

THE ECONOMIC BENEFITS OF INTELLECTUAL PROPERTY RIGHTS IN THE TRANS-PACIFIC PARTNERSHIP

EXECUTIVE SUMMARY

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ABSTRACT

Innovation fuels the U.S. economy. And the protection of intellectual property (IP) is what fuels innovation. The report quantifies the impact that IP-intensive manufacturing industries would have on the economic growth created by a prospective Trans-Pacific Partnership (TPP). Our analysis shows that two-thirds of these economic benefits for the U.S. economy and the 11 partner countries would come from IP-intensive industries. As such, the stronger the protection of IP rights under the TPP, the greater the value of trade leading to greater economic growth, additional jobs created, higher incomes, and development across countries.

¹ The opinions and views expressed in this report are solely those of the authors.

HIGHLIGHTS OF THE REPORT

Innovation fuels the U.S. economy. And the protection of intellectual property (IP) — the ownership of ideas instead of physical assets — is what fuels innovation. For two years now, the United States has been negotiating with 11 other trading partners who also border the Pacific Ocean to create a comprehensive trade agreement known as the Trans-Pacific Partnership (TPP). These negotiations are set to conclude in the coming year.

The TPP would go well beyond the usual dismantling of tariffs and import quotas, and include a range of new and emerging issues that are assuming more and more importance in the 21st century. Among these are the protection of IP afforded through copyrights, patents, regulatory data safeguards, trademarks, and trade secrets. Innovation thrives when inventors and investors are rewarded for their efforts to develop new products and services that people want to buy, not when their ideas are stolen as soon as they go to market.

Expanding the legal framework that supports robust IP protections in the United States is crucial to the success of the TPP, whose members include some of the world's fastest-growing economies, and together have a combined gross domestic product of \$27.5 trillion — about 40 percent of the world economy. The twelve countries in a prospective TPP, which stretches from the Western Hemisphere to Asia, are Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States and Vietnam.

IP-intensive industries — those that rely far more heavily on IP than others — take up a vast swathe of the economy, and include pharmaceuticals, aerospace, computers and the software to run them, electronics, medical equipment, chemicals, and automobile manufacturing. These industries, in turn, have a far higher rate of innovative research and development. Not surprisingly, a host of studies have shown that these IP-intensive industries generate more skilled jobs, pay higher wages, and produce more than double the sales per employee of non-IP-intensive industries.

Trade policy is by its nature political, and over the years, virtually every country in the world has built up a labyrinth system of taxes and tariffs and import quotas and licenses to protect favored industries. Eliminating those taxes — removing a tariff on imported shoes, for example — and removing or at least lessening the burden of licensing and import quotas in competing markets, is the whole point of the dozens of free trade agreements now in place in the world among two or more countries.

This report quantifies the extent to which IP-intensive manufacturing industries have contributed to the additional economic growth that is a result of the ten free trade agreements (FTAs) already in effect between the United States and 16 other countries in five continents. Then, using the historical data, quantifies the impact that IP-intensive manufacturing industries would have on the economic growth created by a prospective TPP. Among our main findings:

- Innovation — the creation of something new or improved, or a new market practice — has made a significant contribution to the ten FTAs between the United States and other countries studied in this report. By eliminating tariffs and including IP provisions based on U.S. law and standards, these FTAs boosted manufacturing exports in IP-intensive industries by 10.9 percent and pharmaceuticals and medicines by 15 percent, compared to an average of 7.3 percent in all industries and just 3 percent in non-IP-intensive industries.
- Based on our findings about innovation and the existing FTAs, we estimate that the formation of the Trans-Pacific Partnership would increase U.S. manufacturing exports by \$26 billion and U.S. gross domestic product (GDP) by \$11 billion, and lead to the creation of as many as 48,000 additional jobs. Two-thirds of these economic benefits would come from IP-intensive industries.
- As market access increases and trade barriers fall around the world, foreign affiliates of U.S. firms play an ever-more important role, something that is especially true in IP-intensive industries. American manufacturing companies currently sell some \$424 billion worth of goods to their foreign affiliates, a figure that will increase by an additional \$8 billion if the TPP is concluded. Since more than two-thirds of affiliates sales are in IP-intensive industries — which rely on patents, trademarks, and trade secrets — IP protections based on current U.S. law need to be adopted to secure long-term economic growth.
- U.S. sales to foreign affiliates have a direct and positive spillover effect on local economies by adding jobs and physical assets. Assuming a finalized TPP maintains the same protections for intellectual property as currently exist under U.S. law, the creation of a trans-Pacific trade pact would produce combined benefits in the 11 other countries of \$27 billion in additional sales, \$6.4 billion in additional GDP, and 68,240 new jobs.

Our findings underscore the benefits of free trade areas where countries eliminate and reduce trade barriers. It is equally clear that strong IP protection is an essential requirement for innovation, which in turn is fundamental to economic growth. IP protections have not only enhanced economic growth, but also technology transfer, foreign direct investment, and localized innovation in countries across all levels of economic development.

The stronger the protection of IP rights under the TPP, the greater the value of trade and investment in IP-intensive industries. It is these industries that are in particular the engines of economic growth, higher wages and more jobs. We cannot invest in our future without them.

EXECUTIVE SUMMARY

Intellectual property (IP) rights are critically important to the economic success of a prospective Trans-Pacific Partnership (TPP) agreement. The United States is currently engaged in negotiations with 11 other countries (Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam); six of the TPP participants (Australia, Canada, Chile, Mexico, Peru, and Singapore) are already free trade partners with the United States. The negotiations seek to reduce both tariff and non-tariff barriers to trade in the Asia-Pacific region to promote greater economic integration. The conclusion of the TPP would create the most important free trade zone in the world. The combined GDP of the 12 TPP participants is nearly \$27.5 trillion, accounting for 38.3 percent of global GDP.

Implementation of a TPP agreement that truly integrates the region with broad and deep reductions in tariff and non-tariff barriers, and includes commitments to strong IP protections, would benefit all 12 signatories to the TPP agreement. A trade agreement that eliminates external tariffs and converges, harmonizes, and ideally homogenizes internal regulatory and commercial rules would reduce the costs of production, compliance, and information. The more people and factors of production subjected to the same rules, the greater the scope for specialization and economies of scale, which, in turn, leads to productivity growth, higher incomes, and improved living standards.

In this report, we quantify the economic impacts of TPP on 12 participants via exports and foreign direct investment. We estimate the formation of TPP will boost U.S. annual exports by between \$20.6 and \$26.2 billion, will contribute between \$9.0 and \$11.3 billion to U.S. GDP, and will create between 38,811 and 47,586 jobs. The spillover effects of U.S. companies' exports to their foreign affiliates in the other 11 TPP countries are more than \$26.9 billion in additional sales, \$6.4 billion in additional GDP, and 68,240 jobs. More than two-thirds of these benefits come from IP-intensive industries that rely heavily on IP rights.

Impact of Innovation and IP Rights on U.S. Economy and Trading Partners

Innovation is fundamental to economic growth. It requires, among other things, a legal environment that strongly supports the protection of intellectual property rights. As shown in our previous studies, IP-intensive industries (those that invest more on R&D per employee than the national average) outperform non-IP-intensive industries across all economic measures.²

Our empirical studies estimate that IP creates 19 million direct jobs and supports 55 million direct and indirect jobs in the United States. In addition, we find that IP-intensive manufacturing industries, led by the pharmaceutical industry, create both high- and low-skilled jobs and provide nearly 60 percent greater compensation to their employees than non-IP-intensive industries. Both

² IP-intensive industries in the manufacturing sector are petroleum and coal product manufacturing (NAICS 324), chemicals (NAICS 325), computer and electronic products (NAICS 334), transportation equipment (NAICS 336), and medical equipment (NAICS 3391). The pharmaceutical industry (NAICS 3254) is a subset of the chemical sector.

output and sales per employee in IP-intensive manufacturing industries more than double those of non-IP-intensive manufacturing industries. With such a large productivity advantage over non-IP-intensive industries, IP-intensive manufacturing industries account for approximately 60 percent of U.S. manufacturing exports.³

The important contributions of IP protection to economic growth are evident not only in the U.S. economy but across countries at different stages of economic development. Indeed, empirical studies support the existence of a positive relationship between IP rights and innovation, and between innovation and economic growth. A World Bank study finds that a 20 percent increase in the number of patents granted annually was associated with a 3.8 percent increase in the output of 92 countries during 1960-2000.⁴ Another study, relying on datasets of 80 countries, shows that strong IP protection induced greater gains in low-income countries than in high-income countries.⁵

Studies have generally found that developing countries that strengthen their patent protections spur technology transfer as well as localized innovation.⁶ Moreover, strong IP protection attracts foreign direct investment (FDI). An OECD report finds that a 1 percent change in the strength of a country's IP protection framework is associated with a 2.8 percent increase in FDI inflows and a 0.7 percent increase in domestic R&D.⁷

Using the International Property Rights Index⁸ and data on outward U.S. FDI to 53 developed and developing countries in 2010, we find that higher levels of IP protection attract greater amounts of FDI. Moreover, our results show that higher levels of IP protection attract a greater amount of FDI in IP-intensive industries than in non-IP-intensive industries. For example, U.S. FDI in foreign chemical industries (an IP-intensive industry) is 3.7 times greater than average FDI in foreign manufacturing overall.

In addition to attracting FDI, IP protection ties the fortunes of local firms to larger U.S. companies. Our results show that sales between foreign affiliates and U.S. parent companies are higher in IP-intensive industries than in non-IP-intensive industries. Indeed, during 1999-2010, the ratio of foreign affiliate sales to U.S. parent company sales in IP-intensive manufacturing industries was 0.50, versus 0.43 in non-IP-intensive industries. The ratio of foreign affiliate sales to U.S. parent

³ Pham, Nam. 2010. "The Impact of Innovation and the Role of Intellectual Property on U.S. Productivity, Competitiveness, Jobs, Wages, and Exports." NDP Consulting; and Pham, Nam. 2012. "IP Creates Jobs for America." NDP Consulting.

⁴ Chen, Derek H.C., and Carl Dahlman. 2004. "Knowledge and Development: A Cross-Section Approach." World Bank Policy Research Working Paper No. 3366.

⁵ Falvey, Rod, Neil Foster, and David Greenway. 2004. "Intellectual Property Rights and Economic Growth." Research Paper 2004/12, University of Nottingham.

⁶ Dutz, Mark, Antara Dutta, and Jonathan Orszag. 2009. "Intellectual Property and Innovation: New Evidence on the Relationship Between Patent Protection, Technology Transfer and Innovation in Developing Countries." CompassLexecon.

⁷ Cavazos, R. et al. 2010. Policy Complements to the Strengthening of IPRs in Developing Countries, OECD Trade Policy Working Papers, No. 104, OECD Publishing.

⁸ Tiwari, Gaurav. 2012. "International Property Rights Index." Report prepared for the Property Rights Alliance.

companies in the pharmaceutical industry was 0.58 in 2010, or 58 cents for every dollar of corresponding U.S. parent company sales.

Effects of Innovation and IP Rights on U.S. FTAs

In addition to strengthening domestic markets, innovation improves U.S. competitiveness in global markets. Nearly two-thirds of U.S. exports during 2000-12 were IP-intensive products—including chemicals, transportation equipment, and computer and electronics. As shown in our previous studies, innovation promotes U.S. exports, with the annual value of exports per employee in IP-intensive industries 3.4 times greater than in non-IP-intensive industries.

As of October 2013, the United States has concluded 14 preferential trade agreements with 20 other developed and developing countries in the Americas, North Africa, the Middle East, and Asia. As shown in previous U.S. FTAs, the reduction and elimination of tariffs leads to increased exports, which consequently increases output, employment, and wages in the exporting countries. In this report, we use available data for 16 countries under 10 previous trade agreements—from the North America Free Trade Agreement (NAFTA) in 1994 through the US-Peru trade promotion agreement in 2009—to estimate the impact of IP on U.S. exports.

Our results indicate that previous FTAs boosted U.S. manufacturing exports by an average of 7.3 percent after the trade agreements entered into force. Our results also show that IP-intensive manufacturing industries have stronger trade effects than non-IP-intensive industries. Previous FTAs raised annual exports of IP-intensive U.S. manufacturing industries by 10.9 percent and annual exports of the U.S. pharmaceuticals and medicines industry by 15.0 percent. In contrast, exports of non-IP-intensive industries to those 16 FTA countries rose by only 3.0 percent.⁹

Economic Impact of Innovation and IP Rights on TPP Countries

Our analytical framework applies the previous FTA effects to a set of assumptions to quantify the economic impacts of TPP on the United States and its 11 trading partners. Our analysis makes the following assumptions: that the TPP agreement will reflect IP rights and protections afforded under current U.S. law; that existing tariffs in the TPP's five non-FTA members will also be eliminated; and that the TPP agreement will achieve a 50 percent reduction in non-tariff barriers, such as IP infringement, discriminatory product standards, subsidies to local industry, buy-local or local-content provisions, and other behind-the-border impediments to international commerce.

As with previous preferential trade agreements, the elimination and reduction of tariff and non-tariff barriers is expected to increase the value of U.S. exports to other TPP countries. We estimate the implementation of TPP will raise annual U.S. manufacturing exports by between \$20.6 billion (base case) and \$26.2 billion (high case). The elimination of tariffs with the five non-FTA countries will raise U.S. exports by \$5.6- \$11.2 billion, with most of the gains occurring in IP-intensive industries. The 50 percent reduction in non-tariff barriers will generate another \$15.0 billion in U.S. exports--

⁹ We use 2012 export data to normalize trade effects across 16 countries in 10 FTAs during 1994-2012.

\$8.7 billion from IP-intensive industries and \$6.2 billion from non-IP-intensive industries. The U.S. economy is expected to add between 38,811 and 47,586 new jobs, with additional annual wage increases of between \$2.2 and \$2.7 billion. U.S. GDP would rise by between \$9.0 and \$11.3 billion.

Based on the current relationship between U.S. parent companies and their foreign affiliates, we estimate that the implementation of the TPP will generate an additional \$8.0 billion in sales of U.S. parent companies to their foreign affiliates. Consequently, foreign affiliates will generate additional sales of \$26.9 billion, boost local GDP by \$6.4 billion, provide \$2.6 billion in additional employee compensation, and create 68,240 new jobs.

Summary Table. Economic Benefits of TPP on 12 Participants

Panel 1. The United States

	Manufacturing Industries	IP-intensive Industries	Non-IP-intensive Industries
Additional Exports (\$ millions)	\$20,607.4 ~ \$26,218.0	\$13,461.6 ~ \$18,185.2	\$7,145.8 ~ \$8,032.8
Additional Value-Added (\$ millions)	\$8,963.2 ~ \$11,343.2	\$5,588.9 ~ \$7,550.0	\$3,374.3 ~ \$3,793.2
Additional Wages (\$ millions)	\$2,161.5 ~ \$2,693.5	\$1,162.8 ~ \$1,570.8	\$998.7 ~ \$1,122.7
Additional Employment	38,811 ~ 47,586	17,451 ~ 23,575	21,360 ~ 24,011

Panel 2. Other 11 Participants

	Additional Market Access to Mfg. U.S. Parent Companies (\$ millions)	Additional Mfg. Sales of Foreign Affiliates (\$ millions)	Additional Mfg. Value-Added of Foreign Affiliates (\$ millions)	Additional Employees in Foreign Affiliates	Additional Wages Paid to Foreign Affiliate Workers (\$ millions)
Australia	161.5	1,039.9	248.0	2,047	151.4
Brunei	4.8	25.0	6.0	30	3.2
Canada	857.5	2,402.2	572.9	4,525	241.2
Chile	69.1	82.7	19.7	318	7.6
Japan	2,935.9	13,107.8	3,125.9	16,744	1,504.5
Malaysia	543.3	3,630.5	865.8	10,505	182.7
Mexico	3,052.1	5,376.6	1,282.2	29,358	457.1
New Zealand	109.7	369.2	88.0	958	40.3
Peru	85.5	76.9	18.3	231	5.8
Singapore	14.1	145.3	34.7	73	4.0
Vietnam	129.1	674.3	160.8	3,451	39.6
11 TPP Countries	7,962.5	26,930.4	6,422.3	68,240	2,637.4

Our analysis demonstrates the importance of IP-intensive industries to the United States and its TPP partner countries. The economic gains, job growth, and value-added to these 12 economies are mainly the direct results of increased activity in IP-intensive industries, which are likely to thrive and spawn local benefits in an environment with strong IP protection. We estimate approximately two-thirds of the annual benefits come from IP-intensive industries. These economic gains will not be realized in the TPP, or in future free trade agreements, without strong IP rights.