

The Trans-Pacific Partnership:

The Economic Implications for Maine

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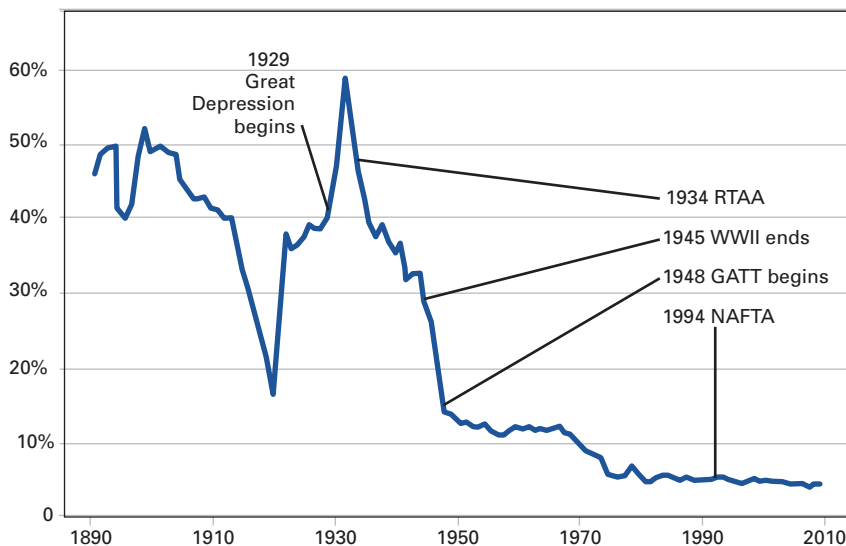
The Trans-Pacific Partnership (TPP) is a free-trade agreement (FTA) between 12 Pacific-Rim countries. If passed, it would be the largest FTA in which the United States participates. Catherine Reilly deLutio and Philip Trostel assess the potential impact of the TPP's tariff reductions and quota increases on Maine's economy. The results suggest that the TPP would likely generate slight increases in overall measures of Maine's economy. The benefits would be relatively small and spread across the population.

The Trans-Pacific Partnership (TPP) is a proposed free-trade agreement (FTA) between 12 Pacific-Rim countries (Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States, and Vietnam). If passed, it would be one of the world's largest FTAs. Debate on the TPP has exposed starkly different views of how to secure the position of the United States in the world economy.

This article contextualizes the debate and brings it to the state level by illuminating the TPP's potential economic impact on Maine.

The TPP covers numerous complex topics ranging from typical trade issues such as import duties and customs regulations to less obvious issues such as government procurement, patent laws, and labor and environmental standards. Moreover, the TPP's unwritten geopolitical implications may be as complex and important as the agreements codified in its text.

FIGURE 1: **Historical US Tariffs**



Source: USITC 2011.

A BRIEF HISTORY OF US TRADE POLICY

Trade has been a central economic and political issue in the United States since the country's founding. Before 1789, each state had its own tariffs that protected its favored industries and often restricted imports from neighboring states, an unwieldy protectionist system that hindered commerce. In 1789, the states gave Congress the power to remove barriers to interstate trade and regulate international trade.

Like many governments of its time, the early US government imposed tariffs on select imports to aid domestic producers and generate

revenue. Over time, those tariffs fell as the country embraced trade and entered into reciprocal trade agreements with other countries. As Figure 1 shows, the average US tariff fell from 52 percent in 1899 to 16 percent in 1920 (USITC 2011). The Great Depression disrupted that decline as Congress passed high tariffs to protect struggling domestic producers. The average tariff peaked at 59 percent in 1932. That strategy backfired when other countries imposed retaliatory tariffs. World trade declined sharply and deepened the Great Depression (Madsen 2001).

In 1934, believing that economic recovery relied in part on reviving international trade, Congress passed the Reciprocal Trade Agreements Act (RTAA), which gave the president the authority to negotiate reciprocal tariff agreements with other countries. World War II gave added urgency to the call for trade liberalization, as many people believed the collapse of world trade had contributed to global unrest. Countries sought to repair their damaged economies and solidify peace through multilateral cooperation.

In 1947, the United States, Canada, India, Australia, and 19 other European, African, Middle Eastern, and South American countries began a new era of international trade by signing the General Agreement on Tariffs and Trade (GATT), which created the framework of the multilateral trading system that exists today. Over the next few decades, the GATT's membership grew and trade barriers between GATT countries fell.

The GATT eventually led to formation of the World Trade Organization (WTO) in 1995, which now

has 162 members representing 90 percent of the world's population. WTO members agree to treat products imported from all other members equally. In other words, a country cannot lower tariffs for one WTO member without lowering them for all members. The exception is when two members enter into a separately negotiated reciprocal FTA. The WTO's broad membership makes it challenging to reach consensus on some topics. Many countries have turned to regional agreements such as the TPP to negotiate complex issues such as intellectual property rights, copyright laws, international data flows, debit and credit cards, customs regulations, and environmental and labor practices.

Today, the United States has a relatively liberal trade policy compared to earlier periods. About two-thirds of US imports are duty free, and the average tariff on the remaining one-third is just 4.4 percent. At that level, exchange rates can have a stronger impact on import prices than tariffs. However, select agricultural and manufactured goods such as sugar, dairy products, cotton, sneakers, and automobile parts still have high tariffs.

TODAY'S GLOBAL ECONOMY

Globalization refers to the growing integration of economic activities across international borders. Three components of globalization are particularly relevant to trade: falling transportation costs, advances in telecommunication, and growth in low-income countries.

Transportation

Products now traverse the globe faster and more reliably than before. The development of containers in the 1970s revolutionized the shipping industry, greatly reducing the time needed to load, unload, and transfer goods between ships, trucks, and rail cars. The cost of air transport has plummeted and opened entirely new markets for fresh goods that would spoil on long sea voyages. Air transport now accounts for roughly one-quarter of US imports and exports by value.¹

Telecommunication

Worldwide, over 3 billion people used the internet in 2015, up from 400 million in 2000 (ITU 2015). Internet access increases productivity by helping businesses communicate better with suppliers, find qualified employees, learn about market developments, and use a greater variety of cost-saving technologies and services.

CONSUMER BENEFITS OF TRADE

Today's average US home is a showcase of foods, clothes, electronics, and household items made in other countries. Fajgelbaum and Khandelwal (2016) estimate that low-priced imports increase US consumers' purchasing power by 8 percent in aggregate. The savings are even greater (up to 69 percent) for low-income consumers, who spend a higher portion of their income on traded goods.

Aggregated across the entire economy, these gains are dramatic. US consumers spent \$6.8 trillion in 2014 (USBLS 2015). An 8 percent savings on that sum is over \$543 billion, nearly equivalent to the entire economic output of Maine, Massachusetts, and New Hampshire that year.

Furthermore, the internet creates an unprecedented opportunity to connect with new customers both domestically and around the globe.

Advances in telecommunication, coupled with advances in transportation, allow companies to segment their operations and locate each business activity in the most advantageous location. People, designs, and prototypes can move quickly from one location to another without delaying the flow of business. Companies can now lower their costs by locating low-skilled assembly operations in low-wage countries.

Global Development

As low-income countries around the world grow and industrialize, they become larger players in the global economy. Asia's share of global economic activity doubled from 19 percent in 1980 to 38 percent in 2015. Goods from China alone have increased from 3.1 percent of US imports in 1990 to 21.5 percent in 2015. This growth has helped lift hundreds of millions of people out of extreme poverty (Olinto et al. 2013). However, trade theory predicts that increased imports from low-wage countries will put downward pressure on the value of low-skilled labor in the United States, which has indeed happened.

Globalization is a powerful force that has permanently altered the scale on which people do business. The economies of hundreds of countries are now complexly intertwined; the consequences of events and developments in each country now ripple farther and faster than ever before.

THE IMPACT OF TRADE ON US WORKERS

During the mid-twentieth century, US trade liberalization coincided with steadily rising employment. Employment grew even as the share of US workers in manufacturing declined from its peak of 37.9 percent in 1943 to 8.7 percent in 2015 (US Bureau of Labor Statistics). Average hourly earnings increased significantly from 1950 to the late 1970s, peaking at \$23.56 in 1978 (measured in 2015 dollars). Since then, real wages have stagnated. There is an active debate about the source of wage stagnation. It appears to be the result of several factors including trade, technological advances, and the distribution of corporate profits. The degree to which trade affects individual workers depends on several variables.

Import-Competing Versus Nonimport-Competing

Perhaps the simplest factor determining whether trade affects workers is the degree to which their industry competes with foreign imports. Foreign competition has hit US manufacturers particularly hard. US service providers, in contrast, have been somewhat sheltered; a haircut, a hotel room, or an electrical repair cannot be made in one country and used in another. Trade has helped some service industries by reducing the cost of inputs and increasing consumers' purchasing power. Technology is beginning to expand trade into formerly nontraded services, for instance accounting, graphic design, and medical transcription, and that trend is likely to continue (Pisani and Ricart 2016).

Exporting Versus Nonexporting

Businesses that successfully tap into export markets can hire more workers and often pay better wages. One study of US workers found that a 1 percent increase in exports by their industry led to a 1 percent increase in wages even for individuals in low-skilled occupations (Ebenstein et al. 2014). Export opportunities are not reserved for large-scale operations. The Maine elver fishery is a good example of an economic opportunity that would not exist without international trade.

High-Skilled Versus Low-Skilled

In some cases, the skills and occupation of individual US workers can be a stronger determinant of how trade affects their earnings than their industry (Ebenstein et al. 2014). According to Ebenstein et al. (2014), during the 1980s and 1990s, there was a decline of 6 million routine (low-skill) positions in manufacturing, but an increase of 1 million nonroutine (high-skill) positions. Increased trade with low-income countries has put downward pressure on the value of low-skilled labor in the United States while putting upward pressure on the value of high-skilled labor.

Regional Variations

Classical economic theory maintained that workers adversely affected by trade would eventually transition to other industries or relocate to areas with stronger economies. Recent research has challenged this thinking. Empirical evidence shows that areas with concentrations of labor-intensive manufacturing industries (which have generally suffered the most from import competition) have persistently higher unemployment, lower wages, and lower labor market participation (Autor et al. 2013).

Part of that may be lower relocation rates among workers without a college degree; they are less likely to move in search of new job opportunities (Taylor et al. 2008). Falling home prices in depressed areas also raise the cost of moving. In these areas, growth in less affected parts of the economy has not been able to absorb the high number of displaced workers.

MAINE'S ECONOMY POST-NAFTA

Assessing the TPP's potential impact on Maine requires an understanding of how the state's economy has responded to the global forces described earlier, and where it now stands. This article uses implementation of the North American Free Trade Agreement (NAFTA) in 1994 as a benchmark to examine these changes.

Measures of Overall Growth

By several key measures, Maine's overall economy has grown since 1994. On average, median household income rose 0.86 percent per year adjusting for inflation,

surpassing the national rate of 0.31 percent. In all, Maine incomes rose from 94.0 percent of the US median in 1994 to 96.3 percent in 2014. The broadest measure of Maine's economy, its gross domestic product (GDP), also grew after 1994. Through 2014, real GDP increased 29 percent. However, US real GDP grew 49 percent during that time. The difference seems to be that Maine GDP stagnated after 2004, while US GDP continued to grow.

Exports have been a bright spot for Maine, increasing at over twice the annual rate of the rest of the economy (3.1 percent compared to 1.3 percent). In 2015, Maine's top five export products were lobster (12.2 percent of total exports), civilian aircraft and parts (8.7 percent), electronic integrated circuits (8.3 percent), coniferous wood (5.7 percent), and chemical wood pulp (4.9 percent). Top export destinations were Canada (46.5 percent), Malaysia (7.7 percent), China (7.6 percent), Germany (3.8 percent), and Japan (3.0 percent).

Before 2007, growth of Maine exports often exceeded US growth; since 2007, it has generally lagged. Still, Maine food exports have increased significantly in the last decade, more than doubling from \$288 million in 2007 to \$588 million in 2015 (Table 1) (US Census Bureau: Economic Indicators Division USA Trade online). Exports of live lobster accounted for most of that growth, with additional contributions from farmed salmon, sea urchins, sea cucumbers, and elvers. According to Tom Bell in the *Portland Press Herald* (January 5, 2015), exports are a growth area for Maine food producers.

Employment measures also show slowing growth in recent years. Maine has gained almost 90,000 jobs since NAFTA (17 percent growth), but gains have been stifled by two national recessions, the continued decline of manufacturing, and slow population growth. For most of the 1990s, Maine's job growth averaged 2 percent per year, but it has averaged just 0.5 percent annually since the Great Recession technically ended in 2009. Overall job gains mask deep losses in some industries. From 1994 to 2015, the number of Maine workers employed in manufacturing fell 40 percent, from 83,000 to 50,000. That decline was spread across many industries, with concentrations in paper, leather products, transportation equipment, computer and electronic products, and wood products.²

These job losses are part of a sectoral decline in manufacturing that predates NAFTA by 50 years. During World War II, manufacturing employed nearly

TABLE 1: **Maine's Top 10 Food Commodity Exports in 2015**

Commodity	Value (millions)	Average annual increase 2010–2015
	----- \$ -----	----- % -----
Lobster, live	347.0	15
Salmon, fillets	46.2	59
Sea urchins and sea cucumbers	25.2	-3*
Salmon, whole	21.5	-5
Potatoes, prepared and frozen	18.9	-15
Blueberries and cranberries, frozen	17.2	14
Blueberries and cranberries, fresh	11.8	0
Lobster, prepared	11.6	45
Maple sugar and syrup	7.5	13
Chicken eggs	4.6	15

* There are no recorded exports in the sea urchin and sea cucumber commodity category until 2012, so annual increase is based on 2012–2015.

Source: US Census Bureau: Economic Indicators Division USA Trade online.

half (48.8 percent) of all Maine workers and 37.9 percent of US workers. Those percentages gradually merged over the next 60 years. While this transition has not been painless, it does seem to be drawing to a close. As the Brookings Institution (2006: 6) noted, “The ongoing and still painful shift to a more diversified service-oriented economy means that [Maine] has less to lose in the future and more to gain.” As manufacturing employment has fallen, other sectors have grown. Since 1990, Maine has gained nearly 70,000 jobs in management, administrative services, and healthcare.

These trends reflect a shift from goods to services that has occurred throughout the country. Technological advances and increased trade have lowered the cost of many goods and given consumers more income to spend on services such as health care, education, and entertainment. The net result is that between 1990 and 2015, the number of jobs created by Maine service providers nearly equaled the entire goods-producing sector in 1990. Roughly two-thirds of service jobs are in business, health, and education professions. In 2015, their average earnings were \$48,240, just under the average for goods-producing workers (\$50,105). The remaining one-third of service jobs, in retail sales, leisure, and hospitality, averaged less than half that amount, \$23,249.

Regional Variations

Below the state-level gains, however, are stark regional differences. The decline of manufacturing and natural resource industries has hit some parts of Maine hard. Some remote communities never recover from the loss of a dominant employer. Furthermore, the aging of the population and the lack of in-migration has led to decline in many rural communities. From 1990 to 2015, jobs in the Portland labor market area grew 30 percent, Bangor and Lewiston grew 20 percent and 19 percent, respectively, and the rest of Maine grew just 4 percent.

The Role of Trade

The role of international trade in these changes has been debated for years. In 2003, the Maine Legislature authorized, “The Effects of NAFTA on the Maine Economy,” a report that assessed Maine’s economic gains and losses in the first decade of NAFTA’s existence (Planning Decisions 2003). According to the report, during that time, trade with Canada and Mexico grew twice as quickly as the rest of Maine’s economy, and the nature of trade diversified beyond its

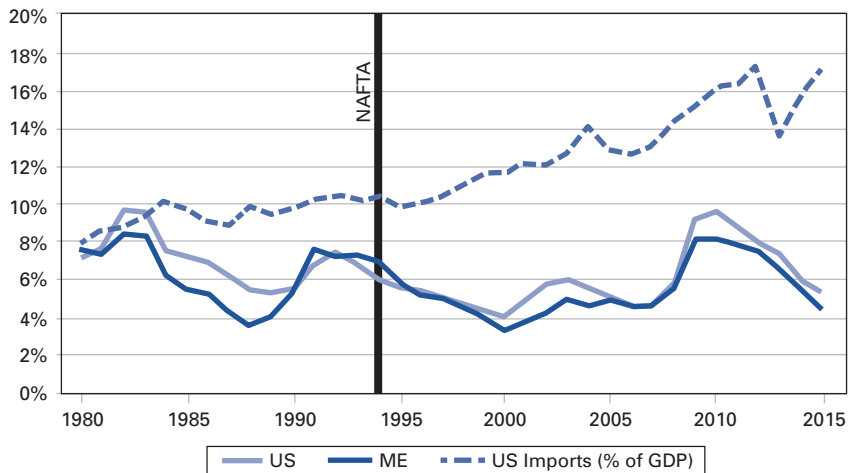
historic concentration in wood and paper products. Canadian investment in Maine grew. Furthermore, access to low-cost imports generated widespread consumer savings. The report asserts that Maine both lost and gained manufacturing jobs because of NAFTA, but the overall effect was likely a net loss. However, the report noted increases in broader economic measures including real personal income, gross state product, exports, and imports. It stopped short of saying whether NAFTA’s overall impact on Maine was positive or negative.

Since 2003, those trends have continued. Manufacturing employment has declined further, and overall economic measures have risen slowly. Maine consumers have continued to benefit from low-priced imports, and the economic impact of those gains remains impossible to quantify. There is no single economic indicator, or econometric calculation, that fully captures trade’s impact on Maine, but various aspects of trade’s effects are revealed by multiple indicators.

Trade-Induced Job Losses

Statistics from the federal Trade Adjustment Assistance (TAA) program are the best available measure of workers hurt by foreign competition. (Unfortunately, there is no corresponding measure of workers helped by foreign trade.) From 1996 to 2012, 81,487 Maine workers were involved in mass layoffs, and 27 percent qualified for TAA.³ The other 73 percent did not qualify, meaning the US Department of Labor determined that other forces such as technological advances, changing consumer demand, or domestic competition caused to their layoff (Burnett 2009). While trade has been a contributing factor to layoffs in Maine, it has not been the sole factor.

From 1996 to 2012, 55 percent of Maine workers affected by mass layoffs were in manufacturing. Burnett (2009: 11) observed, “those [manufacturing] firms most likely to be vulnerable to international competition are those using more workers and paying lower wages (and thus probably not investing in productivity enhancing capital equipment) relative to their peers.” On the flip side, MDOL (2012: 1) noted, “manufacturers that have survived and are thriving are those that invested heavily in capital-intensive production systems that tend to have much higher performance requirements than what many of the former production workers possess in terms of education and experience.” Indeed, from 1990 to 2010, Maine’s manufacturing workforce shrank, but became more productive and better educated. The total

FIGURE 2: US and Maine Unemployment Rates and US Imports

Source: US Bureau of Labor Statistics, US Bureau of Economic Analysis

value of manufactured goods produced stayed relatively constant even as employment fell. In discussing Maine's textile and apparel industry, Burnett (2009: 5) noted, "workers in the few innovative surviving firms have had substantial real wage gains."

Foreign imports do not appear to have affected the overall unemployment rate in Maine and the nation. US imports as percentage of GDP have roughly doubled over the last 40 years, while the unemployment rate has risen and fallen through multiple business cycles (Figure 2).

Foreign Investment

Employment by foreign-majority-owned affiliates in Maine increased 34 percent between 1993 and 2013, nearly double the growth rate of overall employment (18 percent) (Table 2). Planning Decisions (2003) noted increased Canadian investment following the passage of NAFTA. Familiar majority-Canadian-owned companies include Circle K, TD Bank, and TransCanada. Belgium-based Delhaize Group owns Hannaford Brothers, Maine's largest private employer with over 7,500 employees. Foreign investment typically helps US workers through increases in wages, research and development, exports, and productivity.

Trade with China

It is impossible to discuss NAFTA's impact on Maine without understanding the unrelated yet simultaneous increase in Chinese imports that occurred after NAFTA became law. As a percentage of US GDP, goods

imported from Canada have been relatively stable since 1994, averaging 2 percent; Mexican imports have grown from 0.7 percent to 1.6 percent; and Chinese imports have grown from 0.5 percent to 2.69 percent. State import data do not exist, but it is reasonable to assume that national trends reflect circumstances at the state level.⁴

The United States has no trade agreement with China other than the rules of the WTO. The United States first granted China "most favored nation" status in 1979 and renewed that designation every year until 2000, when the United States granted "permanent normal trade relations," as part of China's bid to join the WTO. Under these conditions, without a bilateral trade agreement, goods from China have increased from less than 5.8 percent of total US imports in 1994 to 21.5 percent in 2015. The value of China's abundant resource—low-skilled workers—has risen and put downward pressure on the economic value of low-skilled workers in the United States and Maine.

Summary

Maine's economy has changed in fundamental ways since 1994. It has continued its decades-long evolution from an economy based on manufacturing and natural resources to one based on innovation and services. While it is impossible to quantify trade's myriad impacts on jobs, incomes, and consumer prices, it is possible to observe that Maine's economy has

TABLE 2: Changes in Employment in Maine, 1993 to 2013

	1993	2013	Change %
Total private employment in Maine	424,000	501,200	18
Employment by foreign-majority-owned companies	24,200	32,400	34

Source: US Bureau of Economic Analysis, Foreign Direct Investment in the United States (FDIUS), Table G-8.

grown. However, growth has occurred unevenly across the state, it has often lagged US growth, and it is slowing. Thousands of individuals have experienced painful layoffs, and many communities have suffered the irreversible loss of a dominant employer. Many other individuals and communities have benefited from new economic opportunities that did not exist in 1994.

If the Maine businesses most vulnerable to international competition have closed, relocated, or learned how to compete, then losses generated by previous changes in trade will not be repeated. Moreover, the gains from future trade growth could be greater if sectors of Maine's economy that benefit from trade have grown. Maine exporters may gain better access to foreign markets; Maine consumers may benefit from lower-cost imports; and Maine service providers may gain if their customers have greater purchasing power. Whether Maine gains net jobs will depend on the ability of its businesses to capitalize on the new opportunities created by agreement such as the TPP and the related increases in consumer purchasing power.

ABOUT THE TRANS-PACIFIC PARTNERSHIP

If the TPP passed, it would be the largest FTA in which the United States participates.⁵ The 12 countries in the TPP accounted for 36 percent of world GDP in 2014, although most of that (22 percent) was the United States (Table 3).⁶ All TPP countries are members of the WTO, meaning they already abide by an extensive set of rules on anticompetitive practices and dispute resolution. By negotiating the TPP, the parties hope to secure even more favorable terms for their businesses and consumers and to reach agreement on complex issues outside the

WTO forum. The TPP is designed to be a living agreement that could add countries over time.

The United States has existing trade agreements with six TPP members: Australia, Canada, Chile, Mexico, Peru, and Singapore. Collectively, those countries plus the United States account for over 80 percent of the total economic output of the TPP region. Given the large portion of the TPP region with which the United States has already liberalized trade, most of the agreement's economic impact will be in liberalizing trade with the other five countries (Brunei, Japan, Malaysia, New Zealand, and Vietnam).

The TPP would eventually eliminate nearly all tariffs on goods traded between member countries, but the phase-out periods vary significantly. For example, Singapore would eliminate all tariffs on all goods as soon

TABLE 3: **TPP Member Countries**

TPP member country	Percentage of world GDP 2014	Percentage of world population 2015	Per capita income 2014	Average tariff
	———— % ————		—— \$ ——	—— % ——
Existing US free-trade agreement				
Australia	1.87	0.32	61,980	2.7
Canada	2.29	0.49	50,231	4.2
Chile	0.33	0.24	14,528	6.0
Mexico	1.66	1.73	10,326	7.5
Peru	0.26	0.43	6,541	3.4
Singapore	0.39	0.08	56,284	0.2
United States	22.34	4.38	54,629	3.5
No existing US free-trade agreement				
Brunei	0.02	0.01	40,980	1.2
Japan	5.90	1.73	36,194	4.2
Malaysia	0.43	0.41	11,307	6.1
New Zealand	0.26	0.06	44,342	2.0
Vietnam	0.24	1.25	2,052	9.5
Total, all TPP members	36.0	11.1		
TPP members with existing US trade agreement	29.1	7.7		
TPP members without existing US trade agreement	6.9	3.4		

Source: World Bank, World Development Indicators; and World Trade Organization, member nation tariff profiles. Average tariff is the average rate applied to imports from nations with whom the TPP member does not have an FTA.

as the agreement takes effect, whereas the United States would eliminate most tariffs within a decade, with others remaining in place for up to 30 years.

For the United States, the TPP's most significant new market is Japan, a large, relatively high-income country with protectionist tariffs in several areas. Japan is the United States' third largest export market in the TPP after Canada and Mexico, importing \$62.5 million worth of US goods in 2015. As an article on Bloomberg's website (June 18, 2013) by Brian Winfield suggests, Japan has begun to loosen its historically high tariffs on some products, motivated partly by its struggling domestic economy. Japan signed an FTA with Australia in 2014 and is currently negotiating an agreement with the European Union. Some proponents of the TPP argue that without the partnership, US companies will begin to lose market share in Japan (US Department of Agriculture 2016).

Malaysia and Vietnam also stand out among the TPP members without existing US FTAs. They have sizable populations, fast-growing economies, and relatively low wages. From 2010 to 2015, the average annual growth of US imports from Vietnam and Malaysia was 21 percent and 6 percent, respectively. Furthermore, these countries currently impose relatively high tariffs on US imports, averaging 9.5 percent and 6.1 percent, respectively.

In addition to tariff reductions, the TPP covers numerous complex topics including digital trade, financial services, intellectual property rights, government

procurement, patent laws, and labor and environmental standards. Its chapter on investor-state dispute resolution is perhaps its most controversial. These elements are important to consider when evaluating the agreement's overall value.

THE TPP'S ESTIMATED ECONOMIC IMPACT

Background

The US International Trade Commission (USITC) and several independent groups have assessed the TPP's potential impact on the US economy. There are several points to consider when interpreting the studies' results.

First, these studies focus on the most quantifiable aspect of the TPP—its effect of tariffs and quotas. They do not attempt to estimate the impacts of less quantifiable elements such as environmental and labor regulations, regulatory coherence, or legal ramifications, nor do they estimate the TPP's geopolitical impact. The TPP's economic impact is just one of several important points of consideration.

Second, the impact of an FTA is estimated by generating two projections of future economic conditions, one with the FTA and one without it (often called the “baseline” scenario). The differences in employment, wages, and GDP, for example, are interpreted as the FTA's economic impact.

Third, the numbers generated by economic models should be interpreted as indicators of the probable

THE TPP'S NOVEL COMPONENTS

US FTAs have become more comprehensive over time, and the TPP continues that trend. The following list is drawn from various reports by the Congressional Research Service. The TPP is the first US FTA to

- include enforcement mechanisms (i.e., trade restrictions) for violating the labor standards of the International Labour Organisation;
- require criminal penalties for theft of trade secrets, including theft by state-owned enterprises;
- address overfishing and specifically prohibit subsidies that harm overfished stocks;
- require open access for providers of electronic payment card services (credit and debit cards);
- cover wireless telecommunications service providers, ensuring regulatory transparency and

access to government-controlled infrastructure and resources such as bandwidth;

- contain a stand-alone chapter on regulatory coherence, although without an enforcement mechanism;
- include a specific length of exclusivity rights for biologics (drugs made from living organisms, such as vaccines);
- mention agricultural biotechnology (GMOs), although only to establish a working group and share information on laws and regulations;
- specify that a country's failure to act in accordance with an investor's expectations is not enough to constitute a breach of the agreement; and
- exempt antismoking measures from dispute settlement.

magnitude and direction of future impacts, not precise predictions. In fact, it is common not to publicize exact annual estimates to avoid conveying a false sense of precision.

Fourth, the assessments are attempts to isolate the impact that one variable (the FTA) will have on the future economy. In reality, innumerable other variables (unanticipated changes in energy prices, geopolitics, fiscal and monetary policies, consumer preferences.) will also affect the economy.

Table 4 summarizes the major findings of four assessments of the TPP's potential economic impact: two for the US economy, one for the world economy, and one for a specific sector (agriculture). These studies are methodologically sound and representative of other TPP assessments in terms of methods, scope, and results. Furthermore, three of the four were conducted after the TPP's full text became public and therefore contain fewer speculative assumptions about the agreement than earlier studies.

These studies generally find that the TPP would have neutral or slightly positive effects on the US economy as a whole and increase both imports from and exports to the TPP countries without an existing US FTA (Brunei, Japan, Malaysia, New Zealand, and Vietnam).

The USITC study, which is the basis for the Maine estimates in this article, found that the TPP would have a modest, positive impact on the US economy in 2032. Compared to a baseline scenario, the TPP would increase

US GDP, exports, and imports by 0.15 percent, 1.0 percent, and 1.1 percent, respectively. The largest export gains by percentage would be in agriculture and food (2.6 percent), with smaller gains in manufacturing, natural resources, and energy (0.9 percent), and services (0.6 percent). Import growth of 1.1 percent would be evenly spread across all sectors. Compared to the baseline, the TPP would increase US jobs by 0.07 percent and real wages by 0.19 percent in 2032, with gains spread relatively equally across skilled and unskilled labor.

There are at least two reasons the magnitude of these results may appear small compared to the portion the global economy encompassed by the TPP. First, the estimated impact of any FTA often appears small relative to the large, observable impacts of globalization. Even retrospective assessments of past FTAs find that most have only a marginal impact on overall US economic growth, primarily due to the sheer size of the US economy (Tyler 2006). Second, one of the most notable differences between the TPP and past FTAs such as NAFTA is the degree to which US companies are now accustomed to competing with international imports. In 1993, just 38.8 percent of US imports were duty free. In 2015, fully 68.6 percent were duty free. Many of the businesses most vulnerable to foreign imports have closed, relocated, or learned how to compete. Many other businesses are learning how to use the new opportunities created by trade, such as cheaper imports, foreign customer markets, and consumers with greater purchasing power. Having traveled down the

TABLE 4: **Economic Impacts of the Trans-Pacific Partnership**

Institution (Authors)	Forecast year	GDP %	Exports/imports	Impact on United States	
				Employment	Additional notes
USITC (Signoret et al.)	2032	+0.15	Exports: +1.0% Imports: +1.1%	+0.07%	Real wages: +0.19% Ag exports: +5.4% Ag imports: +2.0%
USDA (Burfisher et al.)	2025	0.0	NA	NA	No change overall Additional job "churn": 0.1%
Peterson Institute for International Economics (Petri and Plummer)	2030	+0.5	Exports: +9.1% Imports: NA	No change overall Additional job "churn": 0.1%	Skilled real wages: +0.63% Unskilled real wages: +0.37% Annual cost of delay: -0.5% of GDP
World Bank (Lakatos et al.)	2030	+0.6*	NA	NA	Skilled real wages: +0.6% Unskilled real wages: +0.4%

*Combined impact on NAFTA countries.

road of globalization for several decades, further expansions of trade may now have a less powerful effect on the US economy than earlier expansions.

Of the several rigorous studies of the TPP's potential impact, the USITC is the best suited for generating state-level impacts. It provides the most detail across all industrial sectors and the best documentation of the categories included in each industry. Furthermore, its model is based on methodology that is widely respected within the academic community.

THE TPP'S ESTIMATED ECONOMIC IMPACT ON MAINE

This section presents estimates of the TPP's economic impact on Maine, extrapolated from the USITC estimates of its likely impact on the United States. The USITC assesses effects in three categories: economy-wide measures (income, gross domestic product, employment, and capital stock), trade (imports and exports), and industrial sectors (three broad sectors and 56 detailed sectors).

The USITC estimates describe the TPP's expected impact on the entire US economy. To translate that into the likely impact on Maine, we first establish the relationship between recent economic activity in Maine relative to the nation. We calculate the average percentage of US economic activity that occurred in Maine during the last three years. We then apply those ratios to the USITC estimates for national economic impacts. For example, from 2012 to 2014, Maine GDP was 0.32 percent of US GDP. The USITC estimates that the TPP would increase US GDP by \$42.7 billion in 2032. If 0.32 percent of that growth occurs in Maine, then we estimate that Maine GDP would increase \$138 million in 2032.

This approach assumes that the relationship between the Maine and US economies remains constant through 2032. In reality, differing levels of public and private investment and demographic change may cause some states to grow faster than others. Population projections suggest that Maine's economy may account for a smaller portion of the nation's future economic growth than it does today. However, quantifying the likely effects of those changes would require substantial analysis with additional assumptions, little data, and considerable imprecision. Furthermore, it would probably affect the results only minimally. Thus, we use a simple extrapolation with maximum transparency and minimum assumptions. Assuming Maine's economy constitutes an

equal or smaller percentage of the US economy in 2032 than it does today, the following estimates can be viewed as upper-bounds of the TPP's potential impact.

Where the USITC estimates the TPP's potential impact on the level of overall US employment, it is possible to extrapolate the potential impact on Maine employment by calculating a ratio as described above. Where the USITC presents the TPP's impact as a percentage change in US employment, as it does for sectors and industries, no further extrapolations are necessary. Since this methodology assumes that the TPP's Maine impacts are proportional to its US impacts, the USITC's percentage estimates for changes to employment are the de facto projections of Maine. Where that occurs, we present the Maine-US employment ratio for context only.

Economy-wide Effects

The USITC estimates that the TPP would have slight, positive effects on overall measures of US economic growth. In 2032, it would increase real income, real GDP, and employment by 0.23 percent, 0.15 percent, and 0.07 percent, respectively. These changes would come from higher earnings due to increased exports and reduced costs due to cheaper imports. Savings from reduced costs would give consumers and businesses additional money to spend or invest elsewhere in the economy.

Maine's share of these gains also would be small: in 2032 there would be about 554 additional FTE jobs, real GDP would increase by approximately \$106 per capita, and real income would increase by approximately \$163 per capita. That means the TPP's value to Maine residents in 2032 would be equivalent to about \$163 per person (Table 5).

Trade Effects

Trade among TPP countries would increase if the agreement went into effect, with the largest increases occurring where current trade barriers are highest. The USITC estimates that overall US exports to TPP countries would increase \$57.2 billion in 2032. The highest percentage increases would be with countries without an existing US FTA (Brunei, Japan, Malaysia, New Zealand, and Vietnam). Some of those sales would be diverted from non-TPP countries, so the overall impact would be a \$27.2 billion increase in US exports. Imports would rise by approximately \$48.9 billion (Table 6). Therefore, the overall result would be a deepening of the US trade deficit by about \$21.7 billion.

Maine has a slightly higher percentage of exports to TPP countries than the rest of the country due to concentrations of sales to Malaysia (semiconductors) and Canada (lobster, wood, and paper). Malaysia is in the new-FTA-partners category and Canada is an existing FTA partner. Total Maine exports to TPP countries would increase by about \$143 million. Accounting for sales diverted from non-TPP countries, total Maine exports would increase by about \$47 million. There are no data on state imports due to the difficulty of tracking

goods once they enter the country. Therefore, it is not possible to generate an estimate of the TPP's impact on Maine imports.

Sector Effects

The TPP would generate overall economic gains, but its effect on various sectors and industries would differ. The USITC estimates impacts in three broad sectors (agriculture and food; manufacturing, natural resources, and energy; and services) and 56 industries.

In some cases, the USITC categories do not align with industry data available at the state level. In other cases, there is no Maine production in small industrial categories or there is insufficient data to generate meaningful estimates. This was especially true in agriculture. Furthermore, there are no statistics on state imports or state service exports. In general, there is better state-level information on employment and exports, which must be reported, than on output, which is often proprietary. The following sections discuss the calculations that were possible given those limitations.

TABLE 5: Estimated Economy-wide Effects of TPP on the United States and Maine: Changes Relative to Baseline in 2032

Effect	United States (USITC)			Maine	
	Level (billion)	Percentage	Percentage of Maine's share of US economic activity	Level (million)	Per capita
Real income	\$57.3	0.23	0.37	\$212	\$163
Real GDP	\$42.7	0.15	0.32	\$138	\$106
Employment (full-time equivalents)	128,200	0.07	0.43	554	—

TABLE 6: Estimated Trade Effects of TPP on the United States and Maine: Changes Relative to Baseline in 2032

	United States (USITC)			Maine	
	Level (billion)	Percentage	Percentage of Maine's share of US economic activity	Level (million)	Per capita
Exports to TPP partners	\$57.2	5.6	0.25	\$143	\$110
New FTA partners	\$34.6	18.7	0.29	\$100	\$77
Existing FTA partners	\$22.6	2.7	0.24	\$55	\$43
Total worldwide exports	\$27.2	1.0	0.17	\$47	\$36
Imports from TPP partners	\$47.5	3.5	—	—	—
New FTA partners	\$23.4	10.4	—	—	—
Existing FTA partners	\$24.2	2.1	—	—	—
Total worldwide imports	\$48.9	1.1	—	—	—

Agriculture and Food

Agriculture and food is by far the smallest of the USITC sectors in both Maine and the nation. However, it would have the largest percentage gains because many countries have high tariffs in this sector. US agriculture and food exports and imports would both increase, but exports would rise more. The net gain would be \$4.5 billion in 2032 (Table 7). There is no corresponding import data for Maine, but it is reasonable to assume that Maine consumers have spending habits similar to their US peers, so Maine also would likely experience a net

gain in this sector. The size of the gain would depend on the ability of Maine farmers and food processors to leverage the new market opportunities created by tariff reductions in other countries.

The USITC estimates that the TPP would slightly increase output in all US agriculture and food industries except rice, soybeans, and seafood. However, it is difficult to extrapolate from those results for Maine because of the small size of the state's agricultural industries. In many cases, there is no or little Maine production or data are not disclosable due to privacy protections. Two industries for which it is possible to extrapolate results are seafood and dairy.

In seafood, US output would likely decline by about 0.2 percent in 2032. Exports would increase about 2.2 percent, with exports to Japan and Vietnam increasing 18 percent and 45 percent, respectively. Seafood imports would increase about 0.9 percent and would exceed the value of exports by more than three to one (\$231.9 billion compared to \$74.1 billion). Most of the import growth would be from TPP members without an existing FTA.

How these changes would affect Maine fisheries would depend on the degree to which domestic consumers find seafood imported from TPP countries to be a substitute for Maine fish and shellfish and on the ability of Maine businesses to exploit new market opportunities. US tariffs on most seafood are already low, and Maine consumers can already access a wide variety of foreign seafood.

The proven ability of Maine's lobster industry to access foreign markets suggests that it would gain under the TPP. Current tariffs on Maine lobsters are as high as 34 percent in Vietnam, 8 percent in Malaysia, and 5

percent in Japan and New Zealand, depending on how it is processed and shipped. Increased exports to South Korea following the implementation of a trade agreement with that country have led some people within Maine's seafood industry to be optimistic that the TPP would further increase demand from Asia.⁷

The USITC expects that the TPP would increase US dairy output by 1.3 percent in 2032. An increase in US dairy exports translates to an increased in Maine dairy exports of about \$2.7 million in 2032, based on Maine's small percentage of US dairy exports (0.15 percent). Maine has a slightly larger percentage of US processed food exports (0.35 percent). Growth in that sector would translate to about \$5.4 million in additional exports in 2032 and output growth of 0.8 percent.

Two crops of particular interest, potatoes and blueberries, are included in the large USITC categories of "processed foods" and "fresh fruit, vegetables, and nuts." Without further detail, it is impossible to calculate appropriate ratios and extrapolate state impacts from the national estimates. However, it is noteworthy that Japan, Malaysia, and Vietnam would eliminate their tariffs on fresh, frozen, and prepared potatoes, which range from about 8.5 percent in Japan to as much as 34 percent in Vietnam (USDA 2016). Those countries would also eliminate tariffs on categories that include blueberries, which range from as high as 17 percent in Japan to 30 percent in Malaysia and Vietnam (USDA 2016).

Services

International trade barriers in services are already relatively low, so percentage changes in this sector are generally smaller than in agriculture and food. However, because it is such a large sector, the absolute gains are large. According to the USITC, the increased demand for services would exceed the US supply, thereby increasing demand for imported services (Table 8). This would presumably occur as cheaper imports gave US consumers and businesses more money to spend on services.

The USITC estimates that the TPP would slightly increase output and employment in all service sectors except transportation, logistics, travel, and tourism (those industries are combined

TABLE 7: Agriculture and Food Sector: Estimated Effects of TPP Relative to Baseline in 2032

	United States (USITC)			Maine	
	Level (billion)	Percentage	Percentage of Maine's share of US economic activity	Level (million)	Per capita
Output	\$10.0	0.5	0.36	\$36	\$28
Exports	\$7.2	2.6	0.38	\$27	\$21
Imports	\$2.7	1.5	—	—	—
Employment	—	0.5	0.40	—	—

into one subsector). They suggest two reasons for reduced growth in that subsector. First, trade barriers in these areas are already low and the TPP would not liberalize them significantly. The model assumes that economic resources would shift to areas where trade liberalization creates new opportunities and away from less dynamic sectors. Second, this subsector includes international tourism. If income gains allow more US residents to travel abroad, that would appear in the model as higher tourism imports. However, a loss for the United States may be a gain for Maine. Greater travel by US residents would likely benefit all tourism destinations, both domestic and foreign.

Manufacturing, Natural Resources, and Energy

According to the USITC estimates, the US manufacturing, natural resources, and energy sector would fare the worst from increased competition from foreign imports. Exports would increase by about \$15.2 billion, but imports would grow by nearly three times that

amount (\$39.2 billion), resulting in an overall drop in output (Table 9). These results reflect a continuation of recent trends. In Maine, these results suggest that export-oriented manufacturers would fare better than those who are not export oriented.

The USITC's estimates suggest that the TPP would have a neutral or slightly positive impact on output for 11 of 25 industries in energy, natural resources, and manufacturing (including apparel, footwear, and passenger vehicles). It would reduce output growth in the remaining 14 industries (including textiles, leather, forestry, and electrical equipment). The USITC notes that all industries within this sector are expected to grow in 2032 in absolute terms. Therefore, the negative results are reductions in growth, not absolute declines.

The USITC predicts slight increases in output of US apparel and footwear. Indeed, the American Apparel and Footwear Association and the Footwear Distributors and Retailers of America have endorsed the TPP. Many US companies in this industry have factories in Vietnam and Malaysia, so tariff reductions would lower their costs.

New Balance, an athletic-shoe maker with approximately 900 employees at operations in Norridgewock, Skowhegan, and Norway, Maine, is unique in opposing the TPP (<http://newbalance.newsmarket.com/>). Although it imports some shoes and shoe components, a large part of its business is US-made shoes that currently benefit from a tariff on lower-cost imported shoes. The TPP would lower and eventually eliminate that tariff. That would lower prices for US athletic-shoe buyers, but potentially make New Balance's domestic operations unviable. According Jon Chesto (*Boston Globe*, June 25, 2016), separate bills approved by both the US House of Representatives and US Senate would require the Department of Defense to purchase only US-made athletic shoes for military recruits. Since New Balance and Wolverine Worldwide, a Michigan shoemaker,

TABLE 8: Services: Estimated Effects of TPP Relative to Baseline in 2032

	United States (USITC)			Maine	
	Level (billion)	Percentage	Percentage of Maine's share of US economic activity	Level (million)	Per capita
Output	\$42.3	0.1	0.34	\$144	\$111
Exports	\$4.8	0.6	0.34	\$16	\$13
Imports	\$7.0	1.2	—	—	—
Employment	—	0.1	0.43	—	—

TABLE 9: Manufacturing, Natural Resources, and Energy: Estimated Effects of TPP Relative to Baseline in 2032

	United States (USITC)			Maine	
	Level (billion)	Percentage	Percentage of Maine's share of US economic activity	Level (million)	Per capita
Output	-\$10.8	-0.1	0.22	-\$24	-\$18
Exports	\$15.2	0.9	0.15	\$23	\$18
Imports	\$39.2	1.1	—	—	—
Employment	—	-0.2	0.44	—	—

are the only companies that could currently satisfy that order, passage of the bill could offset some of the potential negative impact of the tariff reduction. However, as of this publication, the bills are not yet law.

The USITC estimates a 2.1 percent increase in wood product imports primarily from TPP members without an existing FTA. There would be a smaller increase in US exports, but the overall result would be a 0.5 percent output reduction in 2032. In Maine, that corresponds to a decrease in wood products of about \$18 million in 2032.

CONCLUSION

The TPP would likely have a neutral or slightly positive impact on overall measures of Maine's economy in the long run. The benefits would be relatively small and spread across the population. The real income gains for Maine residents, in terms of increased earnings and greater purchasing power from lower-cost products, would equal about \$163 per person in 2032. Underlying those overall gains, some sectors would experience a slight reduction in growth in terms of jobs, output, and exports.

The TPP's estimated economic impact is smaller than the public fervor about it would suggest. There are at least three reasons for that. First, the estimated impact of any FTA often appears small relative to the large, observable impacts of globalization. Second, the United States has already liberalized trade with six of eleven TPP countries, so the agreement's marginal impact is smaller than it would appear at first. Third, Maine's economy has experienced irreversible structural changes in the last few decades and will now react to changes in trade differently than in the past. 🐟

ENDNOTES

- 1 <https://www.census.gov/foreign-trade/Press-Release/2015pr/12/ft920/index.html>
- 2 Data in this paragraph come from the following sources: Income statistics: US Census Bureau, Current Population Survey, Annual Social and Economic Supplements. Table H-8. Median Household Income by State: 1984 to 2014. GDP: US Bureau of Economic Analysis, Real Gross Domestic Product in Chained Dollars. Exports: US Census Bureau, Economic Indicators Division, USA Trade Online: State commodity exports by Harmonized System Code (HS). <https://usatrade.census.gov/>
- 3 Data from US Bureau of Labor Statistics, Mass Layoff Statistics, Series ID: MLUMS23NN0001005. <https://www.bls.gov/mls/> and US Department of Labor, Employment and Training Administration, Trade Adjustment Assistance for Workers Program Petition Data. https://www.doleta.gov/tradeact/taa_reports/petitions.cfm
- 4 Data in this section are from the US Census Bureau, Country and Product Trade Data, Exports, Imports and Trade Balance by Country, Monthly Totals, 1985–Present. <https://www.census.gov/foreign-trade/statistics/country/index.html>
- 5 If the TPP became law, NAFTA and other FTAs would remain in effect. Where TPP and other FTAs differ (in terms of tariff rates or rules of origin) firms could choose which agreement to use.
- 6 (<http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>)
- 7 According to an article in the *Bangor Daily News* (November 25, 2016), Emily Lane of Calendar Island Lobster Co. in Portland said, "We've already seen this with the free trade agreement with South Korea. That caused a significant increase in lobster consumption over the last couple years."

REFERENCES

- Acemoglu, Daron, David Autor, David Dorn, Gordon H. Hanson, and Brendan Price. 2016. "Import Competition and the Great U.S. Employment Sag of the 2000s." *Journal of Labor Economics* 34(1): S141–S198.
- Autor, David H., David Dorn, and Gordon H. Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review* 103(6): 2121–2168.
- Brookings Institution. 2006. *Charting Maine's Future: An Action Plan for Promoting Sustainable Prosperity and Quality of Place*. Brookings Institution, Washington, DC.
- Burfisher, Mary E., John Dyck, Birgit Meade, Lorraine Mitchell, John Wainio, Steven Zahniser, Shawn Arita, and Jayson Beckman. 2014. *Agriculture in the Trans-Pacific Partnership*. ERR 176, USDA, Economic Research Service. https://www.ers.usda.gov/webdocs/publications/err176/49379_err176.pdf?v=41942
- Burnett, Michael. 2009. *The Impact of International Trade on Maine Manufacturing Workers*. Maine Department of Labor, Center for Workforce Research and Information, Augusta. <http://www.maine.gov/labor/cwri/publications/Word/InternationalTradeReport.doc>
- Ebenstein, Avraham, Ann Harrison, Margaret McMillan, and Shannon Phillips. 2014. "Estimating the Impact of Trade and Offshoring on American Workers Using the Current Population Surveys." *The Review of Economics and Statistics* 96(4): 581–595.

- Fajgelbaum, Pablo D., and Amit K. Khandelwal. 2016. "Measuring the Unequal Gains from Trade." *Quarterly Journal of Economics* 131(3): 1113–1180. doi:10.1093/qje/qjw013 1113-1180
- ITU (International Telecommunications Union). 2015. *ICT Facts & Figures: The World in 2015*. ITU, Geneva. <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2015.pdf>
- Lakatos, Csilla, Maryla Maliszewska, Franziska Ohnsorge, Peter Petri, and Michael Plummer. 2016. "Potential Macroeconomic Implications of the Trans-Pacific Partnership." *Global Economic Prospects* (January): 219–255.
- Madsen, Jakob K. 2001. "Trade Barriers and the Collapse of World Trade during the Great Depression." *Southern Economic Journal* 67(4): 848–868.
- MDOL (Maine Department of Labor). 2012. *Manufacturing Jobs: Trends, Issues, and Outlook*. Center for Workforce Research and Information Research Brief, MDOL, Augusta.
- Olinto, Pedro, Kathleen Beegle, Carlos Sobrado, and Hiroki Uematsu. 2013. *The State of the Poor: Where Are the Poor, Where Is Extreme Poverty Harder to End, and What Is the Current Profile of the World's Poor?* Economic Premise 125. World Bank, Washington, DC. <http://siteresources.worldbank.org/EXTPREMNET/Resources/EP125.pdf>
- Petri, Peter A., and Michael G. Plummer. 2012. *The Trans-Pacific Partnership and Asia-Pacific Integration: Policy Implications*, Policy Brief PB12-16, Peterson Institute for International Economics, Washington, DC. <https://piie.com/publications/policy-briefs/trans-pacific-partnership-and-asia-pacific-integration-policy>
- Pisani, Niccolo, and Joan Enric Ricart. 2016. "Offshoring of Services: A Review of the Literature and Organizing Framework." *Management International Review* 56(3)1–40.
- Planning Decisions, Inc. 2003. *The Effects of NAFTA on the Maine Economy*. Planning Decisions, Inc., South Portland, ME. <http://www.nmdc.org/reportsstudies/Maine/NAFTAImpactonME.pdf>
- Taylor, Paul, Rich Morin, D'Vera Cohn, and Wendy Wang. 2008. *American Mobility: Who Moves? Who Stays Put? Where's Home?* Pew Research Center, Social and Demographic Trends Reports, Washington, DC. <http://www.pewsocialtrends.org/files/2010/10/Movers-and-Stayers.pdf>
- Tyler, William. 2006. "Trade Integration for the Americas: What Can Economic Analysis Tell Us?" Universidade do Estado do Rio Janeiro. <http://www.ie.ufrj.br/aparte/pdfs/tylerintegration.pdf>
- USBLS (US Bureau of Labor Statistics). 2015. *Consumer Expenditure Survey*. <https://www.bls.gov/cex/2014/aggregate/cusize.pdf>
- USDA (US Department of Agriculture). 2016. *Trans-Pacific Partnership: Benefits to U.S. Agriculture*. USDA, Foreign Agricultural Service. https://www.fas.usda.gov/sites/default/files/2016-05/tpp_ag_overview_-_short_05-09-16.pdf
- USITC (US International Trade Commission). 2011. *Value of U.S. Imports for Consumption, Duties Collected, and Ratio of Duties to Values: 1891–2010*. USITC, Statistical Services Division, Washington, DC.
- USITC (US International Trade Commission). 2016a. *Harmonized Tariff Schedule of the United States (2016)*. USITC Publication 4588, Washington, DC. <https://hts.usitc.gov/view/release?release=chapter98>
- USITC (US International Trade Commission). 2016. *Trans-Pacific Partnership Agreement: Likely Impact on the U.S. Economy and on Specific Industry Sectors*. USITC Publication 4607, Washington, DC. <https://www.usitc.gov/publications/332/pub4607.pdf>



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