

WORKING PAPER

17-10 Going It Alone in the Asia-Pacific: Regional Trade Agreements Without the United States

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Abstract

The withdrawal of the United States from the Trans-Pacific Partnership (TPP) in early 2017 led the remaining 11 countries in that trade and investment agreement to explore alternative ways to sustain economic integration in the Asia-Pacific region. This Working Paper shows that, without the United States, these 11 countries can achieve significant gains from high-quality, TPP-like agreements among themselves and from what might have to be a less rigorous but wider agreement in a separate, 16-member Asian trade negotiation, the Regional Comprehensive Economic Partnership (RCEP). Either of these multilateral options would yield benefits greater than those that would flow from bilateral agreements between individual countries and the United States alone, and gains from such accords could grow over time. For example, expanding the TPP without the United States to five other Asia-Pacific economies, all of which have expressed interest in the TPP in the past, would yield global income gains that rival those expected from the original TPP that included the United States, and the gains are even larger for some members. The United States, meanwhile, would suffer losses from such arrangements in two ways: first, because it would forego the benefits that would otherwise accrue from the relatively large TPP agreement, and second, because the new Asia-Pacific agreements would reduce US exports to the region as countries shift their trade to competitors of the United States. In the longer run, a new Asia-Pacific agreement or agreements would keep trade liberalization on the global agenda and likely attract further interest from large partners, including Europe. Eventually, the United States might observe that it is losing out and change its mind about joining these larger trade blocs.

JEL Codes: F15, F14, F13, F17

Keywords: Trade, TPP, RCEP, Asia-Pacific

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INTRODUCTION

The withdrawal of the United States from the Trans-Pacific Partnership (TPP)¹ dramatically disrupted the long-standing trade agenda of the Asia-Pacific. The region's governments have pursued trade and investment liberalization strategies for at least a quarter century, and many recently participated in both the TPP and Regional Comprehensive Economic Partnership (RCEP) negotiations.² Given the withdrawal of the United States, should the remaining members still move forward with the TPP? Should they seek instead bilateral agreements that the United States still seems interested in concluding? Or should the region simply focus on RCEP?

This Working Paper explores the choices facing Asia-Pacific governments from economic and political economy perspectives. The economic analysis presented here confirms that US withdrawal has been costly not only for the United States but also for its Asia-Pacific partners. But in addition, it shows that significant gains are possible from less rigorous but wide-membership trade agreements such as RCEP, and from high-quality trade agreements such as the TPP without the United States. As Schott (2017) noted, “bigger is better” with respect to Asia-Pacific trade agreements, but this analysis also shows that “better is bigger” in the sense that higher-quality agreements generate larger benefits. As explained below, these results are supported by simulation studies similar to those we conducted earlier for the TPP including the United States (Petri and Plummer 2016; Petri, Plummer, and Zhai 2012).

From a geopolitical perspective, new Asia-Pacific agreements would increase the leverage of individual countries against bilateral pressures and help to keep trade liberalization on the global agenda. In time, these agreements would likely attract other partners. For example, if an 11-member TPP agreement later admitted the five Asia-Pacific economies that have expressed interest in the TPP in the past³ (thus creating a TPP16), the total gains would rival those from the original agreement with the United States. Benefits could be further amplified if China, Europe, and/or the United States sought membership in the future. New agreements would also give members expanded influence over global rules.

The withdrawal of the United States in some ways undermines but in others strengthens the rationale for Asia-Pacific regional integration. Since the region's economies have similar comparative advantages, improved access to the US market has long been a powerful incentive for concerted regional liberalization. Without the United States, regional negotiations have to manage competition among China, Southeast Asia, and India with overlapping fields of comparative advantage. But the technological capabilities and global reach of Asia-Pacific economies are growing rapidly, and the region has become central to global production systems. Meanwhile, the share of the United States in the exports of TPP11 countries has dropped from 40 to 35 percent over the

1. The 12 countries signing the TPP agreement in February 2016 were Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States, and Vietnam.

2. Sixteen Asian economies are members of RCEP: Australia, Brunei, Cambodia, China, India, Indonesia, Japan, Korea, Laos, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Thailand, and Vietnam.

3. They are Indonesia, Korea, the Philippines, Taiwan, and Thailand.

last two decades. The region has a growing stake in the world trading system and its integration can enhance its global influence.

These arguments suggest an active, multitrack strategy to sustain economic integration in the Asia-Pacific, encompassing both wide-membership and high-quality agreements. Each has its political rationale, and the RCEP and TPP tracks might converge over time to create a regional system with high-quality rules among more advanced members and initially lower-quality rules among less advanced ones. Steps on this path will yield both economic benefits and stronger negotiating positions for members vis-à-vis global partners such as the United States.

OPTIONS FOR THE ASIA-PACIFIC

Historically, the United States offered not only economic benefits but also leadership for Asia-Pacific integration. It had long supported regional economic integration by building transpacific institutions such as the Pacific Economic Cooperation Council (1980), the Asia-Pacific Economic Cooperation (1989) forum, and the Enterprise for ASEAN Initiative (2002). It signed bilateral trade agreements with Australia, Canada, Chile, Colombia, Mexico, Peru, Singapore, and South Korea. Most recently, President Barack Obama's "Asian pivot" envisioned deepening these ties through the high-standard TPP agreement with 11 Asia-Pacific partners. Without this external driver, the region will need to build a new, internal case for cooperation.

1. No New Regional Trade Agreements

Such new arguments may not be marshalled quickly enough and regional cooperation could move slowly or stall. Although the role of the United States in the region has been declining, it remains a key market and complements Asia-Pacific comparative advantages; without the United States, Asia-Pacific groupings are dominated by mostly competitive economies. This is one reason why concerted liberalization within Asia is so difficult. The best results so far have been achieved in the ASEAN Economic Community (2015), based on strong political motives. China-Japan-Korea cooperation produced an investment agreement signed in 2012 and led to the start of negotiations on a trilateral free-trade agreement (FTA) in 2013, but there has not been much progress since. The RCEP negotiations also began in 2013 after decades of discussions, and even that step has been attributed to pressure from the TPP.⁴ Inertia is high.

The specific modeling assumptions used to conduct simulations are summarized in the next section. The "no new regional trade agreements" scenario is used as the baseline solution of this study, that is, as the business-as-usual growth path to which other results are compared. To be sure, this baseline does project some growth in regional interdependence due to market forces.⁵

4. See, for example, Damuri (2016).

5. Remaining liberalization of barriers in FTAs still being implemented is included in the baseline.

2. RCEP Advances

Greater formal integration is nevertheless possible as regional economies search for new engines of growth and as China turns to investments in connectivity and infrastructure, for example, through the Belt and Road Initiative.⁶ Such developments are also likely to fuel formal cooperation through RCEP and other regional mechanisms.

RCEP is the culmination of three decades of Asia-centered integration efforts. It was launched by the ASEAN process,⁷ although China has played an important role in the negotiations (Petri and Plummer 2014). RCEP's Principles envision "a modern, comprehensive, high-quality and mutually beneficial economic partnership agreement...[to] cover trade in goods, trade in services, investment, economic and technical cooperation, intellectual property, competition, dispute settlement" (ASEAN 2012). But the Principles also stress flexibility, so RCEP will include special and differential treatment for developing-country members and is likely to avoid areas such as labor and environmental standards.

The 20th round of RCEP negotiations, the last planned for 2017, is scheduled for October. Members hoped to conclude negotiations by the end of 2017⁸ to deliver an agreement for ASEAN's 50th anniversary. Indeed, RCEP would be an impressive achievement—the largest and most sophisticated agreement ever negotiated among so many Asian economies. But this target, as previous ones, is likely to be missed.

For now, the negotiations appear to be stuck on low tariff concessions by India, which has offered to eliminate only 80 percent of tariffs on traded goods compared with 92 percent by other economies. India, in turn, is asking for significant liberalization of the temporary movement of professional workers, especially in the information technology sector.⁹ If and when RCEP is concluded, its quality is likely to take a backseat to getting something signed. Reportedly only one-fourth of the 15 RCEP chapters¹⁰ have been completed so far.¹¹ It's difficult to imagine how a deep agreement—say, significant progress on services and investment or behind-the-border measures—can be concluded in the 2017 timeframe.

6. Using a computable general equilibrium model under modest assumptions, Zhai (2017) estimates potentially large gains under the Belt and Road Initiative over the next 15 years, i.e., annual global welfare gains would be about \$1.6 trillion by 2030, accounting for 1.3 percent of global GDP. More than 90 percent of this gain is expected to be captured by countries included in the Belt and Road Initiative. It is also expected to boost global trade by 5 percent in 2030.

7. ASEAN stands for Association of Southeast Asian Nations. "ASEAN centrality" is enshrined in the process and members of RCEP must have a free trade area in place with ASEAN.

8. Janne Suokas, "China wants to conclude RCEP trade talks in 2017," *GBTimes*, December 27, 2016, <http://gb-times.com/business/china-wants-conclude-rcep-trade-talks-2017>.

9. Asit Ranhan Mishra, "RCEP meeting in September likely to discuss India's proposal on services pact," *Live Mint*, August 18, 2017, www.livemint.com/Politics/8X13ma2MORxLgImfDrc6N/RCEP-meeting-in-September-likely-to-discuss-Indias-proposal.html.

10. Discussions have focused on trade in goods, trade in services, investment, economic and technical cooperation, intellectual property, competition policy, e-commerce, and institutional issues.

11. Eric Johnston, "RCEP envoys make progress on trade deal in Kobe but complexity threatens timeline," *Japan Times*, March 3, 2017, www.japantimes.co.jp/news/2017/03/03/business/rcep-envoys-make-progress-trade-deal-kobe-complexity-threatens-timeline/#.WQWmi9LyiyI.

In modeling RCEP, we assume relatively limited liberalization provisions: weaker tariff reductions than in most ASEAN-plus-one agreements; a limited positive list approach in services; reasonably strong investment provisions albeit with carveouts; few improvements in intellectual property rules; and varied provisions to assist small and medium-sized enterprises (SMEs).¹² In the longer run, as in other ASEAN processes, provisions could improve, especially if the TPP path offers sustained competition.

3. The TPP Without the United States

The TPP agreement signed in February 2016 could enter into force without the United States with relatively minor adjustments.¹³ Several members, including Australia and New Zealand, indicated initial interest at a meeting in Vina del Mar, Chile, in March 2017. At first, Prime Minister Shinzo Abe of Japan deflated these efforts by saying that a TPP without the United States would be “meaningless,” but as the possibility of a return of the United States to the TPP faded, in April 2017 Japan appointed a deputy foreign minister as chief negotiator for a TPP without the United States.¹⁴ The remaining TPP countries have held several meetings throughout 2017, including in Toronto and Hanoi in May, Hakone in July, and Sydney in August.

Japanese leadership has improved the outlook for the TPP but challenges remain. For Japan, the Diet already passed the TPP and moving forward would sustain Japanese reforms and shape international rules—and perhaps lead to the return of the United States. For Australia and New Zealand, the TPP could push Asia toward more rigorous rules and offer new opportunities in agriculture. In August 2017, New Zealand approved a negotiating mandate for the TPP11 and its government expressed optimism about concluding it.¹⁵ While Vietnam was at first reluctant to join, since the benefits it expected from the TPP came largely from US markets, it remains engaged. However, Chile and Peru have become more committed to the Pacific Alliance, and Canada and Mexico have become embroiled in renegotiating the North American Free Trade Agreement (NAFTA).

As TPP11 negotiations proceed, some provisions of the original TPP, such as the controversial eight-year data-exclusivity protection for biologic drugs advocated by the United States, may be suspended.¹⁶ Thus, some provisions that US negotiators fought hardest to achieve may now be falling by the wayside as the negotiations move forward without US participation. The resulting agreement may generate even stronger incentives for others to join. The agreement is structured as a “living agreement” with an accession clause designed to attract

12. These assumptions are based on previously cited sources as well as conversations with individuals familiar with the policy process. For a compendium of ongoing reports on the RCEP negotiations, see <https://aric.adb.org/fta/regional-comprehensive-economic-partnership>.

13. TPP Chapter 30 requires that at least 6 signature countries constituting 85 percent of aggregate TPP GDP (in 2013) ratify the agreement, and hence the agreement in its present form cannot move forward without the United States or Japan because the United States and Japan account for 60 and 17 percent of aggregate TPP GDP, respectively.

14. “Deputy foreign minister named as Japan’s chief TPP negotiator,” *Japan Times*, April 25, 2017, www.japantimes.co.jp/news/2017/04/25/business/deputy-foreign-minister-named-japans-chief-tpp-negotiator/#.WQBtuljiyUk.

15. “New Zealand’s prime minister says TPP-11 has ‘exceeded expectations’,” *Inside US Trade*, August 18, 2017.

16. Jun Yamazaki, “‘TPP 11’ to freeze drug data protection demanded by US,” *Nikkei Asian Review*, August 31, 2017.

new members. Indonesia, Korea, the Philippines, Taiwan, and Thailand all expressed interest in membership following the conclusion of the negotiations. At one stage China also expressed interest (Petri, Plummer, and Zhai 2014) and its membership, though controversial, would generate especially large benefits for all. Europe, with several bilateral FTAs in the region and a new one near completion with Japan, is another potential partner. Significant expansion is possible—perhaps even probable—with potentially large economic and strategic benefits.

In modeling the TPP scenarios, we hypothesize an 11-member alternative (original members less the United States) and a 16-member alternative, adding the five economies listed above. These scenarios could be viewed as different phases of a TPP path. The high standards of the original agreement are assumed to apply to both, partly because opening the agreement to renegotiation is considered risky by most participants. However, we assume that the depth of nonpreferential reductions in nontariff barriers—the general effect of TPP provisions on regulating trade with all partners, or the so-called spillover effect—will be smaller than it would have been under TPP12 with the United States.

4. Bilateral Agreements with the United States

The United States is said to be ready to pursue bilateral FTAs that it can “win,” if necessary by using security relationships as leverage. Early US statements about renegotiating NAFTA and the Korea-US FTA suggest that eliminating bilateral trade imbalances is the main objective of US policy. These emerging features of the US approach suggest that benefits to new bilateral partners may be quite limited, perhaps to preempt greater disruption in existing trade relationships through contingent protection. Moreover, bilateral FTAs cannot spur regional production networks, an important motivation for current Asia-Pacific integration.

The possibility of a bilateral FTA with Japan—the largest economy in the TPP after the United States itself—has been broached in the United States but Japan has resisted even the talk of negotiations so far. Japan runs a large bilateral surplus with the United States and has had frequent trade disputes with it; it is vulnerable to pressure. Liberalization of sectors important to both countries (agriculture, automobiles, and services) will be especially complicated to negotiate (Schott 2017). For example, Japan might be forced to give greater concessions in agriculture in return for smaller concessions in US automotive markets than it obtained in the TPP, making the agreement especially difficult to (re)sell to the Japanese Diet.

Bilateral FTAs with other, smaller Asia-Pacific economies may be still less valuable. For example, the United States tried to negotiate bilateral FTAs with Malaysia and Thailand under the Enterprise for ASEAN Initiative framework, but both hit an impasse. Taiwan expressed interest in an FTA with the United States, but negotiations with it would complicate the fragile US-China relationship. For the United States, small bilateral agreements would offer minimal economic benefits and would have to be justified mainly for their political symbolic value.

In modeling we take a less pessimistic position than these discussions might suggest, assuming that a real Japan-US FTA could be concluded with features similar to those of the TPP, but with less liberalization in some areas. We assume only half the nontariff barrier reductions negotiated in the TPP, no concessions in automobiles, and greater Japanese agricultural concessions.

POLICY SIMULATIONS

This study applies the computable general equilibrium (CGE) model used by Petri and Plummer (2016) and Petri, Plummer, and Zhai (2012), now to analyze the effects of RCEP, TPP scenarios that exclude the United States, and a US-Japan FTA.¹⁷ Box 1 briefly describes the model. The model has an extensive publication history and its details are reported on our website, www.asiapacifictrade.org, and in a series of books and papers referenced or accessible on that site. Broadly, the model belongs to the family of CGE models that has served as the workhorse of trade policy analysis for several decades. However, it incorporates innovations based on recent advances in trade theory, including firm-level differences in productivity levels, and substantially more detailed policy parameters and data on international trade and investment barriers than are found in other similar studies.¹⁸ The overall results of the model, say, for simulations of the original TPP12 agreement, generally fall in the middle of the range of studies conducted by other research groups; they were larger than results reported in older versions of CGE models and smaller than results in more speculative models incorporating some theoretical approaches.

Table 1 operationalizes assumptions about the liberalization of trade and investment barriers under the different policy scenarios discussed in the previous section. The results of the simulations for real income levels are presented in table 2 and for exports in table 3. These results reflect changes in the year 2030 relative to the baseline solution for that year, which assumes no new trade policy initiatives in the Asia-Pacific.¹⁹ Results for the original, 12-member TPP agreement are included for comparison, based on projections in Petri and Plummer (2016).

The **TPP12**, the original TPP agreement, is reproduced as a reference from our earlier papers. It generates global income benefits of \$492 billion. This includes income gains of \$131 billion for the United States and substantial percentage gains for other members, including especially for Vietnam and Malaysia. As is evident from comparisons with other scenarios, much of these gains are based on their trade with the United States.

The **TPP11**, which includes all members of the original TPP other than the United States, generates substantially lower global income benefits of \$147 billion, compared with \$492 billion for the TPP12.²⁰ Gains are smaller for every member because the agreement is much smaller without the United States, and because many TPP11 members already have free trade agreements with each other. The differences are especially marked

17. The underlying data and results of this model, including its prior applications, are on the website: www.asiapacifictrade.org.

18. The properties of this model are examined in Zhai (2008). The modeling approach yields somewhat larger effects than the usual Armington formulation.

19. Descriptions of the baseline can be found in Petri and Plummer (2016).

20. We also ran simulations of a TPP5 scenario, which includes only Australia, Brunei, Japan, Singapore, and New Zealand. This small group of open economies has been recently mentioned in media speculations as it could quickly adopt the TPP agreement. However, the gains from an agreement among already open economies would also be small, accounting for only about ¼ of TPP11's already modest benefits.

for Japan, Malaysia, and Vietnam, with the benefits of each reduced to about one-third to one-fourth of their TPP12 benefits. Establishing freer trade with the United States was a major reason for their interest in the TPP; this trade is not addressed by the TPP11. On the other hand, some economies in North America and Oceania, including Australia, Canada, and Mexico, do reasonably well in the TPP11; first, their gains in US markets were limited in the TPP12 since they already have FTAs with the United States, and second, the TPP11 would allow them to capture some benefits in third-country markets, such as Japan, that might have gone to the United States under the TPP12. But no member economy gains from replacing the TPP12 with TPP11. The United States experiences the largest single net loss by moving from a \$131 billion gain (under TPP12) to a \$2 billion loss (under TPP11).²¹

The **TPP16** (TPP11 plus Indonesia, Korea, the Philippines, Taiwan, and Thailand) generates the greatest benefits among the new alternatives examined in this paper, with income gains of \$449 billion globally and \$486 billion for member economies (member-economy gains are in fact higher than in the TPP12 itself). The most prominent beneficiaries, in absolute terms, are Japan, Korea, and Taiwan, along with their Southeast Asian partners. The TPP16 gains are large because such an agreement would apply high-quality provisions to trade among those three industrialized economies, which do not currently have a trade agreement with each other. Also, the agreement would go further than the others analyzed in establishing new supply chains in the Asia-Pacific region. Taiwan, in particular, has few agreements with other economies (only New Zealand and Singapore in the TPP16) and would benefit disproportionately with income gains of 7.8 percent of GDP, the largest percentage gain for any economy. The gains associated with TPP16 suggest that the TPP path could provide very attractive options for new members as expansion gains steam.

The **US-Japan bilateral agreement** is the least attractive among the alternatives examined, with global income gains of \$120 billion. Both Japanese and US gains would fall far short of benefits under the TPP12. But the parameters used to simulate the agreement (as described in table 1) may be still too optimistic. If the US administration directed negotiators to prioritize smaller bilateral trade imbalances rather than greater mutual gains from trade, an unusual requirement not supported by economic logic, the bilateral scenario would yield even lower gains.

The **RCEP agreement** generates global income gains of \$286 billion. This reflects, on one hand, the economic scale of RCEP—its member economies have the largest combined GDP among all alternatives examined—and on the other, the relative weakness of RCEP provisions. As already noted, the RCEP negotiations are shaping

21. Kawasaki (2017) also uses a computable general equilibrium model to estimate the effects of TPP11, Japan-US FTA, and RCEP alternatives. He finds larger results in part due to two assumptions that differ substantially from those made in this study. First, Kawasaki assumes 50 percent elimination of nontariff barriers, while our results are derived from the expected provisions of the agreements and generally reflect less liberalization. Second, he assumes that 50 percent of liberalization measures agreed in the FTAs would be implemented on a most-favored-nation basis, that is, would apply to all partners rather than those in the agreement. We assume a significantly lower 20 percent spillover rate in the TPP12 analysis, and an even lower 10 percent spillover effect from the smaller agreements analyzed in this study.

up as exceptionally difficult. RCEP members are more competitive than complementary in economic structure and no single economy is accepted as a natural leader. In addition, many prior trade agreements cover trade among RCEP countries—the requirement for membership in RCEP is that each economy have an agreement with ASEAN—and RCEP provisions are not likely to exceed in quality FTAs already in place. Still, RCEP could lead to improved follow-up agreements in the future, as other ASEAN agreements have done, yielding greater long-run benefits.

Further analysis shows that most income gains reported in the scenarios are due to changes in trade and associated productivity gains, not trade diversion. Member-economy exports rise by usually more than double the income gains in all regional scenarios (table 3). Nonmember economies are negatively affected in the aggregate only in the TPP scenarios without the United States.²² But in all cases trade creation far exceeds trade diversion. China is the biggest loser in the TPP scenarios in terms of income losses—due to both trade diversion and the erosion of its preferential treatment in the integrating markets—but in all cases the effects are small.

CONCLUSIONS

To former US Trade Representative Michael Froman, the TPP offered “a positive vision for American leadership in the global economy. This vision is vitally important, because in the absence of U.S. guidance and leadership, the world is likely to turn to alternative policy models.”²³ Since the withdrawal of the United States from the TPP, other observers have also worried that confrontational, mercantilist approaches will replace steady, albeit far from linear, progress toward global economic integration.

Such a stark forecast is not foreordained. This Working Paper offers a brighter perspective by exploring positive policy alternatives that appear to be emerging in the Asia-Pacific even without US involvement. It shows that:

- Even an 11-member TPP (all original members excluding the United States) could generate benefits to members, albeit with gains only about one-third as large as those expected from the 12-member TPP. The shortfall would be largest for economies that offered significant policy concessions motivated by their interest in access to US markets, such as Vietnam and Malaysia.
- Larger regional agreements, such as a 16-member TPP and RCEP, would generate greater benefits than smaller ones. For example, adding five economies that have expressed interest in the TPP (Indonesia, Korea, Philippines, Taiwan, and Thailand) to the 11-member agreement would boost benefits three-fold, in part because the agreement’s high-quality rules would help to establish new supply chains in the Asia-Pacific region.

22. This result derives mainly from the lower spillover assumptions used in the scenarios of this study, as explained in the previous footnote. The spillover effect occurs due to close monitoring of the implementation of an agreement and is assumed not to occur in the same degree under the smaller regional agreements analyzed in this paper as in the TPP12.

23. Michael Froman, “Trade, Growth and Jobs,” Cabinet Exit Memo, 5 January, 2017, p. 7, <https://insidetrade.com/sites/insidetrade.com/files/documents/jan2017/USTR%20Exit%20Memo.pdf>.

- Bilateral agreements, even among big countries like Japan and the United States, offer far more limited benefits than regional agreements.
- High-quality agreements lead to substantially larger gains than less rigorous ones. For example, the TPP16 agreement could produce more than double the gains of RCEP, even though the TPP16 economies have only half the GDP of the RCEP region.

What can Asia-Pacific policymakers take from these results? They show that regional action can produce benefits. All regional alternatives explored in this study generated greater gains than a bilateral agreement spanning two of the world's three largest economies, Japan and the United States. Both the scale and quality of regional agreements matter. Even if no large, high-quality agreement can be concluded now, one could be built over time. The gains from a TPP11 agreement might be multiplied three-fold by adding five plausible partners. Similarly, an RCEP agreement might open a path to steady, future improvements. In other words, there is a strong case for accelerating formal economic integration in the Asia-Pacific on multiple tracks.

For the United States the implications are more negative. The United States would forego the benefits of participating deeply in the integration of a very dynamic region. In addition, newly emerging forms of regional integration would exclude the United States. For example, US exporters would lose some markets relative to the baseline in most scenarios analyzed in this Working Paper. Direct economic losses would be modest at first, but greater costs would follow as large economies, including China, India, and Japan, begin to shape regional rules—on trade, investment, intellectual property, the digital economy, state-owned enterprises, labor, and so on—to their own advantage. These trends would validate some of Froman's concerns. To be sure, by creating stronger Asian economies and markets, regional integration may also eventually encourage the United States to revisit its engagement with the Asia-Pacific.

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Box 1 The computable general equilibrium model

Computable general equilibrium (CGE) analysis accounts for interactions among firms, households, and governments in multiple product markets in multiple countries and regions of the world economy. Firms are assumed to maximize profits and consumers to maximize utility. After transfers among firms, households, and governments, incomes are spent on goods, or are saved and invested, both at home and abroad. The model finds an equilibrium solution by calculating prices that make supply equal demand for each product and factor of production (labor, capital, and land) in every region. The effects of free trade agreements (FTAs) are simulated by introducing changes in tariffs and other parameters (see table 1), finding a new equilibrium, and comparing new prices, output, trade, income, and demand to baseline levels.

The mathematical structure of a CGE model reflects assumptions about market competition, trade patterns, consumer preferences, production technology, market equilibrium conditions, factor supplies, taxes, and many other economic relationships. These assumptions are represented by input-output tables, elasticities, and other parameters—for example, how consumption demand responds to income. Data are collected from multiple sources and the model is calibrated to yield an initial solution that matches data for a benchmark year (in our model, 2015). Simulations then predict the evolution of economies over time, including policy interventions. Because CGE models represent medium- and long-term changes, they assume normal levels of employment and do not incorporate features to analyze short-term macroeconomic fluctuations. Simulations in this Working Paper are based on a 19-sector, 29-region model, based on a specification by Zhai (2008). Parameters and data sources are shown in Petri and Plummer (2016).

The model is dynamic in that simulations track changes in saving rates that affect capital accumulation over time. However, the model does not include other dynamic factors proposed in the literature, such as productivity increases from the accumulation of knowledge and other endogenous growth effects, induced inflows of foreign technology and capital, and follow-up trade liberalization that may result from new trade agreements. Introducing such effects can dramatically change the results, as demonstrated by Todo (2013). The model and its results are described in detail on www.asiapacific-trade.org.

Table 1 Trade policy scenarios for the Asia-Pacific

	TPP12	TPP11	TPP16	US-Japan FTA	RCEP
Membership	Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States, and Vietnam	Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam	Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, Vietnam, Indonesia, Korea, Philippines, Taiwan, and Thailand	Japan and United States	Australia, Brunei, Cambodia, China, India, Indonesia, Japan, Korea, Laos, Malaysia, Myanmar, New Zealand, Philippines, Singapore, Thailand, and Vietnam
Launch date	2017	2018	2018	2018	2018
Tariff liberalization	99 percent eliminated (as negotiated)	Same as TPP12	Same as TPP12	Same as TPP12	85 percent eliminated
NTB liberalization				3/4 concessions of TPP12; 1/2 concessions of TPP12 in vehicles by US	
Agricultural liberalization	KORUS adjusted (see Petri, Plummer, and Zhai 2012)	Same as TPP12	Same as TPP12	2x concessions of TPP12 by Japan	3/4 concessions of recent ASEAN+1 agreements
Services liberalization				3/4 concessions of TPP12	
FDI liberalization				3/4 concessions of TPP12	
Nonpreferential NTB reductions	20 percent	10 percent	10 percent	10 percent	10 percent

TPP = Trans-Pacific Partnership; RCEP = Regional Comprehensive Economic Partnership; FDI = foreign direct investment; KORUS = Korea-US Free Trade Agreement; ASEAN = Association of Southeast Asian Nations; NTB = nontariff barriers
Source: Authors' assumptions.

Table 2 Real incomes in 2030

Country	2030 income (billions of 2015 dollars)	Change in billions of 2015 dollars						Percent of income				
		TPP12	TPP11	TPP16	US-Japan FTA	RCEP		TPP12	TPP11	TPP16	US-Japan FTA	RCEP
Americas	39,569	208	49	72	51	2		0.5	0.1	0.2	0.1	0.0
Canada	2,717	37	22	29	-1	0		1.3	0.8	1.1	0.0	0.0
Chile	463	4	3	5	0	0		0.9	0.7	1.1	0.0	0.0
Colombia	684	0	0	0	0	0		0.0	0.0	0.0	0.0	0.0
Mexico	2,169	22	16	33	-1	0		1.0	0.7	1.5	0.0	0.0
Peru	442	11	10	11	0	0		2.6	2.2	2.5	0.0	0.0
United States	25,754	131	-2	-6	52	1		0.5	0.0	0.0	0.2	0.0
Latin America nie	7,341	3	0	-1	1	0		0.0	0.0	0.0	0.0	0.0
Asia	50,659	202	69	316	57	253		0.4	0.1	0.6	0.1	0.5
Brunei	31	2	1	1	0	0		5.9	2.6	3.7	0.1	0.9
China	27,839	-18	-10	-53	-1	101		-0.1	0.0	-0.2	0.0	0.4
Hong Kong	461	6	1	1	1	2		1.2	0.2	0.3	0.3	0.4
India	5,487	-5	-4	-16	0	57		-0.1	-0.1	-0.3	0.0	1.0
Indonesia	2,192	-2	-1	18	0	1		-0.1	-0.1	0.8	0.0	0.0
Japan	4,924	125	46	98	60	56		2.5	0.9	2.0	1.2	1.1
Korea	2,243	-8	-3	84	-2	24		-0.3	-0.1	3.8	-0.1	1.1
Malaysia	675	52	21	36	0	6		7.6	3.1	5.4	0.0	0.9
Philippines	680	-1	0	13	0	1		-0.1	0.0	1.9	0.0	0.2
Singapore	485	19	13	19	0	2		3.9	2.7	3.8	0.0	0.4
Taiwan	776	1	0	60	0	-3		0.2	0.0	7.8	0.0	-0.4
Thailand	812	-7	-5	30	-1	3		-0.8	-0.6	3.6	-0.1	0.3
Vietnam	497	41	11	25	0	2		8.1	2.2	5.1	0.0	0.5
ASEAN nie	283	-1	0	0	0	1		-0.4	0.0	-0.1	0.0	0.2
Asia nie	3,272	0	0	-1	0	0		0.0	0.0	0.0	0.0	0.0
Oceania	2,854	21	15	22	0	7		0.7	0.5	0.8	0.0	0.2
Australia	2,590	15	12	17	0	5		0.6	0.5	0.7	0.0	0.2
New Zealand	264	6	3	5	0	2		2.2	1.1	2.0	0.0	0.6

(table continues)

Table 2 Real incomes in 2030 (*continued*)

Country	2030 income (billions of 2015 dollars)	Change in billions of 2015 dollars								Percent of income			
		TPP12	TPP11	TPP16	US-Japan FTA	RCEP	TPP12	TPP11	TPP16	US-Japan FTA	RCEP	TPP12	TPP11
Rest of world (ROW)	40,720	60	14	39	12	23	0.1	0.0	0.1	0.0	0.1	0.1	0.0
Africa (Sub-Saharan)	4,068	0	0	-1	0	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Europe	23,189	48	12	22	10	16	0.2	0.0	0.1	0.0	0.0	0.1	0.0
EMENA	10,001	9	2	15	1	5	0.1	0.0	0.1	0.0	0.0	0.0	0.0
Russia	3,371	2	0	2	0	1	0.1	0.0	0.1	0.0	0.0	0.0	0.0
ROW	90	0	0	0	0	0	0.2	0.1	0.0	0.0	0.0	0.1	0.0
World	133,801	492	147	449	120	286	0.4	0.1	0.3	0.1	0.1	0.2	0.2

Memorandum

Income (members)	41,011	15,257	21,961	30,678	49,800								
Δ (members)	465	157	486	111	201		1.1	1.0	2.2	0.4			
Δ (nonmembers)	27	-10	-37	9	84		0.0	0.0	0.0	0.0			

nie = not included elsewhere; TPP = Trans-Pacific Partnership; RCEP = Regional Comprehensive Economic Partnership; ASEAN = Association of Southeast Asian Nations; EMENA = Europe, Middle East, and North Africa.

Note: Country details of regional aggregates may not add to totals due to rounding.

Source: Authors' computations. Changes defined as equivalent variations in income.

Table 3 Exports in 2030

Country	2030 exports (billions of 2015 dollars)	Change in billions of 2015 dollars					Percent of exports				
		TPP12	TPP11	TPP16	US-Japan FTA	RCEP	TPP12	TPP11	TPP16	US-Japan FTA	RCEP
Americas	7,068	478	72	103	138	-1	6.8	1.0	1.5	2.0	0.0
Canada	835	58	39	56	-3	-1	7.0	4.6	6.7	-0.3	-0.1
Chile	147	8	6	8	0	-1	5.3	4.3	5.7	-0.2	-0.5
Colombia	120	1	0	0	0	0	0.9	0.1	0.0	0.2	0.0
Mexico	670	32	23	45	-2	-2	4.7	3.5	6.7	-0.3	-0.2
Peru	135	14	12	15	0	0	10.3	9.0	10.8	-0.2	-0.2
United States	3,906	357	-10	-22	141	3	9.1	-0.3	-0.6	3.6	0.1
Latin America nie	1,255	9	1	1	2	0	0.7	0.1	0.1	0.2	0.0
Asia	12,905	511	172	874	131	668	4.0	1.3	6.8	1.0	5.2
Brunei	16	1	1	1	0	0	9.0	3.5	4.9	0.1	0.9
China	4,976	9	-9	-44	7	259	0.2	-0.2	-0.9	0.1	5.2
Hong Kong	357	4	1	1	1	-1	1.0	0.2	0.2	0.2	-0.3
India	1,360	1	-3	-13	1	132	0.1	-0.2	-1.0	0.1	9.7
Indonesia	446	-4	-3	49	0	17	-1.0	-0.6	11.1	-0.1	3.8
Japan	1,190	276	97	225	125	136	23.2	8.1	18.9	10.5	11.4
Korea	1,089	-11	-6	203	-3	62	-1.0	-0.6	18.7	-0.2	5.7
Malaysia	491	99	42	71	0	17	20.1	8.6	14.4	0.0	3.4
Philippines	184	-1	0	29	0	4	-0.4	-0.2	16.0	0.0	2.2
Singapore	470	35	29	33	-1	3	7.5	6.2	7.0	-0.2	0.6
Taiwan	506	4	0	170	1	-7	0.8	-0.1	33.6	0.2	-1.5
Thailand	561	-9	-7	68	-1	24	-1.6	-1.3	12.0	-0.2	4.3
Vietnam	357	107	31	84	0	17	30.1	8.8	23.5	0.0	4.9
ASEAN nie	93	-3	0	-1	0	4	-2.8	-0.4	-1.5	0.2	3.9
Asia nie	810	2	1	0	1	1	0.2	0.1	-0.1	0.2	0.1
Oceania	673	38	28	45	-1	17	5.6	4.2	6.6	-0.1	2.5
Australia	589	29	23	37	-1	14	4.9	4.0	6.3	-0.1	2.4
New Zealand	84	9	5	8	0	3	10.2	5.8	9.2	0.0	3.1

(table continues)

Table 3 Exports in 2030 (*continued*)

Country	2030 exports (billions of 2015 dollars)	Change in billions of 2015 dollars						Percent of exports					
		TPP12	TPP11	TPP16	US-Japan FTA	RCEP		TPP12	TPP11	TPP16	US-Japan FTA	RCEP	
Rest of world (ROW)	15,503	79	14	10	10	-7		0.5	0.1	0.1	0.1	0.1	0.0
Africa (Sub-Saharan)	883	5	1	0	1	1		0.5	0.1	0.0	0.1	0.1	0.1
Europe	9,706	49	8	-7	5	-9		0.5	0.1	-0.1	0.1	0.1	-0.1
EMENA	4,021	20	4	14	3	1		0.5	0.1	0.3	0.1	0.1	0.0
Russia	851	5	1	2	1	1		0.5	0.1	0.3	0.1	0.1	0.1
ROW	43	0	0	0	0	0		1.1	0.3	-0.2	0.1	0.1	-0.1
World	36,149	1,106	287	1,032	278	677		3.1	0.8	2.9	0.8	0.8	1.9
<i>Memorandum</i>													
Exports (members)		8,890	4,984	7,769	5,096	12,745							
Δ (members)		1,025	308	1,102	266	546		11.5	6.2	14.2	5.2		4.3
Δ (nonmembers)		81	-22	-70	12	131		0.3	-0.1	-0.2	0.0		0.6

nie = not included elsewhere; TPP = Trans-Pacific Partnership; RCEP = Regional Comprehensive Economic Partnership; ASEAN = Association of Southeast Asian Nations; EMENA = Europe, Middle East, and North Africa

Note: Country details of regional aggregates may not add to totals due to rounding.

Source: Authors' computations.