

# What May the Philippines Get from Joining Trans-Pacific Partnership (TPP)?

RAMON L. CLARETE\*

## Abstract

The Trans-Pacific Partnership (TPP) agreement is the largest and dubbed as the gold standard of preferential trade agreements in the 21<sup>st</sup> century. Its twelve founding countries account for 40 percent of global GDP and 29 percent of world trade in 2012, and are among the most trade-open in the world today. Not among the twelve, the Philippines is likely to become better off economically, if it is among a second-wave of TPP member states, which includes Thailand, South Korea, Chinese Taipei, Columbia, and Indonesia. The author estimated that Philippine exports may expand by 42 percent and nominal GDP increase by 59 percent with TPP membership using a gravity model of trade involving 109 countries from 1948 to 2012, and a computable general equilibrium (CGE) model of the Philippine economy comprising 50 industries and 10 household groups.<sup>1</sup>

**Keywords:** preferential trade agreements, Trans Pacific Partnership, gravity model of trade, CGE model, Philippines

---

\* Email: [ramonclarete@econ.upd.edu.ph](mailto:ramonclarete@econ.upd.edu.ph)

# What May the Philippines Get from Joining TPP?

## Introduction

The Trans-Pacific Partnership (TPP) agreement is dubbed as the gold standard of free trade agreements in the world today. Twelve states in the Asia Pacific region signed the agreement on February 4, 2016. They are Brunei Darussalam, Chile, New Zealand, Singapore, Australia, Canada, Japan, Malaysia, Mexico, Peru, the United States, and Vietnam.<sup>2</sup> The stakes are potentially large. The combined gross domestic product (GDP) of TPP members reached US\$ 25.94 trillion in 2012, which is 40 percent of global GDP. The TPP region has a population of 724.7 million, with a GDP per capita of US\$35,793. Many other economies in the Asia Pacific have expressed their intentions of joining the agreement, and five are likely to accede after the agreement is launched. These are Chinese Taipei, Republic of Korea, Thailand, Indonesia, and Columbia.

This paper briefly describes the agreement and provides estimates of the economic benefits to the Philippines if the country joins the TPP. How well off would the Philippines be if it acceded to the TPP agreement? How much in added exports may the country expect to generate from membership? The gravity model of trade is used to produce an estimate.

With it, the analysis then proceeds to analyze how much the GDP of the country needs to expand in order to support the added export. An answer is obtained from a simulation conducted, using a computable general equilibrium (CGE) model of the Philippine economy. The applied general equilibrium simulation gives an estimate of how well off the Philippines would be if it were to become a TPP member.

## Overview of the TPP Agreement

As of this writing, the TPP members are still negotiating the agreement and have agreed not to speak on the matter, ostensibly to produce a pact that is free from the influence of vested interest groups and to raise the bar of preferential trade agreements (PTAs) in the world. Until its members come out and tell the world what they have agreed upon, what is so far known about the TPP comes from official pronouncements such as the TPP Leader's Statement released in Honolulu, Hawaii on November 12, 2011.

The TPP is a "comprehensive, next-generation" preferential trade and investment agreement that responds to the key challenges of the 21st century. It has five key features of policy reforms. First, it removes tariff and non-tariff trade barriers in "all areas." The Office of the US Trade Representative (USTR) reports that TPP will cover about 11,000 tariff lines, all services sectors, and all investment opportunities.<sup>3</sup> The negotiating members agree that unless an exception is declared, all services and investment areas will be liberalized. Market opportunities in every other member's public procurements are expanded.

Secondly, TPP is a regional agreement that liberalizes and facilitates trade and investment flows in its members' economies to support the development of global value chains among its members. Through value chains, the TPP agreement promotes a cooperative rather than a competitive approach to expanding regional trade. While competition in homogeneous products remains a feature, wherein a member's products may be substituted with more affordable products from other members, trade in slightly differentiated items and participation in value chains that will form are expected to cushion the adverse effects on

job losses due to trade liberalization in goods and services. Participation in value chains is assured by the reforms envisioned by the agreement. This meets the TPP's higher-level objective of a higher, sustainable, broad-based, and inclusive growth.

Third, it incorporates four cross-cutting trade issues, namely: (a) regulatory coherence in support of a more seamless and efficient trade among its members; (b) competitiveness and business facilitation to ensure that members are more ready to participate in regional value chains—this will enable members to improve their respective domestic value chains to make them more competitive; (c) encouragement of small and medium enterprises to participate in the expanded regional trade; and (d) promotion of overall institutional development. The trade and investment commitments and disciplines of the agreement are important for improving the quality of governance and for advancing overall development. Interestingly, members recognize that trade capacity building activities are needed to help developing country members comply with the agreement. This assistance is needed even during the negotiation process.

Fourth, TPP responds to challenges of how to promote trade and investments in new innovative products arising from the introduction of new technologies.

Lastly, it is a living agreement. Members expect that the agreement will have to evolve in response to unforeseen shocks such as those due to the introduction of new technologies or to emerging issues such as those associated with climate change. Members welcome the prospect of including other economies in the Asia-Pacific region.

The South Korea-US (KORUS) free trade agreement (FTA) may be closest to what the TPP may look like.<sup>4</sup> This places the TPP as both a World Trade Organization (WTO)+ and WTO-X free trade agreement, categories of PTAs that the WTO used when it studied the content of 100 recent PTAs.<sup>5</sup> The WTO+ PTAs deepen existing WTO integration measures, but essentially stay within the framework of the multilateral trade agreement. These accords included provisions for deeper liberalization and facilitation in the areas of technical barriers to trade, services, intellectual property and trade-related investment measures in addition to the traditional content of liberalizing and facilitating trade in goods. The KORUS FTA contains provisions for agricultural and industrial tariffs, customs administration, trade facilitation, trade remedies, SPS measures, trade-related intellectual property rights, public procurement, dispute settlement, and services trade.

Like all PTAs, KORUS FTA is WTO+. To cite a few of its provisions, the agreement calls for the elimination of virtually all tariffs and non-tariff barriers by 2021. The liberalization of trade in services goes beyond both countries' respective commitments under GATS. In agricultural tariff rate quotas, provisions are introduced to ensure fuller use of existing quotas. All PTAs are WTO+. They differ from each other in the depth of the liberalization and facilitation of trade that they require of its members.

About a third of the PTAs, including KORUS FTA, go beyond the multilateral trade agreements. Their members agree to include non-WTO reform measures in their integration measures. Horn, Mavroidis and Sapir (2010) listed 38 areas covered by WTO-X PTAs.<sup>6</sup>

The TPP is expected to contain provisions beyond WTO policy reforms such as institutionalizing pro-competition policies, investment disciplines and investor protection,

## What May the Philippines Get from Joining TPP?

and labor and environmental standards. Table A.1 in the appendix illustrates 20 policy issues that have been negotiated since 2011. Some of these issues affirm the disciplines in the WTO, but in more than half, the members take up disciplines not currently under any of the multilateral trade agreements, such as on competition policy.

### Effects on Trade Performance of TPP

#### Gravity Model of Trade and Data

The gravity model of trade is estimated and used to simulate the added trade of a country due to TPP membership. The model<sup>7</sup> has been used for at least three decades to explain bilateral trade flows. Newtonian physics, which explains the gravitational pull between two objects as directly proportional to their respective mass, inspired its design and application in international trade. In trade, the model claims that bilateral trade flows are directly proportional to the sheer size of the trading partners' economic mass, a claim that is usually empirically validated. The gravity equation is shown in figure 1.

The dataset that was used in estimating the model was assembled from various sources. Bilateral trade between two trading partners is measured as the total exports of a country to another. The IMF's Direction of Trade Statistics (DOTS) carries the data from 1948 to 2006 for 209 trading countries in the world. It is available from the *Centre d'Études Prospectives et d'Informations Internationales*.<sup>8</sup> The data was extended to 2012.<sup>9</sup>

The data of the respective nominal GDPs and population of the 209 countries were obtained from the World Development Indicators (WDI), except those of Chinese Taipei, which were obtained from the Taiwan National Statistics database. Bilateral distance and indicators for common official language, common border data, and landlocked and island features of trading partners were obtained from the GeoDist dataset. Like the DOTS, most of the data is also available in the CEPII database.

Three TPP indicator variables were added. The first is used to indicate if there is net positive intra-regional trade created. The variable takes on the value of "1" if both the exporter and importer countries belong to TPP. Its coefficient, if positive, indicates that the trade bloc creates more trade for its members. The second and third variables indicate extra-bloc trade flows. The second variable is "1" if the exporter is a member of TPP and the importing country is not. It represents a flow of trade from the region to the rest of the world. The third variable is "1" if the exporter is a non-member and the importing country is a TPP member. Its coefficient signals the flow of trade from the rest of the world into the bloc. Positive values for the coefficients of the three indicator variables would show that the trade grouping generated new trade for all, although their relative magnitudes indicate whether there is more intra-TPP trade created relative to extra-TPP trade.<sup>10</sup>

$$X_{ij,t} = \alpha_0 GDP_{i,t}^{\alpha_1} GDP_{j,t}^{\alpha_2} \alpha_0 POP_{i,t}^{\alpha_3} POP_{j,t}^{\alpha_4} D_{ij}^{\alpha_5} e^{\beta_1 LNG_{ij} + \beta_2 B_{ij} + \beta_3 I_i + \beta_4 L_i + \beta_5 I_j + \beta_6 L_j + \beta_7 T_t + \tau_1 TPP_{ij} + \tau_2 TPP_i + \tau_3 TPP_j}$$

where,

$X_{ij,t}$  = Exports from economy  $i$  to economy  $j$  in year  $t$

$GDP_{i,t}$  = GDP of economy  $i$  in year  $t$

$GDP_{j,t}$  = GDP of economy  $j$  in year  $t$

$POP_{i,t}$  = Population of economy  $i$  in year  $t$

$POP_{j,t}$  = Population of economy  $j$  in year  $t$

$D_{ij}$  = Distance between economy  $i$  and economy  $j$

$LNG_{ij}$  = 1 if both speak the same language; 0 if otherwise

$B_{ij}$  = 1 if both share borders; 0 if otherwise

$I_i$  = 1 if economy  $i$  is an island; 0 if otherwise

$L_i$  = 1 if economy  $i$  is landlocked; 0 if otherwise

$I_j$  = 1 if economy  $j$  is an island; 0 if otherwise

$L_j$  = 1 if economy  $j$  is landlocked; 0 if otherwise

$T_t$  = time trend

$TPP_{ij}$  = 1 if both are TPP members; 0 if otherwise

$TPP_i$  = 1 if economy  $i$  is in TPP ; 0 if otherwise

$TPP_j$  = 1 if economy  $j$  is in TPP ; 0 if otherwise

---

Figure 1. The gravity model of trade

---

### Estimated Model Coefficients

Table 1 shows the estimated coefficients of the gravity model,<sup>11</sup> in two versions, one for the current members (TPP 12), and the other for these and the possible five new members, which are likely to be accepted in 2016 (TPP 17). The signs of the coefficients of the standard explanatory variables of trade flows are all statistically significant and bear the expected sign.

The estimates of the coefficients of the GDP and population variables, as well as of the indicators for common language, shared borders, and island features, have positive signs. On the other hand, the variables of distance and being a landlocked country have expectably negative coefficients.

In both versions of the model, all TPP variables have statistically significant positive coefficients. These results suggest that the TPP bloc creates trade not only for its members but also for the rest of the world. Even the coefficients of the TPP variable called *origin only* and those of the other destination only have positive signs in both models, which indicates

## What May the Philippines Get from Joining TPP?

that there is added export flow coming out of TPP to the rest of the world, and more imports going into the trade bloc from the rest of the world. There is nothing in the results that have indicated that trade is diverted into the trade bloc at the expense of non-members.

**Table 1. Estimated gravity model<sup>12</sup>**

	TPP 12		TPP 17	
	Coefficient	z-value	Coefficient	z-value
Natural log of GDP, origin	0.715	129.62	0.725	128.54
Natural log of GDP, destination	0.726	142.13	0.734	138.8
Natural log of population, origin	0.052	5.59	0.037	3.96
Natural log of population, destination	0.066	6.62	0.053	5.11
Natural log of bilateral distance	-0.809	-101.19	-0.797	-333.86
Landlocked dummy, origin	-0.382	-17.5	-0.366	-16.5
Landlocked dummy, destination	-0.318	-15.8	-0.304	-143.94
Island dummy, origin	0.12	6.9	0.068	3.94
Island dummy, destination	0.063	4.18	0.01	0.61
Common border dummy	0.429	20.32	0.433	20.08
Common official language dummy	0.421	22.08	0.441	23.23
TPP dummy, both origin & destination	0.289	8.16	0.355	10.38
TPP dummy, origin	0.293	11.48	0.274	10.61
TPP dummy, destination	0.234	9.85	0.213	8.22
Time Trend	-0.015	-27.41	-0.161	-28.34
Constant	-4.353	-40.77	-4.552	-40.23
Pseudo R-squared	0.891		0.894	
Obs.	1,106,354		1,106,354	

Source: Author

### Effect on Export Performance

Because the TPP agreement has yet to enter into force and thus the data does not reflect any preferential trade liberalization due to TPP, these results may be interpreted as the effects on trade flows of these countries' policies relative to the rest of the world. It may be inferred from the results that TPP members have more relatively open trade policies and relatively higher capacity to trade compared with the rest of the world. Thus, even without preferential trade liberalization, one may observe that if a non-member takes on the policies and disciplines that support a deeper integration of their economies to the trade bloc and the rest of the world, that country may expect to improve its trade performance.

The potential boost of TPP membership to Philippine exports is shown in table 2. If the Philippines were a TPP member and it was exporting to the world regardless of TPP membership, its exports would expand by 33.99 percent. If it imported from the rest of the world, its imports would increase by 26.34 percent. In either case, TPP membership would have brought about an increase rather than a decrease in trade flows.

**Table 2. Potential Increase of Philippine Exports Due to TPP Membership (in %)<sup>12</sup>**

	Origin Only	Destination Only	Origin and Destination
TPP 12	33.99	26.34	33.5
Possible New Members			
Colombia	30.03	22.83	33.98
Indonesia	31.78	23.5	39.18
Korea, Rep.	41.03	32.28	20.41
Chinese Taipei	32.82	25.71	39.67
Thailand	34.53	27.55	39.15
TPP 17	31.56	23.77	42.67

Source: Authors' computation from coefficient estimates of the TPP dummy variables in table 1.

If the Philippines traded with only the 12 TPP founding members, the estimated increase of its exports would be 33.5 percent. Although positive, the coefficient hardly differs from the increase of its exports, 33.99 percent, if the country as a TPP member exported to the rest of the world. The similarity of size may reflect the direction of its current export flows, i.e. going mostly to the TPP bloc members, e.g. United States and Japan.

However if the likely second wave of five TPP members is considered, TPP membership would accord the Philippines a significantly higher increase of its exports, 42.67 percent, compared to 31.56 percent if it exported to the world regardless of TPP membership. This may be explained by the observation that the five TPP countries would be potentially new and potentially significant markets of its exports. The Philippines would have higher increases in exports to each of the five economies, except for the Republic of Korea, compared to if the country exported to the founding TPP 12, 33.5 percent, i.e. the TPP would not have expanded. There is bound to be significant pressure on the Philippines to join the trade bloc from a future expansion of TPP.

The percentage increase of Philippine exports associated with its possible TPP membership of 43 percent is significant, and questions have been raised as to how realistic the estimate is, and when and how it may be attained by the country. As pointed out above, this increase may be interpreted as being what the Philippines may obtain if it were to become more competitive and integrated with the rest of the world as the TPP members are. How different then is the performance of the Philippines relative to other TPP members? The difference appears substantial, and this is shown in table 3 with some trade-related information.

In the last three rows of table 3, the average GDP per capita of TPP members was at least six times that of the Philippines in 2012 for the 16 TPP members,<sup>14</sup> and about eight times that if only the 12 founding TPP members are considered. Trade openness measured by trade as a percentage of GDP was 65 percent in 2002 for the Philippines, compared to about 100 percent for TPP members on average.

Becoming a TPP member may result in the Philippines becoming more open to trade by bringing down restrictions to imports and exports, and to foreign direct investments. Although the average applied tariff appears low for the Philippines in 2002 at 4.77 percent,

## What May the Philippines Get from Joining TPP?

**Table 3. Comparative Performance of Philippines and TPP members in selected Trade-related Concerns, 2012<sup>15</sup>**

	GDP per capita (US\$)	Trade as % of GDP	Average applied tariff (%)	Days to export	Days to import	GFCF/ GDP (%)
Australia	43,818	42	1.81	9	8	27.64
Brunei Darussalam	52,482	113	4.12	19	15	13.36
Canada	41,298	63	0.83	8	10	22.82
Chile	21,468	68	4.02	15	12	24.14
Columbia	10,436	38	4.41	14	13	23.45
Indonesia	4,876	50	2.59	17	23	33.87
Japan	35,618	31	1.22	11	11	21.17
Korea	30,011	110	8.71	8	7	26.71
Malaysia	16,919	162	3.95	11	8	25.68
Mexico	16,426	67	2.19	12	12	22.59
New Zealand	32,926	58	1.62	10	9	18.83
Peru	10,765	49	1.51	12	17	27.91
Singapore	60,800	379	0.07	6	4	24.13
Thailand	9,660	149	4.92	14	13	28.53
United States	51,749	30	1.54	6	5	18.64
Vietnam	3,787	157	5.66	21	21	24.20
TPP 12	32,338	102	2.38	11.67	11.00	22.59
TPP 16	27,690	98	3.07	12.06	11.75	23.98
Philippines	4,339	65	4.77	15.00	14.00	19.38

Source of Data: World Development Indicators (WDI); For days to export, import, World Bank's Doing Business data.

this rate still exceeds the average TPP applied tariff rate, 2.38 percent and 3.07 percent. Interestingly, the difference between the country and average TPP trade costs is noteworthy, which suggests that trade facilitation reforms and reductions in the cost of doing business in the export and import supply industries have potentially large contributions to making the country nearly as competitive as the TPP members. The number of days to export and import exceeds those of the TPP members by at least three days.

The entry of investments can trigger complementary investments by medium and small enterprises, in doing business with the larger multi-national investors. That will increase the capital formation rate of the country, which in 2002 was estimated at 19 percent when TPP members on average had at least 22.6 percent.

Closing the above policy gaps (and other related reforms) is how the Philippines may increase its competitiveness and trade performance. The simulated 43 percent increase in exports (TPP 17 in table 2) is not an annual rate. How long may the Philippines be able to attain this? It all depends upon how fast the country can take on the disciplines and trade capacity that are comparable to those of an average TPP member. The benefit of TPP



membership is that it moves the country to take on the policy reforms that need to happen to increase its international competitiveness.

### **Output, Trade, and Income Effects**

How the 43 percent expansion of exports, which was inferred from the estimated gravity model, may affect the Philippine economy was simulated using an applied computable general equilibrium (CGE) model. The model comprises 50 sectors of the economy. Twelve of these belong to agriculture, fisheries and forestry; 24 are industrial sectors, and the remaining 14 are services sectors. There are four primary factors: skilled and unskilled labor, capital, and land. The model has 10 household groups, distinguished on the basis of their income levels.

The CGE model used in this study takes after that of Rutherford (1999), and Rutherford and Paltsev (1999). A more detailed description of the Philippine CGE model is in Clarete, Tũaño and Muyorong (forthcoming 2017). The social accounting matrix used to numerically specify the model is for 2009. The values are annual, and the expected changes to values of the endogenous variables are on a per year basis.

The following equilibrium conditions apply. The first requires total spending by all agents to equal exactly the aggregate income, i.e. the model is Walrasian. In all production activities in the model, and there are several including the production of local products, Armington goods, export goods, imported goods, and the aggregate final consumptions of agents, the revenues generated from each activity exactly defray for the production costs, i.e. profit conditions are all zero. A third type of equilibrium conditions of the model is for markets of goods and factors (except tradable products) to clear, i.e. excess demands are zero. Lastly, balance of payments conditions apply.

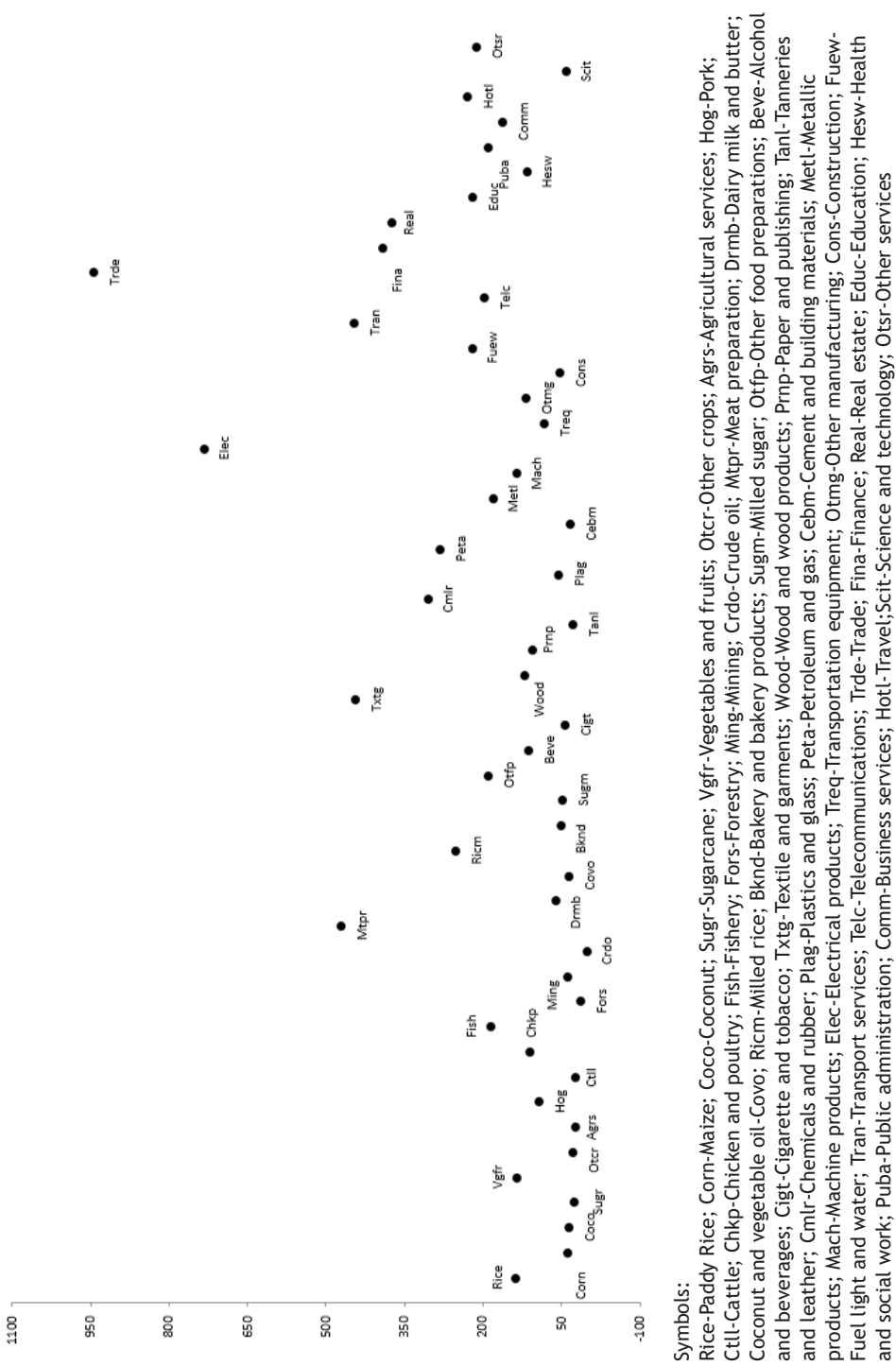
One other condition is added to the above, i.e. the amount of exports generated by the model is equal to the exogenous exports that TPP may generate for the Philippines. The quantity was estimated using the gravity of trade model above. The increase in overall exports is introduced as an exogenous economic shock to the model's equilibrium.<sup>16</sup> A counterfactual general equilibrium is solved that is consistent with the increase in exports, computing the increase in primary factors supply that can support the added levels of the country's total exports. The computation of added factors is done in a way that all factors increase proportionately at the same rate.

Selected economic variables, production, exports, and imports of each of the 50 sectors of the model, as well as the income changes of each of the 10 household groups and the overall well-being of the country, are compared with their respective baseline levels before the expansion of overall exports is introduced into the model.

### **Output Gains**

Production increased in all sectors as overall exports increased by 40 percent each year. The expansion stems from the 51.7 percent increase in primary factor supplies in order to support the added exports. Figure 2 shows the output gains in billions of pesos by sector.

## What May the Philippines Get from Joining TPP?



**Figure 2. Possible Output Gains from TPP Membership**

Trade and electrical component industries lead the rest of the economy in output expansion. The former's services are required to export the country's products. The second highest, which is electrical products, reflect their ranking in the current overall exports of the country. Meat preparations, garments, transportation services, financial services and real estate services enjoy substantial gains in production. The majority of the economic sectors, however, gain no more than about PHP 300 billion.

Most of the sectors with larger output gains are in non-agriculture. In figure 2, the plots of the primary industries are on the bottom left side. A slightly rising trend of the plots may be observed, indicating that primary industries tend to gain relatively less than services and industry. The simple average output gain of agriculture, fisheries, forestry and mining is PHP 62.25 billion. The gains of industry are nearly three times more, PHP 175.36 billion. Services industries have the highest average output gain, PHP 289.82 billion.

In terms of the rate of expansion, services industries are ahead of agriculture and industry. On average, the expansion rate is 64.22 percent. Agriculture and the other primary industries follow with an average growth rate of about 60.28 percent. Industrial output increases at an average rate of 56.29 percent. The nominal GDP is expanded at a rate of 59 percent.

## Trade Effects

Table 4 portrays the proportionate expansions of the country's exports and imports from TPP membership by economic sector. All sectors tend to increase their respective exports and imports. This simulation analysis is undertaken to show how the 42 percent increase in exports due to TPP membership from the gravity model of trade may be distributed across the various sectors of the economy. Imports would have to expand as well in order to attain a balance of payments, which is one of the model's equilibrium conditions, considering that this exercise is done while holding the net financial and capital flows from the rest of the world constant.

How this is distributed reflects the current structure of economic activities and sectoral dependencies on the country's trade. All three broad groups of economic sectors end up having positive net imports. The country enjoys a substantial inflow of remittances each year that can finance the trade deficit. Thus, distributing these aggregate flows by sectors captures the same structural features of the economy. Of the total expansion of exports and imports, agriculture and the extractive industries tend to export the additional PHP 28.79 billion, and import the additional PHP 226.32 billion. This group has a current account deficit of about PHP 197.53 billion, which is smaller compared to industry.

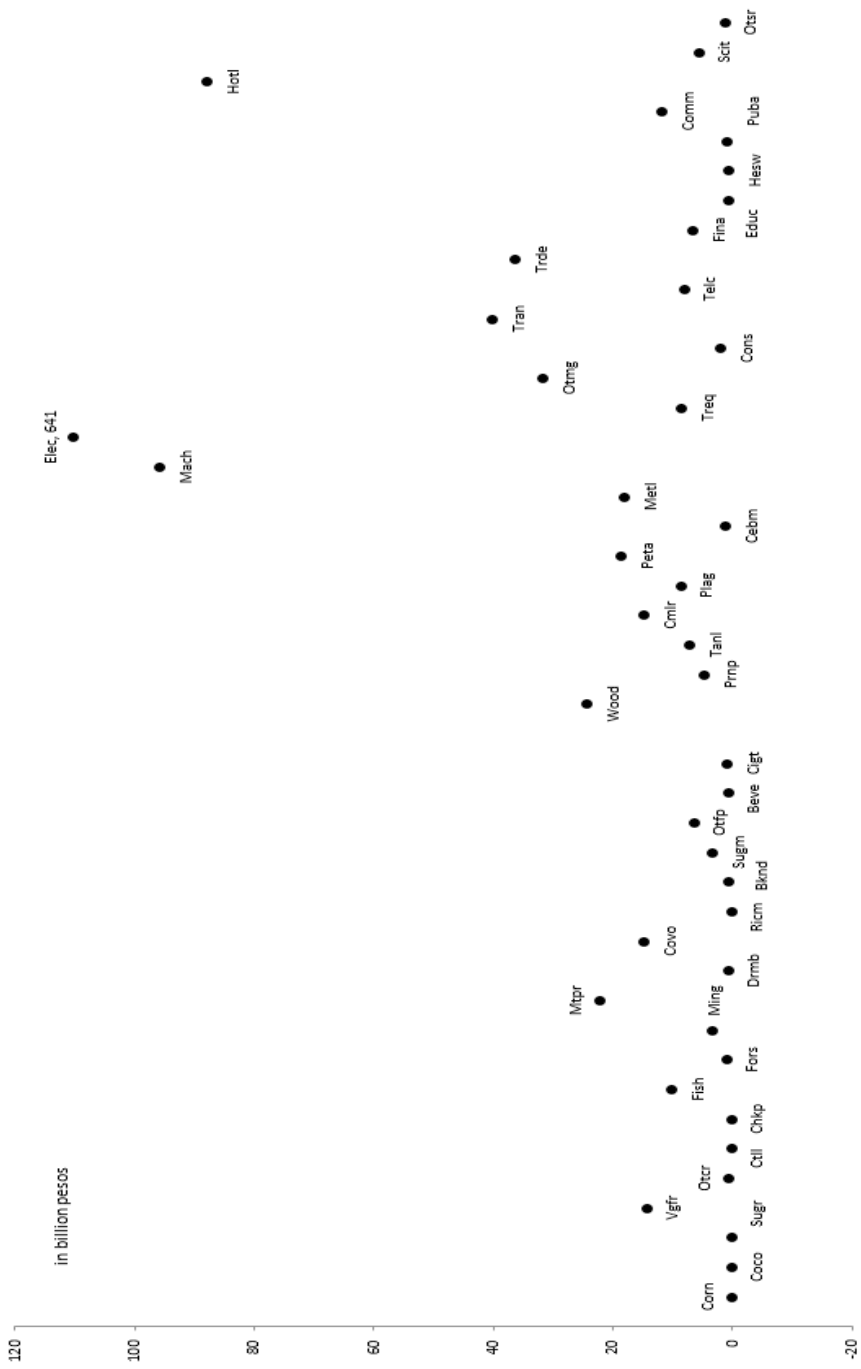
Industry, which includes manufacturing and agricultural and food processing, has a much larger current account deficit. Of the added trade, the group would be exporting PHP 403.02 billion, and importing PHP 749.36 billion. The additional current account deficit of this group is PHP 346.33 billion. It is the services group that has the lowest added deficit at PHP 95.86 billion. This group of service industries was simulated to export the additional PHP 199.99 billion, and to import PHP 295.85 billion. The entire economy would be importing PHP 1,271.14 billion and exporting PHP 631.81 billion. All these numbers are simulated added trade.

## What May the Philippines Get from Joining TPP?

Figures 3 and 4 show the sectoral distribution of the added exports and imports, respectively. In figure 3, electrical products dominate the country's exports. Its gain accounts for half of the total added exports, and is more than five times the second top export, which is textile and garments. Machinery and travel services make up the two next large export

**Table 4. Increase Rates of Exports and Imports From TPP Membership<sup>17</sup>**

Economic Sectors	Exports	Imports	Economic Sectors	Exports	Imports
<b>Agriculture/Primary Industries</b>	58.15	62.09	Wood and wood products	59.33	64.10
Maize	64.65	69.51	Paper and publishing	56.18	56.22
Coconut	61.73		Tanneries and leather	61.63	59.91
Sugarcane	68.34		Chemicals and rubber	60.72	62.24
Vegetables and fruits	61.78	70.25	Plastics and glass	57.59	57.83
Other crops	45.21	55.17	Petroleum and gas	65.61	65.26
Agricultural services		61.76	Cement and building materials	35.32	35.87
Pork		56.75	Metallic products	38.81	39.84
Cattle	47.14	51.13	Machine products	18.57	19.62
Chicken and poultry	65.23	67.14	Electrical products	54.48	35.24
Fishery	64.21	67.84	Transportation equipment	22.00	21.83
Forestry	62.01	69.08	Other manufacturing	43.89	44.44
Mining	41.17	47.52			
Crude oil		66.85	<b>Services</b>	63.36	62.82
			Construction	17.38	17.03
<b>Industrial Sectors</b>	55.75	54.73	Transport services	69.54	73.74
Meat preparation	65.36	68.47	Telecommunications	74.51	68.00
Dairy milk and butter	68.92	69.62	Trade	66.62	
Coconut and vegetable oil	62.85		Finance	76.64	79.06
Milled rice	67.46	71.13	Education	60.95	56.77
Bakery and bakery products	67.39	69.06	Health and social work	67.43	65.76
Milled sugar	69.72	73.87	Public administration	36.53	33.99
Other food preparations	62.71	65.36	Business services	65.65	64.51
Alcohol and beverages	67.64	67.55	Travel	71.95	72.86
Cigarette and tobacco	59.93	59.88	Science and technology	70.98	69.69
Textile and garments	67.65	67.94	Other services	82.20	82.99



See figure 2 for the symbols used. Note that change in electronics exports is not in scale.

Figure 3. Export Gains of the Philippines from TPP Membership

# What May the Philippines Get from Joining TPP?

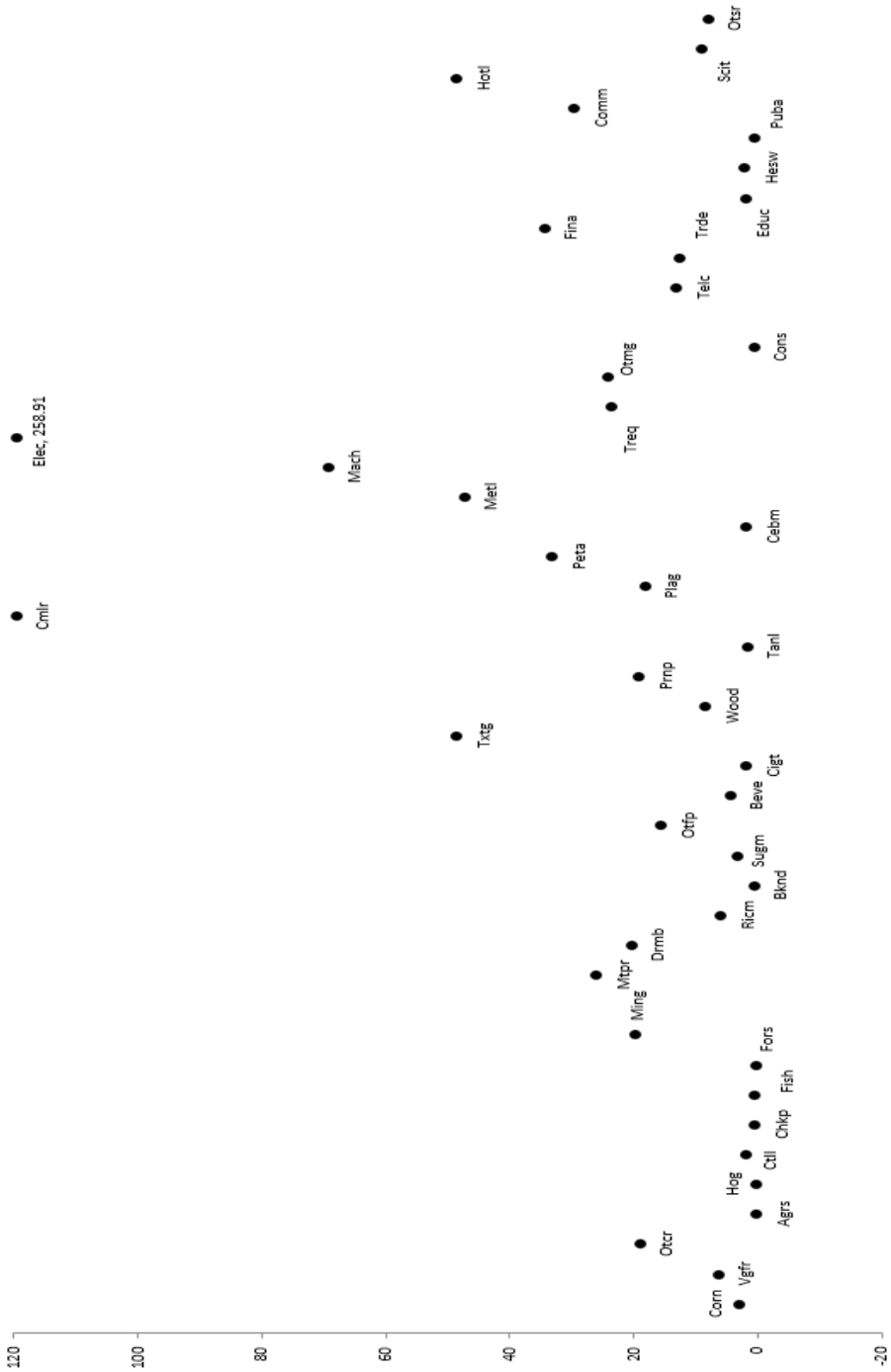


Figure 4. Additional Imports of the Philippines from TPP Membership

performers. The rest of the sectors cluster in the range from about PHP 40 billion to PHP 20 million.

Imports of electrical products, as well, top the list of importers, garnering about a fifth of the total additional imports. These imports are intermediate inputs into the production of electrical products destined for exports, part of an inter-country value chain. The second top importer is the chemicals and rubber sector, with its imports being about half that of electrical industries. Machinery imports come next. The rest of the industries have imports at a level between PHP 50 billion to nearly PHP 50 million.

### **How Well Off are Consumers?**

Figure 5 illustrates how the 10 household income groups are affected. The improvement of the economic well-being of households is computed as the change in real consumption of each household. In the figure, the equivalent variation of income measures the amount of money that each group needs to have in order for its members to be as well off as when the economy's exports expanded by about 40 percent due to TPP membership. The respective amounts of money in the figure are all positive. The poorest household garners about PHP 92.07 billion, while the richest income decile (H10) enjoys PHP 1,982.4 billion, representing about 16 of the total real income gain of the country (see inset chart in figure 5).

On the whole, all consumers are better off. The total gain is PHP 4,371 billion. The average household gain is PHP 427 billion, representing a percentage increase of about 65 percent from the average baseline real income. This indicates that if the Philippines becomes part of TPP, and it takes on the characteristics of an average TPP member, then the country is expected to improve its overall well-being. While substantial, distribution is regressive. Most of the benefit accrues to the richest income decile, about 45 percent. Considering that it has the highest real income, the way the gain is distributed will make the income distribution even more unequal.

### **Concluding Remarks**

The purpose of this policy brief is to assess what the potential trade and economic effects would be if the Philippines were a member of the TPP. This trade agreement is dubbed to be the largest and most advanced preferential trade agreement in the world today. The Philippines is not currently in this group, and the results of the analysis are presented here hopefully to contribute to the policy discussions on TPP in the Philippines.

It is worth pointing out the difference between this analysis and the one conducted by Petri et al. (2011). Using an 18-sector, 24-region computable general equilibrium (CGE) model of the world economy, which simulated the trade agreement effects by adjusting trade liberalization parameters, Petri et al. (2011) found that between 2010 and 2025, world trade, measured in exports, was simulated to increase by 88 percent. Along the Trans-Pacific track, trade grows by 49 percent, and along both tracks, trade grows by 44 percent. The CGE model used in Petri et al. (2011) was extended in Petri and Plummer (2012) to include foreign

## What May the Philippines Get from Joining TPP?

direct investment effects and trade liberalization effects on the extensive margin of trade (exports by companies not involved in international markets before liberalization).

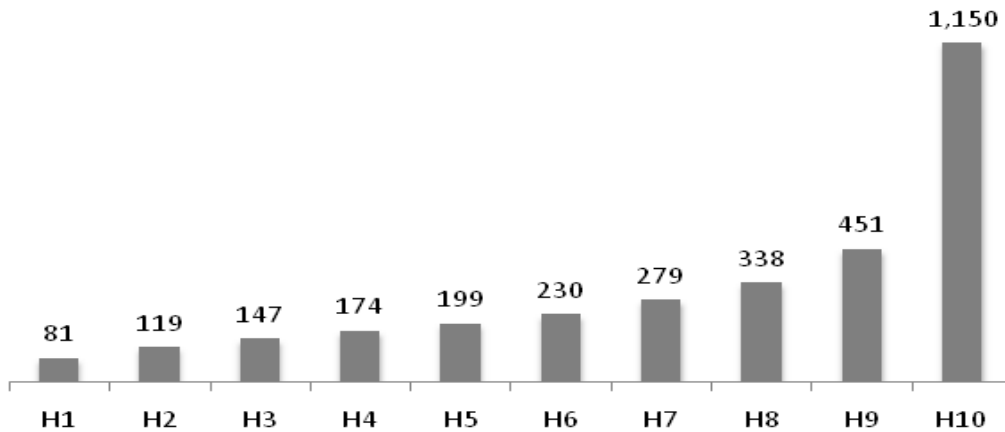


Figure 5. Impact on Household Welfare<sup>18</sup> (in billion pesos)

The gravity model analysis has indicated that the Philippines could have a 43 percent gain in exports if it were a TPP member, exporting and importing from other TPP members. This does not come at the expense of the reduced trade of the country with non-TPP members. Given that the TPP is still being negotiated, an interpretation of this result is that if the Philippines were as open to trade and investments as the 12 founding members of the TPP or the five countries, which are likely to accede to TPP, then the export and import performance of the country would be about 40 percent higher.

This increase in exports is inputted into the CGE model of the Philippines in order to evaluate how the added exports are distributed and what this means to the country's production and import activities, as well as to the its gross domestic product. The country's nominal GDP expands by 59 percent. The well-being of household consumers on average increases by about 54 percent, indicating that the country is better off if it joins this partnership.

Although a CGE model was used in this study, there is an important difference between this analysis and that of Petri et al. (2012) or Cororaton (2014). In these studies, the authors simulated the preferential trade and investment liberalization that TPP members are expected to agree on and implement. Noting that the TPP negotiations are still ongoing, this paper has instead used the gravity model analysis to estimate how the Philippines could expand its exports if it were a TPP member. If the country assumes more of the disciplines and characteristics of TPP members, then its competitiveness improves and its exports expand. When the time comes for the TPP agreement to become legally enabled, it is even more compelling that the country seriously consider the cost of being left out of the preferential integration that unfolds in the world's richest and largest markets.



**Notes**

1. With support from the USAID TRADE project in the Philippines, this research was completed and presented in the Ayala-UPSE Lecture Series in October 2014, about a year before the end of the TPP trade negotiations in October 2015. The TPP deal was signed on February 4, 2016 in New Zealand. Japan and virtually New Zealand had ratified the treaty in November 2016, and the rest are waiting for the US to do the same. However, US President-elect Donald Trump said in a video message in the week of November 22, 2016 that he would pull the United States out of the Trans-Pacific Partnership trade agreement on his first day in office. The TPP needs at least six countries to ratify it before it enters into force, two of them being the US and Japan. There are policy makers in the US that remain hopeful that the President-elect may reconsider his decision on TPP. However, others are resigned to regarding the TPP as dead. It is today's reincarnation of the International Trade Organization charter in 1948, which the US Congress decided not to ratify in favor of the GATT.
2. Four of these launched the TPP in 2006, namely Brunei Darussalam, Chile, New Zealand and Singapore. It was then called the Trans-Pacific Strategic Economic Partnership Agreement. When the United States joined the agreement in 2008, the members decided to negotiate a more comprehensive and high standards trade agreement. The remaining 7 states were admitted to participate in the negotiations between 2009 and 2013.
3. Office of the United States Trade Representative (2010) "Outlines of the Trans-Pacific Partnership Agreement". In <http://www.ustr.gov/about-us/press-office/fact-sheets/2011/november/outlines-trans-pacific-partnership-agreement>.
4. This was disclosed by a USTR official, who is in the TPP negotiating team of the US. The final text of KORUS is in (Office of the United States Trade Representative) (2010). KORUS (Korea-US) Free Trade Agreement. Final Text. In <https://ustr.gov/trade-agreements/free-trade-agreements/korus-fta/final-text>. The agreement was signed on June 30, 2007.
5. WTO (World Trade Organization). *World Trade Report 2011. The WTO and preferential trade agreements: From co-existence to coherence*. Geneva: WTO. 2011.
6. Among the controversial provisions of TPP, two stand out. One is on intellectual property rights (Chapter 18), which is a WTO+, while the other is the Investor State Dispute Settlement (ISDS), which is a WTO-X.
7. Those responsible for developing the Theory of Gravity Model of Trade include Anderson (1979), Deardorff (1984), and Helpman and Krugman (1985).
8. The data of most of the explanatory variables is in the CEPPII database (Head et al., 2010).
9. The study expanded the IMF's Direction of Trade Statistics (DOTS) database to 2012 from 2006 following the approach used by Head et al (2008).
10. The use of these trade bloc indicator variables follows the approach introduced by Aitken (1973), Braga, Safadi, and Yeats (1994), Bayoumi and Eichengreen (1995) and Frankel (1997).
11. The estimation methodology is Poisson Maximum Likelihood Estimator.
12. Source: Author.
13. Source: Author's computation from coefficient estimates of the TPP dummy variables in table 1.
14. The World Development Indicators dataset does not include data for Chinese Taipei, and thus only 16 TPP members are considered in table 3.
15. Source of Data: World Development Indicators (WDI); for days to export, import, World Bank's Doing Business data.

## What May the Philippines Get from Joining TPP?

16. In the simulation, only 40 percent, not 42 percent, of exports was introduced. In the text however we continue to use 42 percent.
17. Source: Author's computation
18. Author.

### References

- Aitken, Norman. "The Effect of the EEC and EFTA on European Trade: A Temporal Cross-section Analysis." *American Economic Review*, 63 (1973): 881-892.
- Anderson, James A. "A Theoretical Foundation for the Gravity Equation." *American Economic Review*, 69 (1979): 106-116.
- Braga, Primo, Raed Sadafi, and Alexander Yeats. "Regional integration in the Americas: Déjà vu all over again?" *World Economy*, 17 (1994): 577-601.
- Bayoumi, Tamim, and Barry Eichengreen. "Is Regionalism Simply a Diversion? Evidence from the Evolution of the EC and EFTA." IMF Working Paper 109. Washington, D.C. 1995.
- Clarete, Ramon, Philip Tũaño, and Marjorie Muyrong. "Extreme Flooding in Metro Manila Cities: Its Impact on Local Economies Using A Multi-week CGE Analysis. *Philippine Journal of Development (forthcoming)*. Philippine Institute for Development Studies.
- Cororaton, Caesar. "Potential Economic Effects on the Philippines of the Trans-Pacific Partnership (TPP)." Presented at the Policy Forum on TPP at the Philippine Institute of Development Studies, NEDA sa Makati. September 4, 2014.
- Deardorff, Alan. "Testing Trade Theories and Predicting Trade Flows." In *Handbook of International Economics 1*, edited by Ronald W. Jones and Peter B. Kenen. Amsterdam: Elsevier Science Publishers. 1984.
- Frankel, Jeffrey. *Regional Trading Blocs in the World Economic System*. Washington, D.C.: Institute for International Economics. 1997.
- Head, Keith, Thierry Mayer, and John Ries. "The Erosion of Colonial Trade Linkages after Independence." *CEPII Working Paper, No. 2008-27*. CEPII. 2008.
- "The Erosion of Colonial Trade Linkages after Independence." *Journal of International Economics*, 81(1)(2010): 1-14.
- Helpman, Elhanan, and Paul Krugman. *Market Structure and Foreign Trade*. Cambridge, Mass.; London: MIT Press. 1985.
- Horn, Henrik, Petros Mavroidis, and André Sapir. "Beyond the WTO? An anatomy of EU and US preferential trade agreements." *The World Economy*, 33(11)(2010): 1565-1588.
- International Monetary Fund. *Direction of Trade Statistics*. USA: IMF Publications Services. 2001.
- Office of the United States Trade Representative. "Outlines of the Trans-Pacific Partnership Agreement". In <http://www.ustr.gov/about-us/press-office/fact-sheets/2011/november/outlines-trans-pacific-partnership-agreement>. 2010.
- Petri, Peter A., Michael G. Plummer, and Fan Zhai. "The Trans-Pacific Partnership and Asia-Pacific Integration: A Quantitative Assessment." *East-West Center Working Paper No. 119*. East-West Center. 2011.
- Petri, Peter A., and Michael G. Plummer. "The Trans-Pacific Partnership and Asia-Pacific Integration: Policy Implications." *Policy Brief No. PB12-16*. Peterson Institute for International Economics. 2012.

- Rutherford, Thomas F. "Applied General Equilibrium Modeling with MPSGE as a GAMS Subsystem: An Overview of the Modeling Framework and Syntax," *Computational Economics*, 14 (1-2) (1999): 1-46.
- Rutherford, Thomas F. and Sergey Paltsev. "From an Input-Output Table to a General Equilibrium Model: Assessing the Excess Burden of Indirect Taxes in Russia." Department of Economics, University of Colorado. 1999.
- Silva, J.M.C. Santos and Tenreyro, Silvana. "The Log of Gravity." *The Review of Economics and Statistics*, 88(4)(2006): 641-658.
- WTO (World Trade Organization). *World Trade Report 2011. The WTO and preferential trade agreements: From co-existence to coherence*. Geneva: WTO. 2011.

### Annex

**Table A1. Issues being negotiated for the legal text of the Trans-Pacific Partnership Agreement (as of 2011)**

Competition	The competition text will promote a competitive business environment, protect consumers, and ensure a level playing field for TPP companies. Negotiators have made significant progress on the text, which includes commitments on the establishment and maintenance of competition laws and authorities, procedural fairness in competition law enforcement, transparency, consumer protection, private rights of action and technical cooperation.
Cooperation and Capacity Building	The TPP countries agree that capacity building and other forms of cooperation are critical both during the negotiations and post-conclusion to support TPP countries' ability to implement and take advantage of the agreement. They recognize that capacity building activities can be an effective tool in helping to address specific needs of developing countries in meeting the high standards the TPP countries have agreed to seek. In this spirit, several cooperation and capacity building activities have already been implemented in response to specific requests and additional activities are being planned to assist developing countries in achieving the objectives of the agreement. The TPP countries also are discussing specific text that will establish a demand-driven and flexible institutional mechanism to effectively facilitate and cooperation and capacity building assistance after the TPP is implemented.
Cross-Border Services	TPP countries have agreed on most of the core elements of the cross-border services text. This consensus provides the basis for securing fair, open, and transparent markets for services trade, including services supplied electronically and by small- and medium-sized enterprises, while preserving the right of governments to regulate in the public interest.
Customs	TPP negotiators have reached agreement on key elements of the customs text as well as on the fundamental importance of establishing customs procedures that are predictable, transparent and that expedite and facilitate trade, which will help link TPP firms into regional production and supply chains. The text will ensure that goods are released from customs control as quickly as possible, while preserving the ability of customs authorities to strictly enforce customs laws and regulations. TPP countries also have agreed on the importance of close cooperation between authorities to ensure the effective implementation and operation of the agreement as well as other customs matters.
E-Commerce	The e-commerce text will enhance the viability of the digital economy by ensuring that impediments to both consumer and businesses embracing this medium of trade are addressed. Negotiators have made encouraging progress, including on provisions addressing customs duties in the digital environment, authentication of electronic transactions, and consumer protection. Additional proposals on information flows and treatment of digital products are under discussion.

## What May the Philippines Get from Joining TPP?

**Table A1. Issues being negotiated for the legal text of the Trans-Pacific Partnership Agreement (as of 2011)**

Environment	<p>A meaningful outcome on environment will ensure that the agreement appropriately addresses important trade and environment challenges and enhances the mutual supportiveness of trade and environment. The TPP countries share the view that the environment text should include effective provisions on trade-related issues that would help to reinforce environmental protection and are discussing an effective institutional arrangement to oversee implementation and a specific cooperation framework for addressing capacity building needs. They also are discussing proposals on new issues, such as marine fisheries and other conservation issues, biodiversity, invasive alien species, climate change, and environmental goods and services.</p>
Financial Services	<p>The text related to investment in financial institutions and cross-border trade in financial services will improve transparency, non-discrimination, fair treatment of new financial services, and investment protections and an effective dispute settlement remedy for those protections. These commitments will create market-opening opportunities, benefit businesses and consumers of financial products, and at the same time protect the right of financial regulators to take action to ensure the integrity and stability of financial markets, including in the event of a financial crisis.</p>
Government Procurement	<p>The text of the Government Procurement Chapter will ensure that procurement covered under the chapter is conducted in a fair, transparent, and non-discriminatory manner. The TPP negotiators have agreed on the basic principles and procedures for conducting procurement under the chapter, and are developing the specific obligations. The TPP partners are seeking comparable coverage of procurement by all the countries, while recognizing the need to facilitate the opening of the procurement markets of developing countries through the use of transitional measures.</p>
Intellectual Property	<p>TPP countries have agreed to reinforce and develop existing World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property (TRIPS) rights and obligations to ensure an effective and balanced approach to intellectual property rights among the TPP countries. Proposals are under discussion on many forms of intellectual property, including trademarks, geographical indications, copyright and related rights, patents, trade secrets, data required for the approval of certain regulated products, as well as intellectual property enforcement and genetic resources and traditional knowledge. TPP countries have agreed to reflect in the text a shared commitment to the Doha Declaration on TRIPS and Public Health.</p>
Investment	<p>The investment text will provide substantive legal protections for investors and investments of each TPP country in the other TPP countries, including ongoing negotiations on provisions to ensure non-discrimination, a minimum standard of treatment, rules on expropriation, and prohibitions on specified performance requirements that distort trade and investment. The investment text will include provisions for expeditious, fair, and transparent investor-State dispute settlement subject to appropriate safeguards, with discussions continuing on scope and coverage. The investment text will protect the rights of the TPP countries to regulate in the public interest.</p>
Labor	<p>TPP countries are discussing elements for a labor chapter that include commitments on labor rights protection and mechanisms to ensure cooperation, coordination, and dialogue on labor issues of mutual concern. They agree on the importance of coordination to address the challenges of the 21st-century workforce through bilateral and regional cooperation on workplace practices to enhance workers well-being and employability, and to promote human capital development and high-performance workplaces.</p>
Legal Issues	<p>TPP countries have made substantial progress on provisions concerning the administration of the agreement, including clear and effective rules for resolving disputes and are discussing some of the specific issues relating to the process. TPP countries also have made progress on exceptions from agreement obligations and on disciplines addressing transparency in the development of laws, regulations, and other rules. In addition, they are discussing proposals related to good governance and to procedural fairness issues in specific areas.</p>

## Clarete

**Table A1. Issues being negotiated for the legal text of the Trans-Pacific Partnership Agreement (as of 2011)**

Market Access for Goods	The TPP countries have agreed to establish principles and obligations related to trade in goods for all TPP countries that ensure that the market access that they provide to each other is ambitious, balanced, and transparent. The text on trade in goods addresses tariff elimination among the partners, including significant commitments beyond the partners' current WTO obligations, as well as elimination of non-tariff measures that can serve as trade barriers. The TPP partners are considering proposals related to import and export licensing and remanufactured goods. Additional provisions related to agricultural export competition and food security also are under discussion.
Rules of Origin	TPP countries have agreed to seek a common set of rules of origin to determine whether a product originates in the TPP region. They also have agreed that TPP rules of origin will be objective, transparent and predictable and are discussing approaches regarding the ability to cumulate or use materials from within the free trade area in order to make a claim that a product is originating. In addition, the TPP countries are discussing the proposals for a system for verification of preference claims that is simple, efficient and effective.
Sanitary and Phytosanitary Standards (SPS)	To enhance animal and plant health and food safety and facilitate trade among the TPP countries, the nine countries have agreed to reinforce and build upon existing rights and obligations under the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures. The SPS text will contain a series of new commitments on science, transparency, regionalization, cooperation, and equivalence. In addition, negotiators have agreed to consider a series of new bilateral and multilateral cooperative proposals, including import checks and verification.
Technical Barriers to Trade (TBT)	The TBT text will reinforce and build upon existing rights and obligations under the World Trade Organization Agreement on Technical Barriers, which will facilitate trade among the TPP countries and help our regulators protect health, safety, and the environment and achieve other legitimate policy objectives. The text will include commitments on compliance periods, conformity assessment procedures, international standards, institutional mechanisms, and transparency. The TPP countries also are discussing disciplines on conformity assessment procedures, regulatory cooperation, trade facilitation, transparency, and other issues, as well as proposals that have been tabled covering specific sectors.
Telecommunications	The telecommunications text will promote competitive access for telecommunications providers in TPP markets, which will benefit consumers and help businesses in TPP markets become more competitive. In addition to broad agreement on the need for reasonable network access for suppliers through interconnection and access to physical facilities, TPP countries are close to consensus on a broad range of provisions enhancing the transparency of the regulatory process, and ensuring rights of appeal of decisions. Additional proposals have been put forward on choice of technology and addressing the high cost of international mobile roaming.
Temporary Entry	TPP countries have substantially concluded the general provisions of the chapter, which are designed to promote transparency and efficiency in the processing of applications for temporary entry, and ongoing technical cooperation between TPP authorities. Specific obligations related to individual categories of business person are under discussion.
Textiles and Apparel	In addition to market access on textiles and apparel, the TPP countries also are discussing a series of related disciplines, such as customs cooperation and enforcement procedures, rules of origin and a special safeguard.
Trade Remedies	TPP countries have agreed to affirm their WTO rights and obligations and are considering new proposals, including obligations that would build upon these existing rights and obligations in the areas of transparency and procedural due process. Proposals also have been put forward relating to a transitional regional safeguard mechanism.

Source: Office of the US Trade Representative