

INDUSTRIES AND JOBS AT RISK IF THE TRANS-PACIFIC PARTNERSHIP DOES NOT PASS

Introduction

In 2015, the United States shipped \$680 billion dollars of goods and \$184 billion in services exports to the 11 other countries who participated in negotiating the Trans-Pacific Partnership (TPP). As documented in a number of independent economic analyses, the TPP agreement provides many opportunities for American consumers, workers, and businesses. It would lift growth rates over time and contribute to rising living standards. Studies also suggest that the majority of the gains from TPP would accrue to workers as increasing productivity and demand for labor would both contribute to wage increases relative to a world without TPP—consistent with the evidence that exporters tend to pay higher wages than similar non-exporting firms.

Yet the cost of not passing TPP would likely be substantially larger than just the foregone benefits because existing trade relationships would not necessarily remain unchanged, as other countries would not wait indefinitely for the United States to ratify the agreement. Instead, in the absence of TPP, countries have already made it clear that they will move forward in negotiating their own trade agreements that exclude the United States. These agreements would improve market access and trading opportunities for member countries, while U.S. businesses would continue to face existing trade barriers. One such agreement is the Regional Comprehensive Economic Partnership (RCEP), a trade agreement that involves China, Japan, and many of the dynamic and fast-growing economies of Asia, which could potentially fill the void left if Congress fails to pass TPP.

If TPP did not pass, the United States would not only forego substantial economic gains, but would also face trade diversion and enjoy less market access compared with other countries such as China. RCEP will provide its member countries with improved access to the markets of seven countries that are members of the TPP, putting U.S. exporters at a disadvantage and threatening the billions of dollars of exports the United States currently sells in the region, in addition to squandering the new

export opportunities that TPP would provide. Nearly 45 percent of current U.S. goods exports go to TPP countries—highlighting the importance of improved market access, trade facilitation, and clear rules of the road for trade with these countries. More than \$225 billion in U.S. exports—roughly 10 percent of total U.S. exports to the world—go to the seven countries that are in TPP but would also be in RCEP in the event TPP is not passed and RCEP goes forward.

Beyond aggregate evidence based on models or historical experience, it is helpful to take a more straightforward, micro-level look at which industries within the United States are likely to directly lose out if TPP does not pass. It is important to remember that the baseline comparison for understanding the economic impact of TPP is not the current set of trade relationships that the United States enjoys but rather the counterfactual trade relationships and rules that will very likely develop if TPP does not pass. The status quo is not guaranteed into the future and not passing TPP would likely create new challenges for American exporters and their employees. In particular, if TPP is not passed, trade agreements between other countries will continue. And these other trade agreements in Asia that do not include the United States will not be based on U.S. values or a strong vision for raising standards and leveling the competitive playing field for global commerce.

This brief analyzes one aspect of the economic impact if TPP does not pass and RCEP takes effect. In particular, it examines the Japanese market and compares the tariffs that U.S. and Chinese firms would face under RCEP, showing that Chinese firms would enjoy meaningful tariff cuts that would improve their competitive position relative to U.S. firms. This is just one of scores of bilateral trading relationships between the 16 countries currently involved in RCEP negotiations and provides an illustrative example of the challenges that U.S. businesses would face if RCEP takes effect instead of TPP.

Nearly 5 million people work in U.S. goods-exporting industries that could face a direct loss of competitive

position relative to China if RCEP were to give its member countries preferential access to the Japanese market over U.S. firms. Losses to these industries would compound the foregone benefits of TPP for U.S. firms who would have benefited from improved market access.

This issue brief documents some of the potential economic losses in the event that TPP does not pass. In particular, these losses fall into two categories: (1) the impact to specific industries that would face an erosion of relative market access in the event RCEP passes; and (2) foregone benefits to industries which currently export to TPP countries and would fail to see improved market access if TPP does not pass. The brief takes Japan as one example of an important market for U.S. goods, as the largest TPP country that would also enter RCEP, and China as one possible competitor for that market who would gain preferential access under RCEP. But this example captures only a small fraction of the potential losses to U.S. firms across the Asia-Pacific market if TPP does not pass.

In the event RCEP is implemented and TPP is not, within the finite example of just the China-Japan goods export relationship:

- China likely would see substantial tariff cuts when selling to Japan, with typical reductions of over 5 percentage points where tariffs are cut and many tariffs cut by more than 10 percentage points. The average tariff on goods covered by RCEP would likely be less than half the average rate faced by the same goods if exported from the United States.
- Thirty-five industries in the United States which sell a combined \$5.3 billion in goods exports to Japan a year would see an erosion of their market access to Japan relative to Chinese firms due to tariff cuts under RCEP. These U.S. industries include 162,000 business establishments and employ nearly 5 million workers nationwide.
- Seventy-eight U.S. industries that each export over \$1 billion a year in goods to TPP partners and employ nearly 12 million workers in 360,000 business establishments nationwide would fail to see improved market access if TPP is not passed.

Further, the rules of the road in Asia formed in the absence of TPP could substantially disadvantage U.S. firms and workers in these industries.

- The lost opportunities to increase growth and productivity in the U.S. economy are substantial if TPP is not passed. This would also prevent the United States from helping to shape trade in Asia to adhere to high standards and U.S. values.

This is just an illustration of some of the many consequences of not passing TPP. The implications of RCEP itself would encompass more countries. Potentially other bilateral and plurilateral trade agreements would be concluded that would leave out the United States, leading to further trade diversion. And provisions in TPP to level the playing field, including on rules for labor, the environment, and state-owned enterprises would not go into effect, nor would the Joint Declaration by TPP countries to address currency manipulation and competitive devaluation that is contingent on TPP.

RCEP and Trade Diversion

In simple trade models where there are just two countries, a reduction in trade barriers through a trade agreement makes both countries better off for a variety of reasons—from focusing on comparative advantage, achieving scale economies, and allowing more productive firms to expand, to providing consumers with more varieties of goods. However, in the real world where trade relationships exist between many countries and groups of countries simultaneously, countries left out of an agreement can experience negative effects, as their exporters face higher trade barriers than firms inside the preferential trade area. A crucial factor is whether the trade agreement expands global trade as a whole, lifting economic growth and likely improving welfare for all countries, or whether total trade remains constant and it mainly diverts trade flows from certain countries toward others, disadvantaging countries that are left out of the agreement.¹

An important implication of this analysis is that one cannot examine a trade agreement in isolation. The baseline case in the event a trade agreement is not passed is not simply the status quo trading relationships

¹ See Magee (2008), Freund and Ornelas (2010), Deardorff (2014), Bagwell, Bown, and Staiger (2015), and Limao (2016) for discussions of trade diversion in the context of

preferential trade agreements. There is evidence that preferential trade agreements create more trade than they divert.

of a country—that baseline will depend on whether other trade agreements take place as well. Failure to pass TPP raises the likelihood that other regional trading agreements in Asia will take its place, putting U.S. firms at a disadvantage.

Currently, 16 countries are negotiating a mega-regional free trade agreement (FTA) called the Regional Comprehensive Economic Partnership (RCEP), also known as “ASEAN + 6”: Australia, Brunei, Cambodia, China, India, Indonesia, Japan, Laos, Malaysia, Myanmar, New Zealand, Philippines, Singapore, South Korea, Thailand, and Vietnam. Seven of these countries are also members of the TPP: Australia, Brunei, Japan, Malaysia, New Zealand, Singapore, and Vietnam. TPP would substantially improve market access to these countries for U.S. exporters, including provisions that would expand market access even beyond the existing FTAs that the United States has with Australia and Singapore. Thus, the United States would not only lose out on improved market access to these countries if TPP were not to pass, but U.S. exporters might lose ground to China and other Pacific Rim countries who would see improved market access under RCEP. The United States does not have an FTA with Japan, which is the largest of the TPP members that would also be in RCEP. With RCEP, other countries’ exporters would gain a substantial advantage over American exporters if TPP is not implemented.

The Risk of Shut-Out of U.S. Exports: The Case of Japan

In this analysis, we take Japan’s tariffs toward China as one example of the market impact that the implementation of RCEP could have if TPP is not implemented. In this scenario, we assume that Japan maintains the standard WTO “most favored nation” (MFN) tariffs on imports from the United States, while lowering tariffs with China in a pattern similar to the

tariff schedule observed in Japan’s existing FTA with the ASEAN countries. In fact, there are 14 RCEP members, in addition to China, negotiating with Japan with a wide range of industry comparative advantage—Australia and New Zealand in agriculture, Vietnam and Korea in fisheries, Korea in advanced manufacturing and the automotive industry, and so on—so the diversionary effects on U.S. exporters would be considerably larger than this analysis covers even in this one destination market. Thus, this exercise outlines only a fraction of the potential impact of RCEP on U.S. exporters.

Tariff Reductions under RCEP

Currently, Japan uses its Generalized System of Preferences (GSP) schedule to assess tariffs on Chinese goods. Only a subset of goods are designated as eligible for the GSP program², which provides special tariff rates on imports from developing economies, virtually all lower than the “most favored nation” (MFN) tariffs assessed by Japan on U.S. goods. As a WTO member, China’s exports of goods not eligible for GSP also face MFN tariffs.

The RCEP agreement would lower the tariffs Chinese goods face in the Japanese market. As a proxy for the lower tariffs China would enjoy under RCEP, we use the current tariff schedule faced by ASEAN countries under the FTA they have with Japan. This baseline is consistent with Petri, Plummer, and Zhai (2012/2014) who use an average of recent ASEAN templates to calibrate expected tariff changes under RCEP.³

Of the 2,496 HS6 tariff codes for which there are tariffs registered under the WTO’s database showing Japan’s ASEAN tariff schedule, Japan-ASEAN tariffs are lower than Japan’s GSP tariffs for 1,262 codes (50.6%), the same as Japan’s GSP tariffs for 1,195 codes (47.9%), and greater than Japan’s GSP tariffs for just 39 codes (1.6%), assuming all goods covered that are not GSP-eligible are

² About 3,500 goods “at the 9 digit level,” are GSP-eligible according to the Ministry of Foreign Affairs. <http://www.mofa.go.jp/policy/economy/gsp/explain.html#section2>

³ The authors estimate in a 2012 version of their updated 2016 study that RCEP has little net impact on real income in the United States and is associated with a drop in US exports to the world of \$3.7 billion, but present no estimates for changes in U.S. exports to RCEP members or TPP-RCEP overlapping members. The small macro impact

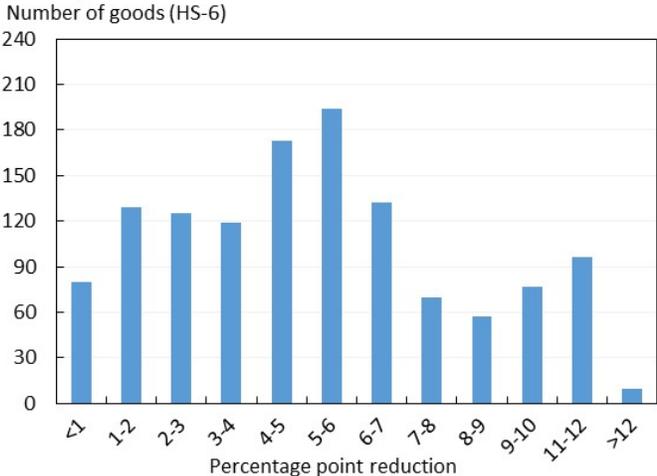
is in part due to restrictive assumptions necessary to close the mathematical model, but there is also reason to believe that GTAP and other computable general equilibrium (CGE) models may under-predict trade diversion, possibly due to the sensitivity of modeling results to elasticities of substitution and the difficulty involved in calibrating trade elasticities. (See Feenstra, Luck, Obstfeld, and Russ (2014) for a discussion of trade elasticities in the context of CGE models.)

assigned MFN tariffs.⁴ The overall average Japan-ASEAN tariff rate, across the 2,496 goods for which there is a tariff in the Japan-ASEAN tariff schedule in the WTO tariff database, is 1.4 percent, compared with 3.9 percent for Japan-GSP rates.⁵ Looking at the gaps between tariff rates, the median gap between GSP and Japan-ASEAN is 0.4 percentage point. Thus, Chinese goods would likely face a median tariff change to 0.4 percentage point lower under RCEP than under GSP, improving their competitive position.

However, this analysis also includes many goods which currently face a tariff of zero or will not change under our RCEP proxy. When only examining goods that would see tariff cuts, the median tariff cut rises to over 5 percentage points, with numerous goods seeing tariff cuts of over 10 percentage points (see Figure 1). Furthermore, RCEP would lock in the zero tariff rates that currently exist, but could be raised at any time, providing much greater certainty for exporters in RCEP countries. Economic research shows that greater certainty raises investment and leads to expansion by exporting firms, discussed further below.

In contrast, the United States would continue to face notably higher tariffs in Japan under the MFN rates for many of the same goods covered by the ASEAN tariff schedule, our RCEP proxy. Japan’s average MFN rate across goods covered under the Japan-ASEAN schedule is 5.9 percent, and the median gap between MFN and tariffs on goods in the Japan-ASEAN schedule is 3.9 percentage points. Thus, China and other exporters in Asia might see a substantial improvement in their market access to Japan while U.S. exporters would fail to see better access. Figure 1 shows the distribution of the size of tariff cuts across the goods facing tariff reductions under RCEP relative to GSP and Table 1 shows the change in average tariffs, as well as median tariff cuts. Over half of goods (50.6 percent) would face a tariff cut under RCEP relative to GSP and amongst those goods, the median cut is 5.1 percentage points, an important change in tariff rates.

Figure 1: Distribution of GSP to ASEAN Tariff Cuts



Note: Covers all goods included in Japan-ASEAN schedule. MFN tariffs used for goods not eligible under Japan's GSP.
Source: WTO Tariff Database; CEA Calculations

⁴ Note that throughout this analysis we use HS 6-digit tariff codes to compare the tariff schedules.

⁵ Not all goods covered under the Japan-ASEAN tariff schedule are GSP-eligible. We apply MFN tariffs to these non-GSP-eligible categories.

Table 1: Summary of Tariff Changes with RCEP in Effect and No TPP

	Tariff Schedule		Average Tariff		Fraction of goods with tariff cut under RCEP proxy	Median Tariff Cut	
	Current	RCEP Proxy	Current	RCEP Proxy		All Goods	Goods where tariffs fall under RCEP Proxy
China	GSP*	Japan-ASEAN FTA	3.9%	1.4%	50.6%	0.4 p.p.	5.1 p.p.
United States	MFN	MFN	5.9%	5.9%	0.0%	0.0 p.p.	0.0 p.p.

Notes: Table only includes goods for which ASEAN tariff rates are available. Percentage point(s) denoted p.p.

*MFN for non-GSP eligible goods

Identifying At-Risk Industries

We categorize industries at risk of a negative impact on export orders in Japan as an example RCEP destination market and China as an example RCEP exporter according to three criteria:

- (i) Chinese exporting firms are likely to face reduced tariffs for that industry's goods under RCEP. Specifically, the goods category under Japan's current FTA with ASEAN has a lower tariff than Japan currently charges China under its Generalized System of Preferences.⁶
- (ii) China is a potential export competitor for these goods. In particular, China exports to any country in the same tariff category.⁷
- (iii) U.S. exporters currently export that industry's goods to Japan and China will receive better market access in Japan under RCEP than it has now. Specifically, the corresponding U.S. industry exported more than \$10 million to Japan under "at-risk" tariff lines according to criteria (i) and (ii) in 2015.⁸

Finally, we match the U.S. export categories identified as "at risk" with industries listed in the U.S. Bureau of Labor

Statistics Quarterly Census of Employment and Wages (QCEW) for information on how many jobs and business establishments are involved in the production of those goods for the industry as a whole.⁹ Since the industry categories in the QCEW are broader than the categories for U.S. exports, we also note in the results the percentage of related exports within each industry category that are actually at-risk.

The HS 6-digit level used to identify RCEP-impacted goods is not ideal insofar as each category may encompass a range of goods and we cannot discern whether the United States and China actually compete head-to-head in a particular good. However, tariff line codes are not always identical past the 6-digit level—making a perfect match extremely challenging and possibly noisy—and we take exports within an HS 6-digit category as indicative that there is potential for expansion in that category across the same goods that the United States exports.

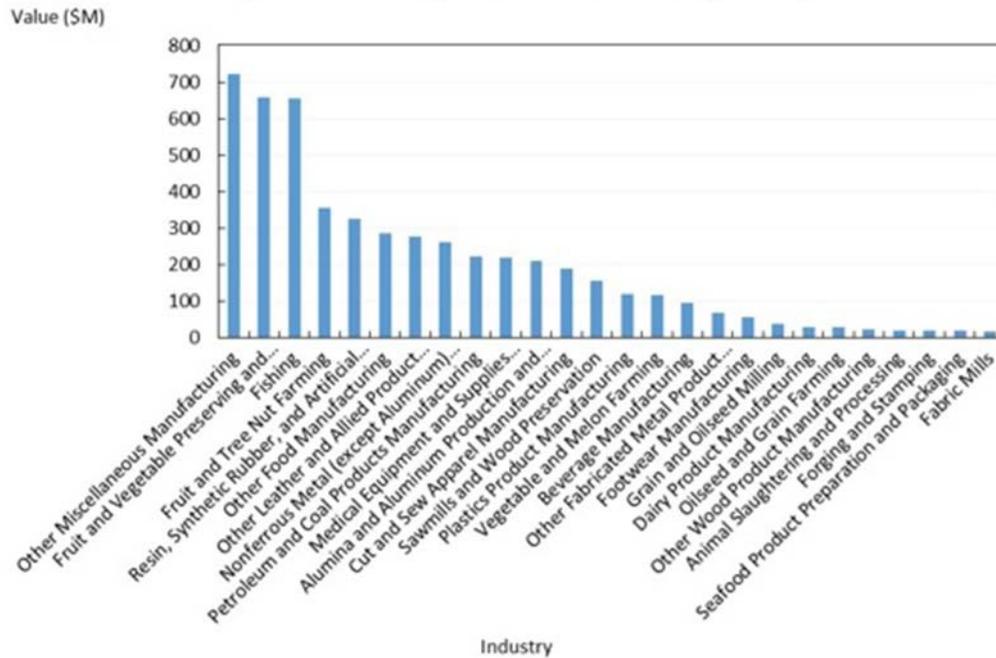
⁶ We use the (HS 6-digit) tariff schedules from the WTO tariff database and assume that any missing tariffs under Japan's GSP schedule are charged according to the MFN schedule. We convert all non-ad valorem tariffs to an ad valorem equivalent using unit values from the UN COMTRADE database.

⁷ Based on Chinese exports at the HS 6-digit level using data from the UN COMTRADE database.

⁸ We assume all HS 8- and 10-digit goods are at risk if the corresponding HS 6-digit ad valorem tariff is lower under the Japan-ASEAN FTA than under the GSP that China faces now.

⁹ QCEW contains industry information at the NAICS 4-digit level. 2015 concordance with HS codes available at <https://www.census.gov/foreign-trade/reference/codes/index.html#concordance>.

Figure 2: Value of Exports in "At-Risk" Goods by Industry



Source: TPIS; WTO Tariff Database; CEA calculations

At-Risk Industries

Figure 2 shows the U.S. goods-producing industries most vulnerable to improved market access for competitors in the Japanese market under an RCEP agreement in terms of the current value of exports to Japan.

Table A.1 in the Appendix lists the goods industries at risk of a negative impact from RCEP if TPP is not implemented, the number of U.S. jobs in each industry, and the level of exports to Japan. A wide variety of manufacturing industries, as well as farmers and food processors, are likely to suffer a negative impact if China receives improved market access in Japan but the United States does not.

The at-risk industries export a total of \$5.3 billion in goods to Japan, with a total of 4.7 million workers employed and 162,000 business establishments in these industries. Total U.S. goods exports to Japan were \$62.4 billion in 2015, suggesting that more than 8 percent of U.S. goods exports to Japan would face greater direct price pressure if China negotiates RCEP and the United States does not pass TPP.

This analysis provides a very conservative lower bound for overall impact, as discussed further below.

Other Pressures under RCEP

This is an extremely conservative assessment of which industries will feel the impact of RCEP and the level of export sales that may be affected for three reasons:

- First, we look only at goods exports, not including services exports, and only at tariff barriers. Petri and Plummer (2016) estimate that as much as 80 percent of the economic benefits of TPP arise from reductions in non-tariff and investment barriers. According to their model, roughly \$90 billion of annual benefits to the U.S. economy would come from TPP's reduction of non-tariff barriers alone.
- Second, we look only at Japan as a destination market. U.S. exports to RCEP members other than Japan with whom the United States does not currently have an FTA totaled nearly \$270 billion in 2015. We are overlooking the other overlapping RCEP-TPP members, two of which (Malaysia and Vietnam) still impose very high MFN tariffs across a wide array of U.S. exports and which are large, rapidly growing markets. Even though these two countries already have an FTA with China and with Japan separately, a new RCEP agreement is likely to grant additional forms of improved market access for members.

- Third, we look only at industries where China is likely to be a competitor, while there are more than a dozen other trading partners who also will enjoy some improved market access in Japan under RCEP. These include Korea, Australia, and New Zealand, who are strong competitors in the Japanese market across a range of manufacturing and agricultural goods. Matching more aggregate sectoral estimates of jobs supported by exports by industry to the industries we identified as “at-risk”, shown in Table A.2, we estimate that nearly one million of the 4.7 million jobs in these industries are related to global export activity.¹⁰

Finally, this analysis can only identify an industry as being at risk if the tariff that China currently faces in Japan is positive and higher than the proxy for the RCEP tariff. Some tariffs on imports from China into Japan are already zero, but can be raised, creating what Handley (2014) calls “trade policy uncertainty.” In a series of papers, Handley (2014), Handley and Limao (2015), Limao and Maggi (2015), Handley and Limao (2016), and Limao (2016), show that when changes in the status of a country’s trade agreements eliminate this uncertainty, countries see substantial investment and expansion by exporting firms. Thus, RCEP is likely to have the same effect on exporting firms in RCEP members, meaning additional U.S. industries are likely to face increased competition in RCEP markets whether or not TPP is passed. Since sunk costs make firms more sensitive to uncertainty when making investment decisions, exporting industries requiring more upfront capital and involving longer production lags are likely to be the most affected by the elimination of trade policy uncertainty.

The passage of RCEP in lieu of TPP may be a further headwind on growth in a number of these industries, wherever relatively high export shares have exposed them to the implications of dollar appreciation and slow global growth over the last two years.

¹⁰ See Table A.1 in ITA (2016a). We match the industries in this table as closely as possible to our NAICS-4 categories, using sectoral estimates for manufacturing and agriculture where a matched estimate of share of jobs supported by exports is not available in the report. This is not an ideal proxy, as not all of the jobs supported by exports in an industry as defined in this report are

Other Risks of Not Passing TPP

Another substantial risk of RCEP becoming the dominant trade agreement in Asia results from the way the rules of the road for trade in Asia will be structured. TPP enforces U.S. rules and values in a number of ways that would all be absent from an RCEP agreement. In particular, TPP institutes both environmental and labor standards which ensure that U.S. firms are not at a disadvantage when trading in Asia. TPP has strict rules on how state-owned enterprises may behave. And TPP protects digital trade and intellectual property for U.S. firms when they engage in Asia, facilitating exports for small businesses and tech firms and enabling U.S. producers of such products as farm equipment; automotive goods; information, computing, and technology (ICT); medical technologies; and others, to take full advantage of the embedded software and internet capacity many of these products now feature. An RCEP agreement would lack many of these rules and push trade in Asia in a different direction.

What rules of the road does TPP help shape? It provides for enforceable labor rights, including the right to form unions and engage in collective bargaining. The agreement prohibits trade in goods produced by forced labor and exploitative child labor. And it prohibits employment discrimination and requires laws for acceptable working conditions (hours, health and safety). All of these provisions help level the playing field for American workers and ensure the safety and rights of workers abroad—and partner countries can levy trade sanctions through TPP’s dispute settlement mechanisms when a TPP member is in violation.

The same enforceability applies to the environmental provisions of TPP, making a number of existing multilateral environmental agreements enforceable within the TPP membership that currently are not. The dispute mechanism provides new tools to enforce major multilateral environmental pacts, including the Convention on International Trafficking in Endangered Species (CITES), the International Convention for the

attributable to exports of the industry’s output, so exports in other industry categories not defined here as “at-risk” may be supporting some of these one million jobs related to export activity. However, exports by our identified industries may also support jobs in other industries, so the direction of any resulting bias is not obvious and we report only the rough estimate.

Prevention of Pollution from Ships, and the Montreal Protocol. The agreement prohibits harmful fisheries subsidies, illegal fishing, and illegal logging and controls the production, consumption, and trade of ozone depleting substances. Moreover, it prohibits countries from weakening environmental laws to attract investment, preventing a “race to the bottom” in environmental standards in the region that may occur if the United States does not help write the rules.

One of the most valuable new contributions that the TPP agreement makes to international trade law are new provisions to tackle non-market behavior by state-owned enterprises (SOEs). TPP requires nondiscriminatory treatment by member countries when regulating SOEs and private companies, enforceable provisions prohibiting SOEs that receive subsidies from undercutting private companies, and that member countries publish complete lists of national SOEs. The provisions also make SOEs subject to national laws and intellectual property rights enforcement.

TPP goes a long way toward facilitating trade in services and ensuring sensible intellectual property protections. It prevents countries from being able to force digital service providers to locate their servers in the destination market and bans forced technology transfers including source codes and proprietary algorithms. The agreement ensures that flows of digital goods like music, video, software, and games remain duty-free and enables and protects cross-border data flows by explicitly authorizing data encryption and virtual private networks and providing copyright safe harbors for Internet Service Providers.

The TPP agreement creates a more favorable business environment for small and medium-sized enterprises (SMEs) already engaged in exporting or that want to begin exporting. It goes to great lengths to streamline customs procedures and requires publication of all customs and trade-related forms and paperwork online, meaning less paperwork, advance rulings on valuation, customs documents easily accessible at low cost, and fewer delays and barriers to express shipments. It ensures transparency in regulations and sensible investor-state dispute settlement procedures to ensure nondiscriminatory treatment of American firms, large and small, that are selling goods and services in TPP member countries. The provisions to promote digital and services trade will help entrepreneurs engaged in e-

commerce market their products more easily abroad. And the agreement stipulates that countries will establish websites to help SMEs understand and take advantage of TPP provisions.

Without TPP, trade in Asia will likely evolve in a very different manner, one less consistent with U.S. values and one that may leave U.S. firms at a disadvantage. Thus, the workers and firms producing the more than \$225 billion dollars of goods and services exports that currently go to TPP members that would become part of RCEP—could be at risk of increased pressures if the rules of global trade evolve in a way that is less consistent with U.S. rules and values.

Industries Most Likely to Suffer Foregone Opportunities

Many U.S. industries exported heavily to TPP countries in 2015. Regardless of whether they exported to a TPP member with whom the United States does or does not have an existing FTA in force, the expanded provisions of the TPP agreement will benefit them as it reduces customs frictions, harmonizes a range of standards, makes an array of rules more transparent, and strengthens protections for e-commerce and digital trade. These industries are listed in Table A.3 in the Appendix below, along with the number of U.S. jobs and business establishments in the industry as a whole. Table A.4 lists how many of these jobs and business establishments are located in each of the 50 states.

Tables A.3-A.4 (in the Appendix) demonstrate three key points:

- Nearly 12 million jobs and 360,000 business establishments in U.S. industries export more than \$1 billion each year in goods to TPP countries. This does not include services exports, so underestimates the full scope of industries that are very likely to benefit from implementation of TPP.
- The range of goods exported to TPP countries in the roughly 80 industries encompasses a wide swath of the U.S. economy, stretching across both the manufacturing and the agricultural sectors.
- U.S. industries that export heavily to TPP countries have business establishments and employ thousands of workers across every state.

Further, it is worth noting that U.S. industries who send more than 50 percent of their goods exports to TPP countries employ more than 8 million workers in nearly 250,000 business establishments.

While identified with a very simple, straightforward methodology, the detailed industries highlighted here in Tables A.3 and A.4 roughly match broader industry categories discussed in the independent International Trade Commission's assessment of TPP as being likely to benefit from the Trans-Pacific Partnership, including the automotive industry, chemicals, dairy, fruits and nuts, food processing, apparel, and others (USITC 2016). This brief merely highlights which industries already are exporting heavily to the TPP countries without using a detailed general equilibrium model, and breaks them down at the NAICS-4 level to match them with jobs and business establishments by state.

Forgone Opportunity to Boost Growth

If TPP does not pass, it would also pose other opportunity costs on U.S. and global growth. Both the IMF (2016) and the OECD (2016) warned in October that a slowing in the growth of trade flows, particularly in intermediate inputs, may dampen both global productivity and GDP growth. Economists have observed that enhanced market access under agreements like TPP often induce firms to invest more in improved technologies and varieties, so failure to implement the agreement may shut the door on these new incentives to boost productivity and investment in the United States.¹¹

Failure to pass TPP may also prevent unique opportunities for access to export markets by small and medium-sized enterprises. TPP is the first FTA that dedicates a separate chapter on SMEs, and besides eliminating over 18,000 tariffs on U.S. products, it also includes provisions to establish an online platform and an SME committee to enhance transparency and awareness of exporting procedures. Its far-reaching provisions to streamline customs and shipping procedures, standardize and make transparent phytosanitary and patenting rules, and to enhance e-commerce all make it easier for SMEs to expand their

reach among consumers in the TPP countries. 98 percent of America's roughly 300,000 exporting firms are SMEs.

A variety of studies have shown that exporters pay workers up to 18 percent more on average than non-exporting firms; thus, preventing these new opportunities for firms means fewer opportunities for higher-paying jobs in the U.S. economy.

Conclusion

In summary, the stakes involved in passage of TPP are high. There are, conservatively, 35 goods-producing industries directly at risk of increased competitive pressure from China in the Japanese market if RCEP goes into effect, taking this one country pair as an example of what may happen to market access in the 16 countries currently engaged in RCEP negotiations. These 35 industries account for just under 10 percent of total U.S. exports of goods to Japan. These industries employ close to 5 million workers and maintain 162,000 business establishments in the United States. There are a number of reasons why this does not capture all of the industries whose exports will come under pressure, and many are already under pressures from headwinds in the broader global economy. Passing TPP can help ensure they have a fair shot if RCEP goes into effect.

Further, even if RCEP does not go into effect, U.S. businesses and consumers would forgo significant economic benefits if TPP does not pass. For example, 78 manufacturing, agricultural, and fishing industries export heavily to Japan, making them likely to benefit directly from increased market access under TPP through reduced tariff or non-tariff barriers. We also show that these industries maintain a total of 360,000 business establishments and employ close to 12 million workers across all 50 states.

Finally, not passing TPP is likely to prevent new, market-based incentives to boost productivity growth and investment while at the same time lowering taxes faced by U.S. firms abroad and U.S. consumers at home. Not passing TPP has the potential to set trade and economic activity in the Pacific Rim on a very different path that diverges from the U.S. vision of supporting worker rights,

¹¹ See Bergstrand (2016) for a description of related benefits that are difficult to quantify in standard economic models.

environmental protections, small businesses, a secure digital economy, and a level playing field for competition.

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Appendix A: Tables

Table A.1: U.S. Export Industries at Risk of Negative Impact from RCEP Implementation in Japan

U.S. Industry	NAICS code	Industry Exports to Japan in At-Risk Goods	Total Industry Exports to Japan	Fraction of Industry Exports to Japan at Risk	U.S. Business Establishments in the Industry	Jobs in the Industry
Other Miscellaneous Manufacturing	3399	\$720.2M	\$1311.4M	54.9%	19,028	281,119
Fruit and Vegetable Preserving and Specialty Food Manufacturing	3114	\$658.0M	\$780.0M	84.4%	2,176	171,510
Fishing	1141	\$654.2M	\$830.8M	78.7%	2,077	2,639
Fruit and Tree Nut Farming	1113	\$356.8M	\$797.9M	44.7%	12,655	201,141
Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manuf.	3252	\$325.1M	\$1103.1M	29.5%	1,578	93,451
Other Food Manufacturing	3119	\$286.8M	\$404.7M	70.9%	4,656	195,928
Other Leather and Allied Prod. Manuf.	3169	\$277.6M	\$277.7M	99.9%	805	8,547
Nonferrous Metal (except Aluminum) Production and Processing	3314	\$262.8M	\$1383.7M	19.0%	1,020	58,040
Petroleum and Coal Products Manuf.	3241	\$222.7M	\$613.8M	36.3%	2,369	109,821
Medical Equipment and Supplies Manufacturing	3391	\$219.3M	\$3358.1M	6.5%	12,753	316,996
Alumina/Aluminum Prod. and Proc.	3313	\$212.0M	\$234.0M	90.6%	658	56,610
Cut and Sew Apparel Manuf.	3152	\$188.3M	\$194.9M	96.6%	6,003	108,185
Sawmills and Wood Preservation	3211	\$155.4M	\$291.7M	53.3%	3,569	90,728
Plastics Product Manufacturing	3261	\$119.0M	\$644.0M	18.5%	11,093	549,863
Vegetable and Melon Farming	1112	\$118.1M	\$134.5M	87.8%	4,875	100,885
Beverage Manufacturing	3121	\$94.9M	\$352.2M	27.0%	8,529	152,117
Other Fabricated Metal Product Manuf.	3329	\$68.1M	\$801.7M	8.5%	7,038	275,034
Footwear Manufacturing	3162	\$55.5M	\$71.1M	78.0%	279	11,118
Grain and Oilseed Milling	3112	\$37.1M	\$535.5M	6.9%	975	56,886
Dairy Product Manufacturing	3115	\$28.6M	\$274.2M	10.4%	2,045	136,484
Oilseed and Grain Farming	1111	\$27.9M	\$3901.3M	0.7%	12,085	55,140
Other Wood Product Manufacturing	3219	\$24.2M	\$36.1M	67.1%	9,357	214,745

U.S. Industry	NAICS code	Industry Exports to Japan in At-Risk Goods	Total Industry Exports to Japan	Fraction of Industry Exports to Japan at Risk	U.S. Business Establishments in the Industry	Jobs in the Industry
Animal Slaughtering and Processing	3116	\$20.0M	\$3023.4M	0.7%	4,030	487,582
Forging and Stamping	3321	\$20.0M	\$26.6M	75.4%	2,381	99,303
Seafood Product Prep. and Packaging	3117	\$19.8M	\$20.5M	96.5%	835	35,732
Fabric Mills	3132	\$17.7M	\$100.0M	17.7%	1,125	53,505
Sugar and Confectionery Prod. Manuf.	3113	\$16.8M	\$135.1M	12.4%	2,067	70,621
Veneer, Plywood, and Engineered Wood Product Manufacturing	3212	\$16.4M	\$19.2M	85.2%	1,603	73,067
Apparel Accessories and Other Apparel Manuf.	3159	\$16.0M	\$28.8M	55.7%	718	8,694
Forest Nurseries and Gathering of Forest Products	1132	\$15.9M	\$17.9M	89.0%	304	2,158
Boiler, Tank, and Shipping Container Manufacturing	3324	\$14.7M	\$98.3M	15.0%	2,014	96,134
Textile Furnishings Mills	3141	\$13.6M	\$22.7M	59.7%	1,950	52,027
Other Textile Product Mills	3149	\$13.5M	\$41.1M	32.9%	4,868	62,896
Architectural and Structural Metals Manufacturing	3323	\$10.8M	\$28.5M	38.0%	14,589	368,980
Leather and Hide Tanning and Finishing	3161	\$10.6M	\$11.6M	91.4%	260	3,164
TOTAL		\$5,318.6M			162,367	4,660,850

Table A.2: U.S. Jobs in Industries at Risk of Negative Impact from RCEP Implementation in Japan

U.S. Industry	NAICS code	Share of Industry Employment Supported by Exports	Estimated Number of Jobs Supported by Global Export Activity (not just to TPP countries)
Other Misc. Manuf. (incl. toys, silverware, office supplies, caskets, sports equip.)	3399	23%	64,657
Fruit and Vegetable Preserving and Specialty Food Manufacturing	3114	12%	20,581
Fishing	1141	24%	633
Fruit and Tree Nut Farming	1113	24%	48,274
Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manuf.	3252	25%	23,363
Other Food Manufacturing	3119	12%	23,511
Other Leather and Allied Prod. Manuf.	3169	11%	940
Nonferrous Metal (except Aluminum) Production and Processing	3314	37%	21,475
Petroleum and Coal Products Manuf.	3241	23%	25,259
Medical Equipment and Supplies Manufacturing	3391	23%	72,909
Alumina/Aluminum Prod. and Proc.	3313	37%	20,946
Cut and Sew Apparel Manuf.	3152	11%	11,900
Sawmills and Wood Preservation	3211	16%	14,516
Plastics Product Manufacturing	3261	25%	137,466
Vegetable and Melon Farming	1112	24%	24,212
Beverage Manufacturing	3121	12%	18,254
Other Fabricated Metal Product Manuf.	3329	27%	74,259
Footwear Manufacturing	3162	11%	1,223
Grain and Oilseed Milling	3112	12%	6,826
Dairy Product Manufacturing	3115	12%	16,378
Oilseed and Grain Farming	1111	24%	13,234
Other Wood Product Manufacturing	3219	16%	34,359
Animal Slaughtering and Processing	3116	12%	58,510
Forging and Stamping	3321	27%	26,812
Seafood Product Prep. and Packaging	3117	12%	4,288
Fabric Mills	3132	25%	13,376
Sugar and Confectionery Prod. Manuf.	3113	12%	8,475
Veneer, Plywood, and Engineered Wood Product Manufacturing	3212	16%	11,691
Apparel Accessories and Other Apparel Manuf.	3159	11%	956
Forest Nurseries and Gathering of Forest Products	1132	24%	518
Boiler, Tank, and Shipping Container Manufacturing	3324	27%	25,956
Textile Furnishings Mills	3141	25%	13,007

U.S. Industry	NAICS code	Share of Industry Employment Supported by Exports	Estimated Number of Jobs Supported by Global Export Activity (not just to TPP countries)
Other Textile Product Mills	3149	25%	15,724
Architectural and Structural Metals Manufacturing	3323	27%	99,625
Leather and Hide Tanning and Finishing	3161	11%	348
TOTAL			954,462

Table A.3: US Industries that Export More than \$1 Billion to TPP countries

NAICS code	Industry Title	US Exports to TPP Countries (\$Billions)	Business Establishments	Employment
3363	Motor Vehicle Parts Manufacturing	43.12	5,652	564,992
3364	Aerospace Product and Parts Manufacturing	34.75	3,221	485,920
3241	Petroleum and Coal Products Manufacturing	33.30	2,369	109,821
3361	Motor Vehicle Manufacturing	32.36	490	172,375
3341	Computer/Peripheral Equipment and Manuf.	28.55	1,729	157,764
3344	Semiconductor/ Other Electronic Comp. Manuf.	24.09	5,661	367,989
3251	Basic Chemical Manufacturing	22.72	3,098	149,173
3252	Resin, Synth. Rubber, Synth. Fibers, Fil Manuf.	17.82	1,578	93,451
3345	Navigational, Measuring, Electromed. Manuf.	17.68	8,081	402,267
3339	Other General Purpose Mach. Manuf.	17.53	6,947	266,964
3331	Agriculture, Construction, and Mining Machinery Manufacturing	16.44	4,118	235,681
3342	Communications Equipment Manufacturing	16.33	2,294	88,152
3359	Other Electrical Equipment and Component Manufacturing	15.89	2,945	130,040
3261	Plastics Product Manufacturing	15.40	11,093	549,863
2111	Oil and Gas Extraction	14.78	9,573	192,509
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	14.38	1,253	97,574
3329	Other Fabricated Metal Product Manufacturing	13.98	7,038	275,034
3254	Pharmaceutical and Medicine Manufacturing	12.28	3,515	289,943
3391	Medical Equipment and Supplies Manufacturing	12.08	12,753	316,996
3353	Electrical Equipment Manufacturing	11.41	2,888	146,205
3362	Motor Vehicle Body and Trailer Manufacturing	10.75	2,065	148,097
1111	Oilseed and Grain Farming	10.64	12,085	55,140
3311	Iron and Steel Mills and Ferroalloy Manufacturing	10.57	888	85,354
3116	Animal Slaughtering and Processing	10.37	4,030	487,582
3399	Other Miscellaneous Manufacturing	10.17	19,028	281,119
3314	Nonferrous Metal (except Aluminum) Production and Processing	7.91	1,020	58,040
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	7.86	2,842	104,875
3262	Rubber Product Manufacturing	7.49	2,096	132,498
3222	Converted Paper Product Manufacturing	7.25	4,739	249,820
3343	Audio and Video Equipment Manufacturing	6.77	728	15,759
3112	Grain and Oilseed Milling	6.08	975	56,886

NAICS code	Industry Title	US Exports to TPP Countries (\$Billions)	Business Establishments	Employment
3221	Pulp, Paper, and Paperboard Mills	5.87	792	99,661
3332	Industrial Machinery Manufacturing	5.62	3,972	111,408
1113	Fruit and Tree Nut Farming	5.62	12,655	201,141
3313	Alumina and Aluminum Production and Processing	5.51	658	56,610
3119	Other Food Manufacturing	5.30	4,656	195,928
3352	Household Appliance Manufacturing	5.28	524	46,011
3334	Ventilation, Heating, Air-Conditioning, Commercial Refrigeration Equipment Manuf.	4.68	2,295	127,608
2122	Metal Ore Mining	4.43	426	36,212
3259	Other Chemical Product and Preparation Manufacturing	4.20	2,875	81,773
3253	Pesticide, Fertilizer, Agr. Chemical Manuf.	4.14	1,209	36,133
3114	Fruit/Vegetable Preserv./Specialty Food Manuf.	4.07	2,176	171,510
3335	Metalworking Machinery Manufacturing	4.07	8,588	182,594
3132	Fabric Mills	3.55	1,125	53,505
3231	Printing and Related Support Activities	3.48	29,255	449,964
3121	Beverage Manufacturing	3.38	8,529	152,117
1112	Vegetable and Melon Farming	3.29	4,875	100,885
3333	Commercial/ Service Industry Mac. Manuf.	3.27	2,771	88,269
3255	Paint, Coating, and Adhesive Manufacturing	3.25	2,121	62,130
3152	Cut and Sew Apparel Manufacturing	3.05	6,003	108,185
3115	Dairy Product Manufacturing	2.97	2,045	136,484
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	2.79	22,782	367,946
3272	Glass and Glass Product Manufacturing	2.64	1,951	80,572
3324	Boiler, Tank, Shipping Container Manuf.	2.60	2,014	96,134
3365	Railroad Rolling Stock Manufacturing	2.60	345	23,493
3371	Household/ Instit. Furniture/ Kitch. Cab. Manuf.	2.39	13,060	238,117
1119	Other Crop Farming	2.25	9,923	63,973
3325	Hardware Manufacturing	2.21	673	23,124
1141	Fishing	2.15	2,077	2,639
3113	Sugar and Confectionery Product Manuf.	2.02	2,067	70,621
3346	Manufact./Reproducing Magnetic Optical Media	1.99	790	12,442
3351	Electric Lighting Equipment Manufacturing	1.88	1,503	41,411
3322	Cutlery and Handtool Manufacturing	1.78	1,372	37,002

NAICS code	Industry Title	US Exports to TPP Countries (\$Billions)	Business Establishments	Employment
3279	Other Nonmetallic Mineral Product Manufacturing	1.67	3,526	73,333
3118	Bakeries and Tortilla Manufacturing	1.63	13,282	301,291
3169	Other Leather and Allied Product Manufacturing	1.62	805	8,547
3211	Sawmills and Wood Preservation	1.62	3,569	90,728
3323	Architectural/ Structural Metals Manufacturing	1.53	14,589	368,980
3111	Animal Food Manufacturing	1.48	2,151	53,004
3369	Other Transportation Equipment Manufacturing	1.48	1,032	29,794
3141	Textile Furnishings Mills	1.38	1,950	52,027
3366	Ship and Boat Building	1.33	1,826	126,363
3372	Office Furniture (including Fixt) Manufacturing	1.29	3,712	102,012
3326	Spring and Wire Product Manufacturing	1.25	1,361	42,900
2121	Coal Mining	1.22	1,066	58,957
3271	Clay Product and Refractory Manufacturing	1.18	1,453	37,236
3133	Textile/ Fabric Finishing/ Fabric Coating Mills	1.13	1,348	31,026
2123	Nonmetallic Mineral Mining and Quarrying	1.06	5,801	67,505

Table A.4 answers the questions, “For U.S. industries that export heavily to TPP countries, how many of their workers are employed in each state? How many business establishments do they maintain in each state?” It shows that the number of business establishments in these industries varies from hundreds to thousands in every part of the country.

Table A.4: Jobs and firm numbers for industries that Export over 50% to TPP countries or export over \$1 billion to TPP countries

Area Title	Jobs in U.S. industries that ship over 50% of their exports to TPP countries	Jobs in U.S. industries that export over \$1 billion to TPP countries	Number of firms in U.S. industries that ship over 50% of their exports to TPP countries	Number of firms in U.S. industries that export over \$1 billion to TPP countries
Alabama	180,886	230,394	3,905	4,750
Alaska	18,314	8,442	520	557
Arizona	84,468	160,539	3,057	4,601
Arkansas	119,714	144,619	2,387	3,579
California	763,788	1,362,777	27,657	46,571
Colorado	94,090	133,606	4,347	6,161
Connecticut	76,035	133,873	3,162	4,164
Delaware	15,797	23,840	518	781
District of Columbia	428	540	107	141
Florida	215,806	336,883	13,753	18,822
Georgia	268,793	347,892	7,033	9,315
Hawaii	11,499	15,717	863	1,087
Idaho	39,167	59,256	1,843	3,059
Illinois	415,091	535,490	13,460	18,597
Indiana	384,338	471,603	6,379	8,283
Iowa	157,538	193,014	3,641	4,562
Kansas	95,407	151,223	2,639	4,027
Kentucky	177,598	222,491	3,232	4,572
Louisiana	82,560	139,650	3,497	5,051
Maine	24,510	42,055	1,303	2,032
Maryland	57,834	92,423	2,408	3,509
Michigan	462,579	544,468	10,681	14,537
Minnesota	203,392	290,918	5,840	8,058
Mississippi	95,171	125,992	1,889	2,782
Missouri	160,720	218,975	4,703	6,633
Montana	12,959	21,363	1,111	1,608
Nebraska	72,143	88,827	1,704	2,759
Nevada	38,019	49,375	1,481	2,061

Area Title	Jobs in U.S. industries that ship over 50% of their exports to TPP countries	Jobs in U.S. industries that export over \$1 billion to TPP countries	Number of firms in U.S. industries that ship over 50% of their exports to TPP countries	Number of firms in U.S. industries that export over \$1 billion to TPP countries
New Hampshire	35,633	60,544	1,325	1,892
New Jersey	133,309	225,800	5,971	8,564
New Mexico	18,273	31,617	1,379	2,110
New York	275,596	431,906	12,364	16,858
North Carolina	323,649	414,002	7,954	10,199
North Dakota	18,751	23,189	812	1,514
Ohio	509,292	628,331	11,652	14,413
Oklahoma	121,489	146,023	4,595	5,492
Oregon	108,762	167,361	4,189	6,826
Pennsylvania	405,801	519,107	10,586	13,596
Rhode Island	14,069	31,321	1,037	1,519
South Carolina	170,148	219,914	3,639	5,042
South Dakota	27,535	36,073	841	1,317
Tennessee	241,559	304,358	4,554	5,889
Texas	663,346	921,847	20,765	28,901
Utah	67,411	115,629	2,734	3,824
Vermont	14,920	26,143	728	1,077
Virginia	136,590	202,984	4,124	5,940
Washington	125,235	322,713	5,540	11,476
West Virginia	27,716	54,696	1,126	1,633
Wisconsin	345,835	415,032	6,814	8,712
Wyoming	8,478	21,073	686	924

Appendix B: Data

Trade data by HS 10-digit goods category and NAICS 4-digit industry category from U.S. Census Bureau via TPIS.

2015 concordance between HS 10-digit and NAICS 4-digit available at

<https://www.census.gov/foreign-trade/reference/codes/index.html#concordance>

Data for employment and business establishments from the U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages (“CSVs by Industry, 2015 Annual Averages” <http://www.bls.gov/cew/datatoc.htm>)

Data for tariff schedules from World Trade Organization tariff download facility (Choose “Japan” in the country field and “select all” in the products field <http://tariffdata.wto.org/ReportersAndProducts.aspx>.)