or gain India would make in the post TPPA situation under the scenario of not becoming a part of the TPPA. Under the first scenario, we also find the product specific export loss with the TPPA member countries. The second alternative scenario considers the export gain to India if it becomes a part of the TPPA.

Both the above scenarios are estimated at a six digit disaggregation level in using the SMART simulations which are based on Partial equilibrium. The rationale behind the use of this approach is based on the fact that it allows estimation of tariff reduction at a much disaggregated level, for example, implications of removing tariffs on broken rice (at HS six digit disaggregation). Such a disaggregated product level estimations of tariff liberalisation is not possible in any other model. SMART simulations are appropriate to use for TPPA 12 analysis as only few products have high tariffs in many of the member countries and implications for removing these tariffs on exports, imports, trade creation and trade diversion needs to be estimated. This also resolves a number of "aggregation biases." However, it needs to be remembered that this result of partial equilibrium analysis applies to only that product/sector and ignores inter-sectoral linkages.

7.1 Implications for India's Exports to TPP Countries Post TPPA: Trade Diversion

Using SMART simulations, we first estimate the impact of removal of all six digit product level tariffs in TPPA12 countries. Existing applied tariffs are used and all tariffs among TPPA12 countries are brought down to zero. The simulation result shows the impact on India's export during the post tariff liberalisation to TPPA countries.

Table 5 presents the impact of first scenario on the trade diversion i.e. exports with the TPP partners. The tariff liberalisation lowers the trade costs allowing the consumer to access the cheaper good from these TPP partners. Similarly, the lower tariff also allows the producer to get access to the cheaper imported inputs which in turn reduces the prices of the finally produced goods. This effectively would affect the other trading partners outside the TPP bloc. Estimated results show a decline in exports from India to TPP partners of $190 million. In absolute value terms the highest

market loss would be in USA ($ 94 million) followed by Malaysia ($ 36 million), Mexico, Japan and Vietnam.

Table 5: Loss of export markets for India in post TPPA situation

Partner Countries	Trade Balance in 2013 (1000 $)	Loss of Export Markets in Post TPPA(1000 $)
United States	19,356	-94,995
Singapore	4,858	-330
Vietnam	-4,502	-12,851
Japan	-3,546	-12,543
Malaysia	-1,530	-36,328
Mexico	-855	-12,603
Australia	-1,898	-7,683
Canada	-935	-7,568
Peru	-2,115	-3,512
New Zealand	-338	-2,103
Brunei	-653	-269
Total	7,844	-190,785

Source: Estimated using SMART simulations

The impact of TPPA is also estimated at two-digit product level. The existing applied tariffs are used in the simulation process. Table 6 presents the trade diversion results at the product level for India. For United States, product specific losses are reported only for those products where trade diversion is more than $10 million post TPPA. The highest market loss for Indian exporters would be for the textile sectors followed by organic chemicals in the USA markets. The estimated result in Japan's market is reported for products which would face a market loss of more than US$ 5 million post TPPA. In Japan, India is likely lose export market of over US$12.5 million and the most affected products would be the Fish and Crustaceans nec, organic chemical and Copper & article thereof. Similarly, India market loss in Malaysia will be of US$ 36 million. The exports of articles of iron and steel are likely to be affected the most followed by tobacco products and boilers.

Table 6: Product Specific Loss of India in United States Post TPPA

Product	**Markets in TPP Countries**	**Potential Export Loss**
	United states	**-94,995**
61	Articles of apparel and clothing accessories, knit	-31,760
62	Articles of apparel and clothing accessories, not	-24,258
29	Organic chemicals	-5,461
84	Nuclear reactors, boilers, machinery and mechanical	-5,131
64	Footwear, gaiters and the like;	-3,761
27	Mineral fuels, mineral oils and products of their	-2,377
21	Miscellaneous edible preparations	-2,146
85	Electrical machinery and equipment and parts there	-1,806
87	Vehicles other than railway or tramway rolling	-1,727
39	Plastics and articles thereof	-1,536
42	Articles of leather; saddlery and harness; travel	-1,373
63	Other made-up textile articles; sets; worn clothing	-1,222
73	Articles of iron or steel	-1,124
38	Miscellaneous chemical products	-1,074
96	Miscellaneous manufactured articles	-1,004
	Japan	**-12,543**
3	Fish and crustaceans, molluscs and other aquatic	-2,283
29	Organic chemicals	-1,499
74	Copper and articles thereof	-1,289
27	Mineral fuels, mineral oils and products of their	-907
4	Dairy produce; birds' eggs; natural honey; edible	-710
21	Miscellaneous edible preparations	-692
71	Natural or cultured pearls, precious or semi-precious	-549
64	Footwear, gaiters and the like;	-542
	Malaysia	**-36,328**
73	Articles of iron or steel	-16,884
24	Tobacco and manufactured tobacco substitutes	-6,098
10	Cereals	-2,277
84	Nuclear reactors, boilers, machinery and mechanical	-1,837
72	Iron and steel	-1,691
87	Vehicles other than railway or tramway rolling	-1,625
76	Aluminium and articles thereof	-1,222
74	Copper and articles thereof	-824
39	Plastics and articles thereof	-774
85	Electrical machinery and equipment and parts there	-629
	Singapore	**-330.03**
22	Beverages, spirits and vinegar	-330.03
	Australia	**-7,683**
87	Vehicles other than railway or tramway rolling	-4,463
71	Natural or cultured pearls, precious or semi-precious	-503
84	Nuclear reactors, boilers, machinery and mechanical	-426

	Mexico	**-12,603**
87	Vehicles other than railway or tramway rolling	-4769
62	Articles of apparel and clothing accessories, not	-1621
61	Articles of apparel and clothing accessories, knit	-1521
64	Footwear, gaiters and the like;	-991
9	Coffee, tea, maté and spices	-786
	New Zealand	**-2,103**
87	Vehicles other than railway or tramway rolling	-917
84	Nuclear reactors, boilers, machinery and mechanical	-198
32	Tanning or dyeing extracts; tannins	-164
64	Footwear, gaiters and the like;	-115
	Brunei	**-269**
85	Electrical machinery and equipment and parts there	-157
	Peru	**-3,512**
87	Vehicles other than railway or tramway rolling	-1,056
30	Pharmaceutical products	-794
52	Cotton	-561
84	Nuclear reactors, boilers, machinery and mechanical	-104
64	Footwear, gaiters and the like;	-98

Source: Estimated using SMART simulations

India's market loss in the top 5 countries namely United States, Malaysia, Mexico, Japan and Vietnam taken together is about 90%. On the other hand the market loss in rest of the countries is low in absolute terms. In Singapore the only major affected products would be the beverages and spirits.

7.2. Implications for India's Trade if India Joins TPPA

Under the second scenario we use the SMART simulation to estimate the rise in exports and imports of India with the TPP countries if India becomes a part of the trading bloc. The result is reported in Table 7. The results show that India's exports would rise by around $5.3 billion annually, however imports into India will rise by $10.4 billion leaving a net deficit in balance of trade of $5.1 billion. However, the rise in import from these partners is well above the rise in export causing a net trade deficit of more than US$ 5 billion.

India will experience the highest trade deficit with the Japan followed by Australia, Singapore and Malaysia once it becomes a part of the TPP trading bloc. On the other hand, India is likely to experience a trade surplus with countries viz. Vietnam, Mexico, Peru and Chile.

Table 7: India's Rise in export and Import if it becomes a part of TPP negotiations

	Rise in India's Exports (USD 1000)	**Rise in Imports (USD 1000)**	**India's Net Trade Balance (USD 1000)**
United States	3,424,659	3,517,679	-93,020
Australia	191,284	1,748,488	-1,557,204
Japan	73,100	1,930,906	-1,857,806
Malaysia	162,958	1,025,293	-862,335
New Zealand	22,471	56,145	-33,674
Singapore	-330	995,073	-995,403
Vietnam	740,808	458,461	282,347
Mexico	336,116	64,920	271,196
Canada	222,763	540,805	-318,042
Chile	89,260	42,538	46,722
Brunei	487	33,252	-32,765
Peru	53,462	5,951	47,511
Total	**5,317,036**	**10,413,560**	-5,096,524

Source: Estimated using SMART simulations

The products which may experience a rise in their exports and imports country-wise are listed in Appendix 1 and Appendix 2. Exports to USA increase in products like boilers, headgears, oils, umbrellas, wool, oilseeds, ceramic products, etc. While imports from USA will rise in products like vehicles, electrical machinery, pharmaceutical products, organic chemicals, plastic articles, etc. Likely rise in imports is across much wider range of products as compared to likely rise in exports which indicates that the adjustment cost to the economy will be high as displacement of employment due to increased imports will be much higher and widespread across sectors as compared to expansion of employment because of increased exports.

7.3 Implications for India's Investment Opportunities in TPP Countries Post TPPA

While a trading bloc may result in trade creation as well as trade diversion, in terms of investments it creates opportunities with the increased size of the tariff free market as well as low non-tariff barriers. While Indian exports may take a hit if India remains outside TPP and imports may rise much more than exports if India joins, the opportunities for investments increase substantially if India remains out of TPP. Some of the provisions in TPPA with respect to state owned enterprises (SOE) would require that the incentives given to SOEs reduce substantially making them less

competitive within the domestic market. India can take the opportunity of increasing its investments in TPP countries and avail the opportunities arising out of increased competitiveness as well as increased size of the market.

The investment potential arises in those products where the estimated rise in exports of a TPP country in its partner TPP country is higher than the country's existing global exports. This indicates that the country may have limited productive capacity and therefore an opportunity arises to invest in the country and export to the TPP partner country. In the identified list of such products, those products have been excluded where India's global exports are lower than the expected rise in exports, thereby eliminating products which have limited supply capacity in India. Using this approach, the estimated potential export markets which is available for Indian investments is estimated to be around $14.5 billion (Table 8). The product wise potential exports in potential destination countries in TPP trading bloc is reported in Appendix 3. Vietnam and Japan can be important investment destinations for Indian FDI to cater to US markets while USA, Australia, Canada and Vietnam can be important investment destinations for catering to Japan's markets.

Table 8: Potential Exports, Export Markets and Investment Destinations for Indian FDI in TPP

Investment Destinations	Investment Potential
Australia	1,486,334
Canada	1,241,751
Chile	296,909
Japan	3,606,850
Malaysia	446,883
Mexico	207,887
New Zealand	584,108
Singapore	294,819
United States	2,632,901
Vietnam	3,732,250
Total Investment Potential	**14,530,692**

Source: Estimated using SMART simulations

8. Summary and Conclusions

This paper provides a quantitative assessment of gains and losses to India of joining and not joining TPPA. A detailed analysis is undertaken to estimate the extent of trade diversion which may adversely affect India's exports to these countries. Further, if India becomes a member of TPPA, quantitative assessment is undertaken on its likely rise in exports and imports to/from different member countries. The analysis is undertaken at HS six-digit disaggregation which enables identification of market-wise potential products for exports and imports of India. More importantly, the paper identifies investment potential for India in TPP countries if India remains outside TPP.

The trends in India's trade with TPP countries show that India's total trade with TPP countries has increased over time and in 2014 reached $152 billion with $78 billion exports and around $74 billion imports. Although imports have increased much faster than exports since 2005, India had a positive balance of trade vis-à-vis TPP countries in 2014. However, it is important to note that although exports to TPP countries have been rising over the years, the domestic value-added content has been falling. India's domestic value added content of exports to TPP countries declined from 91% in 1995 to 77% in 2011.In terms of total inward FDI stock, TPP countries FDI stock amounted to around $ 60 billion in 2014 while India's outward FDI into this trading bloc comprised around $30 billion.

The paper estimates the impact of TPPA on India's trade and investments by undertaking three sets of analyses. First, trade diversion for India is estimated post TPPA; second, implications of India joining TPPA are reported in terms of likely increase in India's exports and likely increase in its imports from TPPA countries; third, analysis is undertaken to estimate market-wise and product-wise investment potential of India in TPP countries if India does not join TPPA. The analyses are undertaken using SMART simulations at six-digit disaggregated data (HS codes). All results are reported product-wise/country-wise.

The results of the first analysis, i.e., **trade diversion from India post TPPA, show that there will be a likely decline of exports from India to TPP countries of the amount $190 million.** In absolute value terms, the highest market loss would be in USA ($ 94 million) followed by Malaysia ($ 36 million), Mexico, Japan and Vietnam.

The second analysis reports the impact on India's trade if it joins TPPA. **The results show that India's exports would rise by around $5.3 billion annually, however imports into India will rise by $10.4 billion leaving a net deficit in balance of trade of $5.1 billion.** India will experience the highest trade deficit with the Japan followed by Australia, Singapore and Malaysia. On the other hand, India is likely to experience a trade surplus with countries viz. Vietnam, Mexico, Peru and Chile.

The results of the third analysis, i.e., implications for investments from India into TPP countries if India remains out of TPPA, show **that there exists an investment potential of $14.5 billion in TPP countries.** At present India's outward investments in TPP countries is around $30 billion which can rise by almost 50%. The product wise potential exports in potential destination countries in TPP trading bloc is reported.

Although, TPPA may not offer India much gain in terms of rise in its exports and would have very limited trade diversion, it does offer huge investment opportunities for India. The TPP trading bloc will also provide India with opportunities for developing its own global value chains with Indian lead firms. The provisions within TPP restrict the member countries to provide additional benefits/subsidies to state owned enterprises as they have to 'act on the basis of commercial consideration'[5]. This would imply level playing field for Indian investors in countries like Vietnam and Malaysia, which till now provided huge support to its state-owned enterprise. These countries may lack the capacity of catering to the enlarged markets, where India has the competitive advantage and supply capacity, especially in textiles & clothing, processed agriculture products and articles of wood and rubber. This will also provide Indian firms with opportunities for developing their own global value chains by being the lead firms. Being the lead firms in GVC provides an opportunity to capture maximum value and increase domestic value added content in exports. They could source their inputs and processed intermediate products from India giving an opportunity to Indian SMEs to link into GVCs and upgrade in the value chains.

In concluding, it can be said that remaining out of TPP trading bloc can benefit India more than joining the bloc. The trade diversion is not substantial but joining TPPA may lead to a much higher rise in imports as compared to exports. The investment potential and opportunities become more

[5] https://wikileaks.org/tpp-soe-minister

viable by remaining outside TPPA. Further, India can continue to enjoy the policy space it has with respect to many of the restrictive provisions of TPPA. The restrictive investor-state dispute settlement can be completely avoided making it easier for India to invest in these countries without signing-in on obligations. Other existing domestic regulations with respect to Intellectual property rights, government procurement, IT etc. can be maintained. The fact that 40% of the global economy is tied into the TPP agreement provisions should be seen as an opportunity in disguise for India to improve its global competitiveness and ***make India* by *making in India***.

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APPENDIX TABLE

Appendix 1: India's Likely Rise in Exports to the TPP Partners if it Joins TPPA (at Two digit HS level)

Sl. No.	HS Code	Product Descriptions	In US$ Million
India's likely increase in export to United States (Total US$ 3,424. 66 Million)			
1	84	Boilers, Machinery and Mechanical	852.8
2	65	Headgear and Parts Thereof	633.1
3	33	Oils, Resinoids; perfumes., cosmetic	596.2
4	89	Ships, Boats and Floating Structures	361.6
5	66	Umbrellas, Walking Sticks etc.	184.1
6	51	Wool, Animal hair; Horsehair etc.	131.4
7	12	Oil Seeds & Oleaginous Fruits;	79.5
8	69	Ceramic Products	62.1
9	85	Electrical Machinery & Equipment.	48.1
10	74	Copper and Articles Thereof	40.9
11	5	Products of Animal Origin	37.7
12	4	Dairy Prod, Eggs; Natural Honey etc.	35.2
13	61	Articles of Apparel & Clothing	33.8
14	83	Misc. Articles of Base Metal	33.1
15	67	Prepared Feathers & Articles made of FE	23.3
16	53	Other Vegetable Textile fibres; Paper, yarn and Wov	20.9
17	59	Impregnated, coated/lam. Textile	18.2
18	82	Tools, Implements, cutlery, spoon fork	17.9
19	71	Natural or Cultured Pearls	17.1
20	78	Lead & Articles Thereof ..	14.5
21	58	Sp. woven fabrics; Tufted textile Fab..	14.3
22	76	Aluminum & Articles Thereof	14.2
23	57	Carpets & textile floor Coverings	11.6
24	81	Other base Metals; Cermets; articles there off	11.6
25	68	Stone, plaster, cement, asbestos, mica	10.9
26	55	Man-Made Staple Fibres	10.8
27	6	Live trees, other plants; bulbs, roots and the	9.4
28	29	Organic Chemicals	9.0
29	26	Ores, Slag and Ash	8.7
30	3	Fish & Crustaceans, Molluscs & Other Aquitic	7.8
31	9	Coffee, Tea, Maté and Spices	6.5
32	62	Articles of apparel & clothing Accessories	6.4
33	54	Man-Made Filaments; Strip & Like of manmade	6.3
34	7	Edible Veg. & Certain Roots & Tubers	5.7
35	43	Furskins & Artificial Fur; Manufacturers thereof	5.7
36	87	Vehicles other than railway, tramway Rolling	4.2
37	52	Cotton	4.1
38	63	Other made-up textile; sets; worn clothing	3.2
39	72	Iron & Steel	2.7
40	73	Articles of Iron or Steel	2.2
41	79	Zinc & Articles Thereof	1.3
42	11	Milling industry product; malt; starches	1.1

Appendix 1 (Continues…)

India's likely increase in export to Australia (Total US$ 191.28 Million)			
Sl. No.	**HS Code**	**Product Descriptions**	**In US$ Million**
1	89	Ships, boats & floating structures	28.7
2	84	boilers, machinery & mechanical	27.1
3	65	Headgear & parts thereof	24.5
4	78	Lead & articles thereof	21.4
5	69	ceramic products	14.4
6	87	Vehicles other than railway or tramway	7.4
7	61	Articles of apparel & clothing accessories	7.0
8	74	Copper & articles thereof	7.0
9	66	Umbrellas, walking sticks, seat-Sti	5.1
10	62	Articles of apparel & clothing accessories	4.6
11	71	Pearls, precious or semi-precious	3.7
12	83	Miscellaneous articles of base metal	3.6
13	82	Tools, implements, cutlery, spoon, forks	3.2
14	85	Electrical machinery & equipments & parts t	2.9
15	58	Special woven fabrics; tufted textile	2.8
16	72	Iron and steel	2.7
17	64	Footwear, gaiters; parts of such articles	2.5
18	67	Prepared feathers & down & articles …	2.4
19	59	Impregnated, coated, laminated textile	2.4
20	51	Wool, fine or coarse animal hair; horsehair	2.0
21	53	Other veg. textile fibres; paper yarn and Wov	1.8
22	55	Man-made staple fibres	1.4
23	5	Animal products, not elsewhere specified	1.2
24	57	Carpets & textile floor coverings	1.1
India's likely increase in export to Japan (Total US$ 73.1 Million)			
1	61	Articles of apparel & clothing acces, knit	20.7
2	83	Miscellaneous articles of base metal	9.7
3	85	Electrical machinery & equip. & parts	9.4
4	7	Edible veg & certain roots & tubers	9.2
5	3	Fish & crustaceans, molluscs and….	6.2
6	27	Mineral fuel, mineral oils & products	3.3
7	5	Animal products, not elsewhere specified	3.3
8	29	Organic chemicals	3.2
9	4	Dairy produce; birds' eggs; nat. honey..	1.9
10	2	Meat & edible meat offal	1.8
11	9	Coffee, tea, mate & spices	1.8
12	84	Nuclear reactors, boilers, machinery & mechanical	1.6
13	59	Impregnated, coated, covered or laminated textile	1.5
14	42	Articles of leather; saddlery & harness Travel	1.3
India's likely increase in export to Malaysia (Total US$ 162.96 Million)			
1	12	Oil seeds & oleaginous fruits;	43.4
2	67	Prepared feathers & down & articles made of FE	33.7
3	33	Essential oils Resinoids; Perfumery, Cosmetic	14.3
4	68	Articles of Stone, plaster, cement, asbestos, mica	11.6

Appendix 1 (Continues….)

Sl. No.	HS Code	Product Descriptions	In US$ Million
5	74	Copper & articles thereof	8.3
6	65	Headgear & parts thereof	6.3
7	69	Ceramic products	6.1
8	78	Lead & articles thereof	3.2
9	57	Carpets & other textile floor coverings	3.1
10	66	Umbrellas, walking sticks, seat-sti	2.8
11	84	Nuclear reactors, boilers, machinery & mechanical	2.6
12	89	Ships, boats & floating structures	2.2
13	4	Dairy produce; birds' eggs; natural honey	2.0
14	87	Vehicles other than railway or tramway	1.8
15	71	Natural or cultured pearls	1.8
16	64	Footwear, gaiters & the like…	1.5
17	59	Impregnated, coated/ laminated textile	1.5
18	7	Edible veg.& certain roots & tubers	1.3
19	51	Wool, fine or coarse animal hair; horsehair	1.2
20	58	Special woven fabrics; tufted textile fabrics;	1.2
21	27	Mineral fuels, mineral oils & products	1.1
22	62	Articles of apparel & clothing accessories	1.1
India's Likely increase in export to Vietnam (Total US$ 740.81 Million)			
1	4	Dairy produce; eggs; natural honey etc.	501.1
2	78	Lead & articles thereof	47.2
3	61	Articles of apparel & clothing acces, knit …	43.8
4	12	oil seeds & oleaginous fruits;	41.3
5	65	Headgear & parts thereof	24.7
6	54	Man-made filaments; strip & the likes of Man made	11.9
7	67	Prepared feathers & down and articles made of FE	8.8
8	5	Animal products, not elsewhere specified	7.9
9	62	Articles of apparel & clothing accessories	5.5
10	7	Edible vegetables & certain roots & tubers	3.7
11	27	Mineral fuels, mineral oils & products of their	3.6
12	3	Fish & crustaceans, molluscs & other Aquatic	3.3
13	59	Impregnated, coated, covered textile	3.3
14	64	Footwear, gaiters & the like	3.1
15	69	Ceramic products	2.7
16	1	Live animals	2.4
17	52	Cotton	2.2
18	71	Pearls, precious or semi-precious	2.0
19	33	Essential oils & Resinoids; Perfumery, Cosmetic	2.0
20	66	Umbrellas, walking sticks, seat-sti	1.9
21	74	Copper & articles thereof	1.9
22	89	Ships, boats & floating structures	1.5
23	6	Live trees & other plants; bulbs, roots…	1.5
24	2	Meat & edible meat offal	1.3
25	84	Nuclear reactors, boilers, mach & mech….	1.2
26	58	Special woven fabrics; tufted textile fabrics; lac	1.1

Source: Estimated Using SMART simulation in WITS

Appendix 2: India's Likely Rise in Imports from the TPP Partners if it Joins TPP (at Two digit HS level)

Sl. No	HS Code	Product Descriptions	In US$ Million
India's likely increase in Import from United States (Total US$ 3517.68 Million)			
1	84	boilers, mach. & mechanical	712.3
2	71	Pearls, precious or semi-precious	437.2
3	85	Electrical machinery & equip & parts	276.5
4	87	Vehicle other than railway/tramway	209.6
5	27	Mineral fuels and oil, products of their	156.3
6	29	Organic chemicals	119.3
7	57	Carpets & textile floor coverings	114.5
8	39	Plastics & articles thereof	114.4
9	90	Optical, photographic cinematographic, Measuring	113.9
10	38	Miscellaneous chemical products	96.0
11	30	Pharmaceutical products	94.7
12	31	Fertilizers	93.7
13	88	Aircraft, spacecraft, and parts thereof	90.5
14	72	Iron and steel	68.9
15	73	Articles of iron or steel	66.6
16	8	Edible fruit & nuts; peel of citrus fruit	63.7
17	89	Ships, boats & floating structures	58.6
18	86	Railway/ tramway loco., rolling etc.	58.6
19	28	Inorganic chemicals; organic or inorganic Compound	50.8
20	35	Albuminoidal substances modified starches; glues	46.2
21	48	Paper & paperboard; articles of paper pulp	41.8
22	21	Miscellaneous edible preparations	38.5
23	7	Edible veg & certain roots and tubers	31.2
24	47	Pulp of wood or fibrous cellulosic material	30.4
25	40	Rubber and articles thereof	22.5
26	76	Aluminium and articles thereof	19.0
27	32	Tanning or dyeing extracts; tannins and their Deri	16.9
28	11	Prod. of milling indus.; malt; starches	13.9
29	22	Beverages, spirits and vinegar	13.1
30	70	Glass and glassware	12.6
31	25	Salt; sulphur; earth & stone; plastering mat.	11.8
32	37	Photo/cinematographic goods	11.7
33	24	Tobacco & manufacturer of tobacco substitutes	11.5
34	34	Soap, org. surface-active agent, washing	10.6
35	44	Wood & its article; wood charcoal	10.3
36	49	Printed books, newspapers, pictures & other Production	10.3
37	55	Man-made staple fibres	9.8
38	96	Miscellaneous manufactured articles	9.4
39	62	Articles of apparel and clothing accessories	8.8
40	33	Essential oil & Resinoids; Perfumery, Cosmetic	8.6
41	82	Tools, implements, cutlery, spoons, forks	8.5
42	17	Sugars & sugar confectionery	8.4
43	83	Misc. articles of base metal	8.2
44	74	Copper and articles thereof	8.1
45	94	Furniture; bedding, mattress supports etc.	7.1

Appendix 2 (Continues …)

Sl. No	HS Code	Product Descriptions	In US$ Million
46	63	Other textile; sets; worn clothing	6.6
47	81	Other base metals; cermet; articles …	6.5
48	95	Toys, games & sports requisites; parts &	5.6
49	64	Footwear, gaiters & like; parts of such articles	5
50	23	Residues & waste from food industries;	4.7
51	69	Ceramic products	4.4
52	4	Dairy prod.; bird eggs; natural honey; edible	4.4
53	60	Knitted or crocheted fabrics	4.4
India's likely increase in Import from Australia (Total US$1748.49 Million)			
1	71	Pearls, precious or semi-precious	1209.6
2	27	Mineral fuels/oils & products of their	228.8
3	7	Edible & certain roots and tubers	37.3
4	8	Edible fruit, nuts; peel of citrus fruit	34.9
5	76	Aluminium and articles thereof	25.1
6	17	Sugars and sugar confectionery	22.1
7	84	Nuclear reactors, boiler, machinery & mechanical	21.3
8	85	Electrical, Machinery & equipment & parts	17.8
9	26	Ores, slag and ash	16.8
10	28	Inorganic chemical; organic/ inorganic components	16.3
11	74	Copper & articles thereof	8.9
12	11	Milling industry. prod.; malt; starches;	7.8
13	78	Lead & articles thereof	6.9
14	51	Wool, fine coarse animal hair….	6.3
15	86	Railway/ tramway loco., rolling stock	6.2
16	72	Iron and steel	6
17	22	Beverages, spirits and vinegar	6
18	32	Tanning or dyeing extracts; tannins..	5.4
19	12	Oil seeds and oleaginous fruits;	5.2
20	31	Fertilisers	5.1
21	90	Optical, photo/, cinematographic..	4.4
22	33	Essential oils & resinoids; perfumes	3.3
23	10	Cereals	3.1
24	89	Ships, boats and floating structures	3
25	87	Vehicles other than railway/tramway	3
26	44	Wood & articles of wood; wood charcoal	2.9
27	79	Zinc & articles thereof	2.7
28	75	Nickel & articles thereof	2.5
29	30	Pharmaceutical products	2.5
30	39	Plastics and articles thereof	2.5
31	73	Articles of iron or steel	2.3
32	48	Paper/paperboard; paper articles pulp	1.9
33	47	Pulp of wood or fibrous cellulosic material	1.9
34	21	Miscellaneous edible preparations	1.7
35	4	Dairy prod; birds' eggs; natural honey; edible	1.6

Appendix 2 (Continues….)

Sl. No	HS Code	Product Descriptions	In US$ Million
36	83	Misc. articles of base metal	1.5
37	29	Organic chemicals	1.4
38	41	Raw hides & skins (other than furskin)	1.3
39	38	Miscellaneous chemical products	1.1
40	23	Residues & waste from food industry	1.1
India's likely increase in Import from Japan (Total US$1930.91 Million)			
1	84	boilers, mach. & mech.	478.9
2	87	Vehicles other than railway/ tramway	323.7
3	25	Salt; sulphur; earths, stone; plastering material	305.8
4	85	Electrical machinery equipment & parts …	161.6
5	72	Iron and steel	106.0
6	73	Articles of iron or steel	56.9
7	29	Organic chemicals	56.0
8	39	Plastics and articles thereof	43.4
9	90	Optical, photographic, cinematographic, measuring	39.2
10	89	Ships, boats and floating structures	34.6
11	76	Aluminium and articles thereof	34.3
12	55	Man-made staple fibres	30.4
13	27	Mineral fuels, mineral oils & products of their	28.5
14	40	Rubber and articles thereof	23.5
15	38	Miscellaneous chemical products	21.5
16	54	Man-made filaments; strip & ..	21.5
17	35	Albuminoidal substances; mod. Starches; glues	18.0
18	51	Wool, fine/ coarse animal hair; yarn	16.3
19	71	Pearls, precious or semi-precious	12.4
20	86	Railway/ tramway loco., rolling stock	12.4
India's likely increase in Import from Malaysia (Total US$ 1025.30) Million)			
1	15	Animal or vegetable fats and oils & their cleava	223.2
2	44	Wood and articles of wood; wood charcoal	129.4
3	84	Nuclear reactors, boilers, machinery & mechanical	71.1
4	85	Electrical machinery and equipment's & parts thereof	64.8
5	29	Organic chemicals	55.9
6	76	Aluminium and articles thereof	55.9
7	25	Salt; sulphur; earths & stone; plastering material	52.4
8	27	Mineral fuels, mineral oils & products of their	37.9
9	24	Tobacco, manufactured tobacco substitutes	35.7
10	38	Miscellaneous chemical products	32.7
11	64	Footwear, gaiters & the like; parts of such article	29.0
12	73	Articles of iron or steel	28.8
13	89	Ships, boats and floating structures	23.6
14	39	Plastics and articles thereof	19.9
15	94	Furniture; bedding, mattress supports,	17.0
16	72	Iron and steel	12.9
17	69	Ceramic products	12.2
18	40	Rubber and articles thereof	10.6
19	18	Cocoa and cocoa preparations	10.5

Source: Estimated Using SMART simulation in WITS

Appendix 3.A.: India's Investment Potential in TPP Countries: Target Market for Export is United States

Sl. No	Product Code	Likely Investment Destination	Product Descriptions	Existing Investment Potential (USD Million)
			Total Investment potential	8,983.0
1	61	Vietnam	Articles of apparel & clothing accessories, knit	1,479.1
2	87	Japan	Vehicles other than railway or tramway rolling sto	1,336.7
3	62	Vietnam	Articles of apparel & clothing accessories, not	829.6
4	64	Vietnam	Footwear, gaiters & the like; parts of such article	823.1
5	84	Japan	Nuclear reactors, boilers, machinery & mechanical	637.0
6	85	Japan	Electrical machinery & equipment & parts there	431.3
7	4	NZ	Dairy produce; birds' eggs; natural honey; edible	407.6
8	39	Japan	Plastics & articles thereof	215.1
9	29	Japan	Organic chemicals	152.4
10	42	Vietnam	Articles of leather; saddlery & harness; travel	141.4
11	90	Japan	Optical, photographic, cinematographic, measuring,	135.4
12	27	Japan	Mineral fuels, mineral oils & products of their	109.1
13	40	Japan	Rubber & articles thereof	105.0
14	54	Japan	Man-made filaments; strip & the like of man-made	1,00.31
15	40	Malaysia	Rubber & articles thereof	100.1
16	61	Malaysia	Articles of apparel & clothing accessories, knit	94.3
17	74	Chile	Copper & articles thereof	79.2
18	85	Malaysia	Electrical machinery & equipment & parts there of	73.0
19	82	Japan	Tools, implements, cutlery, spoons & forks, of b	70.0
20	85	Vietnam	Electrical machinery & equipment and parts there	60.1
21	35	Japan	Albuminoidal substances; modified starches; glues;	59.8
22	62	Malaysia	Articles of apparel & clothing accessories, not	56.3
23	81	Japan	Other base metals; cermets; articles thereof	49.8
24	22	Chile	Beverages, spirits & vinegar	35.8
25	22	Australia	Beverages, spirits & vinegar	35.6
26	32	Japan	Tanning or dyeing extracts; tannins & their deri	35.3
27	37	Japan	Photographic or cinematographic goods	32.6
28	16	Vietnam	Preparations of meat, of fish or of crustaceans	30.5
29	28	Japan	Inorganic chemicals; organic or inorganic compound	30.2
30	69	Japan	Ceramic products	27.4
31	59	Vietnam	Impregnated, coated, covered or laminated textile	26.4
32	70	Japan	Glass and glassware	26.3

Source: Estimated Using SMART simulation in WITS

Appendix 3.B: India's Investment Potential in TPP Countries: Target Market for Export is Japan

Sl. No.	**Product Code**	**Likely Investment Destination**	**Product Descriptions**	**Existing Investment Potential (USD Million)**
1	2	United States	Meat & edible meat offal	823.8
2	10	Australia	Cereals	600.1
3	10	Canada	Cereals	537.8
4	2	Canada	Meat & edible meat offal	442.5
5	2	Australia	Meat & edible meat offal	402.1
6	15	Canada	Animal or vegetable fats oils & their cleava	213.4
7	29	United States	Organic chemicals	186.5
8	4	United States	Dairy produce; birds' eggs; natural honey; edible	174.9
9	39	United States	Plastics and articles thereof	156.1
10	20	United States	Preparations of vegetables, fruit, nuts or other p	142.5
11	35	United States	Albuminoidal substances; modified starches; glue	141.2
12	21	United States	Miscellaneous edible preparations	119.8
13	7	United States	Edible vegetables and certain roots and tubers	118.1
14	18	Singapore	Cocoa and cocoa preparations	117.8
15	3	United States	Fish and crustaceans, molluscs and other aquatic	117.0
16	2	Mexico	Meat and edible meat offal	111.4
17	4	Australia	Dairy produce; birds' eggs; natural honey; edible	110.0
18	44	Malaysia	Wood and articles of wood; wood charcoal	109.3
19	8	United States	Edible fruit and nuts; peel of citrus fruit or mel	101.9
20	2	Chile	Meat and edible meat offal	96.2
21	17	Australia	Sugars and sugar confectionery	93.3
22	4	New Zealand	Dairy produce; birds' eggs; natural honey; edible	92.5
23	19	United States	Preparations of cereals, flour, starch or milk; pa	88.9
24	15	Australia	Animal or vegetable fats and oils and their cleava	87.7
25	3	Chile	Fish and crustaceans, molluscs and other aquatic i	85.7
26	64	Vietnam	Footwear, gaiters and the like; parts of such arti	82.5
27	19	Australia	Preparations of cereals, flour, starch or milk; pa	78.3
28	71	United States	Natural or cultured pearls, precious or semi-preci	70.0
29	1	Australia	Live animals	66.9
30	16	United States	Preparations of meat, of fish or of crustaceans, m	65.7

31	22	United States	Beverages, spirits and vinegar	59.7
32	19	Singapore	Preparations of cereals, flour, starch or milk; pa	56.0
33	4	Singapore	Dairy produce; birds' eggs; natural honey; edible	54.0
34	28	United States	Inorganic chemicals; organic or inorganic compound	52.8
35	41	United States	Raw hides and skins (other than furskins) & leat	52.0
36	17	United States	Sugars and sugar confectionery	49.8
37	38	United States	Miscellaneous chemical products	49.6
38	4	Canada	Dairy produce; birds' eggs; natural honey; edible	48.0
39	21	Singapore	Miscellaneous edible preparations	44.8
40	21	New Zealand	Miscellaneous edible preparations	42.6
41	15	United States	Animal or vegetable fats and oils and their cleava	42.2

Source: Estimated Using SMART simulation in WITS

Appendix 3.C.: India's Investment Potential in TPP Countries: Target Market for Export is Canada

Sl. No	Product Code	Likely Investment Destination	Product Description	Existing Investment Potential (USD Million)
1	87	Japan	Vehicles other than railway/tramway rolling stock	556.4
2	61	Vietnam	Articles of apparel and clothing accessories, knit	95.1
3	62	Vietnam	Articles of apparel and clothing accessories, not	83.0
4	64	Vietnam	Footwear, gaiters and the like; parts of such article	59.2
5	40	Japan	Rubber and articles thereof	42.8
6	04	New Zealand	Dairy produce; birds' eggs; natural honey; edible	25.2
7	89	Singapore	Ships, boats and floating structures	22.7
8	18	Mexico	Cocoa and cocoa preparations	19.8
9	94	Vietnam	Furniture; bedding, mattresses, mattress supports	16.9
10	35	New Zealand	Albuminoidal substances; modified starches; glues	16.3
11	40	Malaysia	Rubber and articles thereof	14.0
12	2	Australia	Meat and edible meat offal	12.5
13	85	Japan	Electrical machinery and equipment and parts there	10.6

Source: Estimated Using SMART simulation in WITS

Appendix 3.D: India's Investment Potential in TPP Countries: Target Market for Export is Australia

Sl. No	Product Code	Likely Investment Destination	Product Description	Existing Investment Potential (USD Million)
1	87	Mexico	Vehicles other than railway or tramway rolling stock	32.5
2	85	Mexico	Electrical machinery and equipment and parts there	23.53
3	84	Mexico	Nuclear reactors, boilers, machinery and mechanical	20.57
4	57	United States	Carpets and other textile floor coverings	9.34
5	62	United States	Articles of apparel and clothing accessories, not	5.86
6	62	Vietnam	Articles of apparel and clothing accessories, not	5.53
7	61	United States	Articles of apparel and clothing accessories, knit	5.17

Source: Estimated Using SMART simulation in WITS