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2016 TRADE POLICY ASSESSMENT

Prepared for the Maine Citizen Trade Policy Commission

The Trans-Pacific Partnership's Potential Economic Impact on Maine

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EXECUTIVE SUMMARY

The Trans-Pacific Partnership (TPP) is a free trade agreement (FTA) between twelve Pacific-Rim countries that together account for over one-third of the global economy.¹ If passed, it would be the largest FTA in which the U.S. participates. 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 any of the agreements codified in its text.

This report assesses the potential impact on Maine's economy of the TPP's tariff reductions and quota increases. While the TPP is about much more than those elements, it is not possible to quantify the effects of numerous other provisions, some of which appear for the first time in a U.S. FTA and have no history from which to draw quantitative estimates. The results suggest that the TPP would likely generate slight increases in overall measures of Maine's economy in 2032. The benefits would be relatively small and spread across the population. Underlying those small overall gains, some sectors would experience a slight reduction in growth in terms of jobs, output, and exports.

Section I: A Guide to the Economics of International Trade

This report begins with a brief history of international trade and related economic theories. Over the last several centuries, trade between countries has grown steadily and trade barriers have fallen. Recent advances in technology and transportation, and industrialization in developing countries have accelerated that growth.

The consensus among modern economists is that trade benefits societies as a whole. In addition to lower consumer prices, workers and businesses gain from higher exports and cheaper inputs. However, economists also agree that changes in trade create losses that fall disproportionately on dislocated workers and businesses. Specifically, imports from low-wage countries have put downward pressure on the value of low-skilled labor in the U.S. Being forced to find a new livelihood can cause devastating harm to some workers. However, economists have found that protecting jobs through trade barriers can be extremely costly; the overall cost to consumers (in terms of more expensive products) is several times larger than the total earnings of the workers whose jobs are protected. Most economists support assisting these individuals directly and helping them find alternative employment rather than restricting trade.

Section II: Maine's Economy Post-NAFTA

Analyzing the TPP's potential impact on Maine requires an understanding of the state's economy and how it has changed in recent decades. This report uses the benchmark of 1994, the first year of the North American Free Trade Agreement (NAFTA), to examine these changes. Since then, overall employment, income, and output in Maine have grown. Exports and foreign investment in Maine companies have risen. The purchasing power of Maine consumers has increased as they have gained access to low-cost imports. However, growth has occurred unevenly across the state and it has often lagged U.S. growth. Thousands of individuals have experienced painful layoffs

¹ TPP members are Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the U.S., and Vietnam. Collectively, those countries accounted for 36% of world GDP in 2014.

and many communities have suffered the irreversible loss of a dominant employer. While it is impossible to quantify trade's myriad and diffuse impacts on Maine consumers, workers, and businesses, it is possible to place it within the context of large economic forces that have influenced Maine's economy over the last two decades. Those forces include the shift from goods to services, globalization, and the rise of China.

From 1994 to 2015, Maine lost 33,000 manufacturing jobs but gained over 100,000 service jobs.² Roughly two-thirds of service positions are in middle- or high-wage business, health, and education professions. The remaining one-third are low-wage jobs in retail sales, leisure, and hospitality. The shift of economic activity from goods to services has occurred throughout the U.S. Technological advances and increased trade with low-wage countries have lowered the cost of many goods, and allowing U.S. consumers to spend more on services such as health care, education, and entertainment.

Maine exports have grown twice as fast as the rest of the economy since 1994, and foreign investors are an important source of capital for Maine businesses. Employment by foreign-owned companies has grown at nearly twice as fast as the rest of the economy. Following NAFTA, Canadian investment in Maine grew, particularly in natural-resource industries such as food and wood products. Globalization has expanded the connections between Maine and the rest of the world.

Finally, Chinese imports have grown from 3% of U.S. imports in 1990 to 22% in 2015 (by value).³ Trade theory predicts that increased imports from low-wage countries like China will put downward pressure on the value of low-skilled labor in the U.S. That is exactly what has happened in Maine and throughout the U.S. Retrospective analyses of the growth of Chinese imports note overall gains for the U.S. economy but significant, permanent losses in some labor markets and groups of workers.

These irreversible events have fundamentally altered Maine's economy and changed how future trade agreements will affect it. For instance, there are now fewer import-sensitive manufacturers relying on low-skilled labor than in past decades. Whether Maine gains net jobs will depend on the ability of Maine businesses to capitalize on the new opportunities created by increased trade.

Section III: About the TPP

If passed, the TPP would eventually eliminate nearly all tariffs on goods traded between member countries. By historical standards, tariffs in most TPP countries are already quite low. For instance, about two-thirds of U.S. imports are duty-free and the average tariff on the remaining one-third is just 4.4%. At that level, exchange rates can have a stronger impact on import prices than tariffs. However, most TPP countries, including the U.S., still protect some domestic producers through higher tariffs. Many of those protections would be eliminated under the TPP. For instance, Japan, Malaysia, and Vietnam would eliminate tariffs on fresh, frozen, and prepared potatoes, which range from about 8.5% to 34%, and blueberries, which range up to 30%. Current tariffs on Maine lobsters are as high as 34% in Vietnam, 8% in Malaysia, and 5% in Japan and New Zealand, depending on how it is processed and shipped. In return, the U.S.

² U.S. Bureau of Labor Statistics, Current Employment Statistics

³ U.S. Census Bureau, [Exports, imports and trade balance by country](#). Accessed May 8, 2016.

would eliminate most tariffs within a decade but others would be phased out over thirty years. Those reductions would mean lower prices for U.S. consumers and cheaper inputs for U.S. producers. They could also increase competition for U.S. businesses in some sectors. The U.S. could re-impose tariffs if imports jump to a level that threatens an entire domestic industry (although not individual companies).

The TPP also contains several novel components, including enforceable labor, environmental, and anti-corruption standards, criminal penalties for theft of trade secrets, and agreements on digital trade, wireless telecommunications, debit and credit cards, regulatory coherence, and biologics. It also attempts to clarify and narrow the conditions under which investors can sue a country for breaching the agreement (specifically denying those privileges to tobacco and shell companies). Furthermore, it outlines a more transparent, detailed procedure for settling disputes than most previous FTAs.

Section IV: The TPP's Estimated Economic Impact: U.S.

Several teams of economists have estimated the TPP's impact on the U.S. economy. Their results are generally consistent; they find it would have neutral or slightly positive effects on the U.S. economy as a whole and increase trade with the TPP countries without an existing U.S. FTA (Brunei, Japan, Malaysia, New Zealand, and Vietnam). For instance, the United States International Trade Commission's report estimates that the TPP would increase U.S. GDP by 0.15% in 2032. Several studies also note the likelihood of concentrated losses among certain groups of U.S. workers forced to transition from contracting to growing sectors of the economy. The overall gains would surpass those losses and could be used to compensate and assist those individuals.

Section V: The TPP's Estimated Economic Impact: Maine

This report takes existing estimates of the TPP's likely impact on the U.S. economy and extrapolates those to Maine. The results suggest that the TPP would likely generate small increases in overall measures of Maine's economy in 2032. Compared to a baseline scenario without the TPP, Maine's real annual GDP would increase by approximately \$106 per capita and there would be about 554 additional jobs. Real annual income would increase by approximately \$163 per capita. That means the TPP's value to Maine residents in 2032, in terms of increased earnings and greater purchasing power from lower-cost products, would be equivalent to about \$163 per person.

Underlying those gains, the TPP's effect on various sectors and industries would differ. Maine's service and agriculture/food sectors would likely experience small increases in demand, resulting in greater exports, employment, and output. By contrast, the TPP would likely reduce the growth of manufacturing, natural resources, and energy, although not enough to generate absolute losses in terms of employment, output, or exports. Nationally, U.S. exports of seafood and wood products would likely increase but imports, particularly from TPP countries without an existing U.S. FTA, would increase even more and slightly reduce growth in those industries. The degree to which those changes affect Maine's seafood and wood products industries would depend in part on the ability of Maine businesses to leverage the new market opportunities created by the TPP's tariff reductions in other countries.

SECTION I

A BRIEF GUIDE TO THE ECONOMICS OF INTERNATIONAL TRADE

WHAT IS FREE TRADE?

Free trade is simply people buying and selling goods and services without government interference, influence, or regulation. In a free-trade situation, buyers and sellers negotiate the terms of a sale and neither party's government alters those terms through fees, restrictions, or subsidies. Buyers and sellers engage in trade willingly because it creates a net gain. That is, each party values what it receives more than what it trades away (otherwise, why make the exchange?). Shoppers at a store willingly trade money for products; workers trade time and labor for wages; teenagers trade doing chores for use of their parents' car.

Trade between the fifty United States is essentially free trade. There is no Maine Customs Office monitoring what enters and leaves the state. Maine's state government does not impose a tax on goods or services purchased from out-of-state. In fact, the U.S. Constitution prohibits state governments from taxing or regulating goods produced out-of-state differently than goods produced in-state.

WHAT ARE THE ALTERNATIVES TO FREE TRADE?

There are very few examples of completely "free" trade between countries. All governments have customs agencies that regulate trade to some degree. They monitor shipments for food and product safety, contraband, and other compliance issues. Beyond those basic safeguards, most governments use various methods to tilt the terms of trade in favor of at least some domestic producers.

Tariffs (also called "import duties") are fees on imports. They increase the price of imports for consumers, thereby protecting domestic producers from lower-cost foreign competition. They also raise government revenues. In 2015, the U.S. imposed tariffs averaging 4.9% on 31% of imports.⁴ The U.S. charged no tariffs on the remaining 69% of imports.

Tariff quotas (or "tariff-rate quotas") are tariffs that increase once a certain amount of an import has entered a country. All subsequent imports are charged a higher tariff. The U.S. imposes tariff quotas on several dozen commodities, mostly agricultural goods, textiles, and apparel.⁵ Twenty-eight product categories are restricted in the U.S. agreement with the World Trade Organization (WTO) that governs most U.S. imports. Other U.S. agreements include tariff quotas on imports from specific countries (e.g., Australian avocados, Moroccan tomato sauce, and dairy, sugar, and textiles from nearly every country with whom the U.S. has a trade agreement).

Quotas are absolute limits on the amount of a good that may enter a country. They have the effect of a complete ban on foreign imports once the quota has been reached. By

⁴ U.S. Census Bureau. [U.S. merchandise trade selected highlights - December 2015](#). Accessed May 2, 2016.

⁵ U.S. Customs and Border Protection. [Commodities subject to import quotas](#). Accessed May 2, 2016.

contrast, tariffs allow those imports while imposing a fee. The use of quotas worldwide has declined; members of the WTO agreed to phase them out entirely in the 1980s. The U.S. imposes no absolute quotas on any imports.

Nontariff trade barriers are laws, conditions, or practices that make trade more difficult or costly. Examples include cargo inspections, labeling and health requirements, import licenses, and general “red tape.” Some of these requirements are necessary, but lengthy delays, expensive fees, or outright corruption can create de facto barriers to trade.

Subsidies are government supports that lower the costs of domestic producers to help them compete against foreign imports. Subsidies take many forms including direct payments, low-cost loans, and tax breaks. Nearly all countries provide some level of economic development incentives to their businesses. There is an on-going international debate about what level of assistance is an acceptable amount. For instance, many U.S. companies pay for employee health insurance, unlike their competitors in countries where health care is publicly provided.

Protectionism is when governments use the above mechanisms to restrict imports and protect domestic producers from foreign competition. While there is a worldwide trend toward freer trade, there are also many examples of protectionism. Many countries restrict trade to protect jobs, to deter real or perceived unfair trade practices by other countries, to assist developing “infant industries” (discussed below), and to protect industries of national strategic interest (e.g., energy, food, and armaments).

A BRIEF HISTORY OF INTERNATIONAL-TRADE ECONOMICS

Some of the earliest writings in the field of economics are on international trade. In the 17th and 18th centuries, as European empires expanded around the globe, trade was widely seen as a nation's principal source of wealth. The prevailing economic theory of the time was “mercantilism,” which is essentially the belief that international trade benefits only the exporting nation. According to that theory, a nation’s welfare was determined by its accumulated wealth; any consumption that redirected income to other countries was bad. Mercantile rulers sought to maximize their nation's exports and minimize imports, often by acquiring export-generating colonies and restricting imports through tariffs, quotas, or outright bans.

In the late 18th century, that worldview began to shift as economists and political leaders saw opportunities for mutual gains through trade. In 1776, the famous economist Adam Smith pointed out that trade allows each country's producers to specialize in the products that they make most efficiently, and that reaching more customers through trade can benefit producers and consumers in both countries. In 1817, economist David Ricardo explained how comparative advantage allows two countries to gain from trade even if one is more efficient in all areas of production. For instance, if a country is good at growing strawberries, and even better at growing blueberries, then it is better off importing strawberries and devoting more resources to the more profitable blueberries. Its trading partner, who is worse at both products, gains by growing and exporting strawberries and importing the blueberries.

Building on Ricardo's theory, later economists noted that every country has a different mix of production inputs (technology, capital, labor, natural resources, etc.). Countries export goods that use their most abundant inputs and import goods that use their scarcest.⁶ The value of abundant inputs rises as exports rise and the value of scarce inputs falls as imports fall.⁷ The changes in value will be relatively small if international trading partners have similar inputs and large if their inputs are very different.

These concepts play out in Maine's economic history. In the 19th century, industrialists used abundant hydropower in places like Lewiston-Auburn and Biddeford-Saco to build mills that attracted an abundance of low-skilled labor. These mills competed successfully with mills in other New England states with similar labor and energy costs as Maine. Decades later, however, mills opened in Appalachia, a region with cheap electricity and lower wages than New England. Low-cost Appalachian "exports" lowered the price that Maine mills received for their textiles. When the value of Maine textiles fell, the market value of Maine workers' labor also fell.

Such instances of economic dislocation are a primary reason why free-trade policies are often viewed unfavorably. The above example, however, reveals two important points. First, it is *changes* in trade, not trade per se, that cause dislocations. Indeed, Maine's textile industry would not have developed to the extent that it did without trade. Second, international trade is not always the cause of major sectoral decline. In this case, it was domestic competition. Economic dislocations are an unfortunate consequence of an evolving economy, and many happen whether or not there is international trade.

The consensus among modern economists is that trade substantially benefits societies as a whole. In addition to lower prices for consumers, workers and businesses gain from higher exports and cheaper inputs. However, economists also agree that changes in trade create losses that fall disproportionately on dislocated workers and businesses. Being forced to find a new livelihood can cause devastating harm to some workers. Most economists support compensating these individuals directly and helping them find alternative employment rather than restricting trade. Trade restrictions, they claim, would mean forgoing the large, and dispersed, gains of trade to avoid the relatively small, albeit heavily concentrated, losses.

Economists have shown that protecting jobs through trade barriers can be extremely costly; the overall cost to consumers (in terms of more expensive products) is several times larger than the total earnings of the workers whose jobs are protected.⁸ One important reason for that is that only a portion of increased prices paid by consumers support workers; another large portion goes to their employers' profits and to their competitors. For instance, one study found that a tariff on Chinese tires reduced imports by 67% within a few months of taking effect in 2009.⁹ The price of tires increased and consumers ended up spending \$1.1 billion more on tires over the next two years. The study estimates that the tariff preserved 1,200 U.S. tire manufacturing jobs at a cost of

⁶ Eli Heckscher and Bertil Ohlin proposed this theory in 1933.

⁷ Wolfgang Stolper and Paul Samuelson proposed this theorem in the 1941.

⁸ See, for example, Murray Weidenbaum and Michael Munger, "Protection at Any Price?" *Regulation*, 1983; Gary C. Hufbauer and Kimberly A. Elliott, *Measuring the Costs of Protection in the United States*, Washington, D.C.: Institute for International Economics, 1994.

⁹ Gary C. Hufbauer and Sean Lowry, "[U.S. tire tariffs: Saving few jobs at high cost.](#)" Peterson Institute for International Economics Policy Brief PB12-9, 2012.

\$926,000 per job. Some of that cost supported the wages of those workers, but more went to their employers and to foreign tire makers outside China (imports from other countries increased when Chinese imports fell).

Another body of economic literature examines increases in innovation due to trade. Larger markets create greater opportunities for economies of scale in production. Producers can develop deeper areas of specialization. Furthermore, producers learn from their international partners and competitors. They can incorporate foreign technologies and methods into their products, or they can sell their technology abroad. Finally, increased competition creates greater incentive to innovate. There is empirical evidence that companies involved in trade are more productive than those that are not.¹⁰ That may be because more efficient companies self-select into the export market. There are, however, some instances when trade may deter innovation by some companies. When faced with increased imports, producers who are far behind technologically may not be able to make the upgrades necessary to compete, and small producers may struggle to reach economies of scale.

Supporting small, emerging producers is a narrow situation in which some economists support trade restrictions. That is when a country wants to support an “infant industry” in which it reasonably believes it could have a comparative advantage. The theory, sometimes referred to as “strategic trade policy,” is that protecting the industry from competition during its early stages will help it reach the point at which it can then compete without artificial protections. While some economists support such trade restrictions in theory, others point to the potential mistakes in predicting where a country will have comparative advantage and the opportunity for political abuse.¹¹ In practice, domestic industries will likely exert political pressure to keep protections in place even after they are no longer necessary. If left in place, trade protections would then unnecessarily increase costs for domestic consumers, generating a net loss for the economy.

Further Reading

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A BRIEF HISTORY OF U.S. TRADE POLICY

Trade has been a central economic and political issue in the United State since the country’s founding. Prior to 1789, each state had its own schedule of tariffs that protected its favored

¹⁰ Andrew B. Bernard and J. Bradford Jensen, “[Exceptional exporter performance: cause, effect, or both?](#)” *Journal of International Economics* (47) 1-25, 1999.

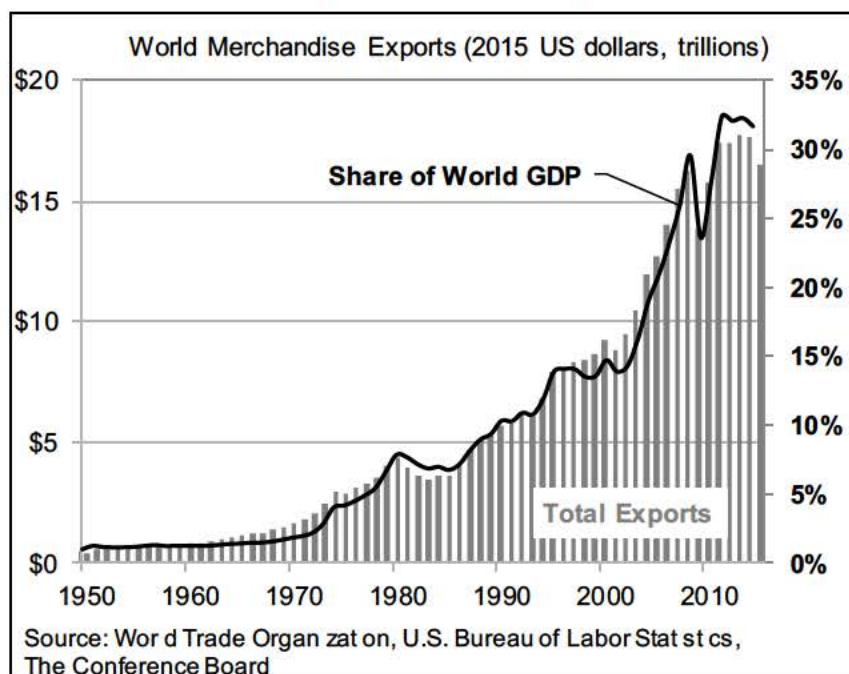
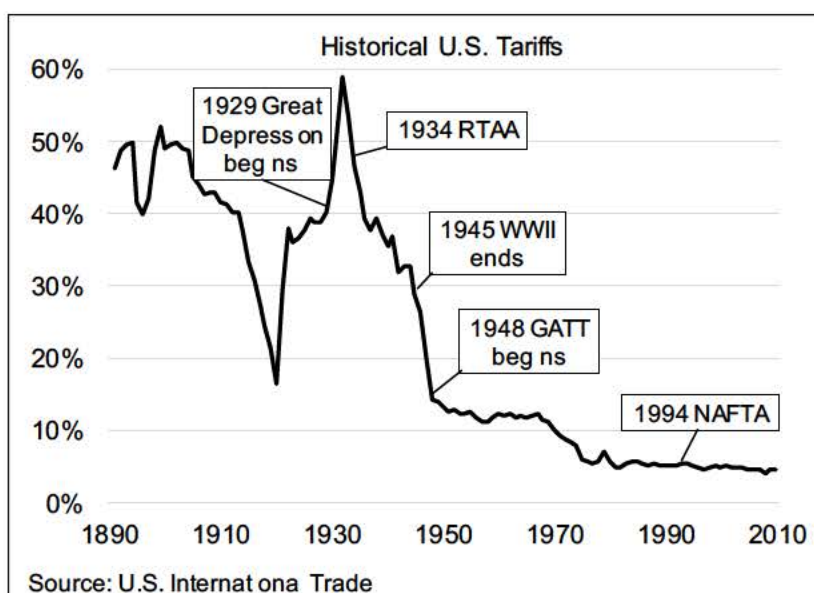
¹¹ Paul Krugman is a good example. He received the 2008 Nobel Prize in Economics in large part for his work in creating strategic trade policy but he has argued on many occasions that this work has been used to illegitimately justify trade protections.

industries and often restricted imports from neighboring states. It was an unwieldy, protectionist system that hindered commerce. In 1789, by mutual agreement, the states voluntarily gave Congress the power to remove barriers to interstate trade and regulate international trade.

Like many governments of its time, the early U.S. government imposed tariffs on select imports both to aid domestic producers and generate revenue. Over time those tariffs fell as the U.S. embraced trade and entered into mutually beneficial, reciprocal trade agreements. The federal government also developed alternate revenue sources, most notably the individual income tax. The average tariff fell from 52% in 1899 to 16% in 1920.¹² The Great Depression disrupted

that decline as Congress passed high tariffs to protect struggling domestic producers. The average tariff peaked at 59% in 1932. That strategy backfired when other countries imposed retaliatory tariffs. World trade declined sharply and deepened the Great Depression.¹³

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



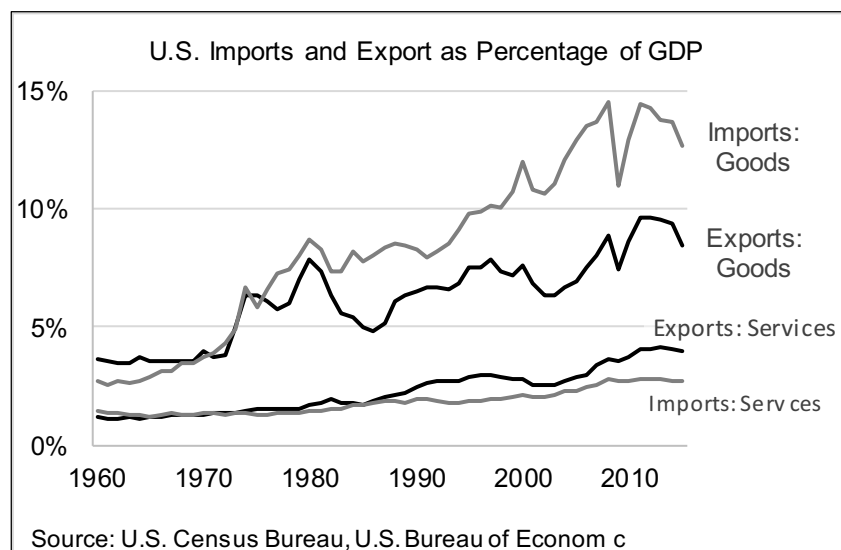
¹² U.S. International Trade Commission, [Value of U.S. imports for consumption, duties collected, and ratio of duties to values: 1891-2010](#), 2011.

¹³ Jakob K. Madsen, "[Trade barriers and the collapse of world trade during the Great Depression](#)," Southern Economic Journal 67(4), 2001.

unrest.¹⁴ Countries sought to repair their damaged economies and solidify peace through multilateral cooperation.

In 1947, the United States, Canada, India, Brazil, Australia, and eighteen 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). That voluntary agreement 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 topics negotiated within the GATT grew beyond tariffs and quotas to the rules of trade, such as antidumping laws, countervailing duties, and intellectual property rights. During the Cold War, the GATT, whose growing membership supported trade liberalization, was an important economic and political counterpoint to the Soviet bloc. The GATT eventually led to formation of the World Trade Organization (WTO) in 1995, which now has 162 members representing 90% of the world's population including China, Russia, and nearly all of the former Soviet countries.

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, free-trade agreement. Treating another country the same as other "favored" country is sometimes called granting "most favored nation status." Over time, so many countries have granted this status to one another that the U.S. replaced the term with "permanent normal trade relations" in 1998. The U.S. now grants this status automatically unless prohibited by law (e.g., Cuba and North Korea).



Despite the mid-century advances in international trade, U.S. imports and exports were still relatively modest by today's standards until the 1970s. Imports and exports were essentially equal and most trade occurred with countries whose economies and wages were relatively similar to the U.S.

Passage of the North American Free Trade Agreement (NAFTA) in 1993 is one of the most significant

developments in U.S. trade policy in recent memory. See Section II of this report for a more detailed description of NAFTA and its impact on Maine.

¹⁴ In an [address](#) to Congress in 1940, President Franklin D. Roosevelt said, "For many years after [WWI,] blind economic selfishness in most countries, including our own, resulted in a destructive mine field of trade restrictions which blocked the channels of commerce among nations. This policy was one of the contributing causes of existing wars. It dammed up vast unsalable surpluses, helping to bring about unemployment and suffering in the United States and everywhere else."

Today, the U.S. has a relatively liberal trade policy compared to earlier periods in its history; there are low or no tariffs on most products (although select agricultural and manufactured goods such as sugar, dairy products, cotton, sneakers, and automobile parts still have high tariffs). Most of today's trade agreements go beyond simple tariff reductions to address things such intellectual property rights, investment, environmental and labor standards, dispute resolution, and regulatory issues.

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TODAY'S GLOBAL ECONOMY

Government policies are only one determinant of international trade. Transportation costs, technological advances, and growth in low-income countries all affect the flow of goods around the world. "Globalization" refers to the growing integration of economic activities across international borders.

Transportation

Products can now traverse the globe faster and more reliably than ever 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. Commercial air transport has opened up entirely new markets for fresh goods that would spoil on long sea voyages. Furthermore, the cost of air transport has plummeted. One study found that the inflation-adjusted cost of moving one ton of goods one kilometer by air fell from \$3.87 in 1955 to just \$0.30 in 2004.¹⁵ Air transport, which was negligible in the 1960s, now accounts for roughly one-quarter of U.S. imports and exports by value.¹⁶

Advances in transportation, coupled with advances in telecommunication, allow companies to segment their operations and locate each business activity (research, design, manufacturing, customer service, etc.) 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.

The Internet

The internet is another driver of globalization. Worldwide, over 3 billion people used the internet in 2015, up from 400 million in 2000.¹⁷ As the internet expands, so does business. Several studies have found that a 10% expansion of broadband access within a country increases

¹⁵ David Hummels, "[Transportation costs and international trade in the second era of globalization.](#)" *The Journal of Economic Perspectives*, 21(3), 2007.

¹⁶ U.S. Census Bureau, [U.S. merchandise trade selected highlights - December 2015](#). Accessed May 2, 2016.

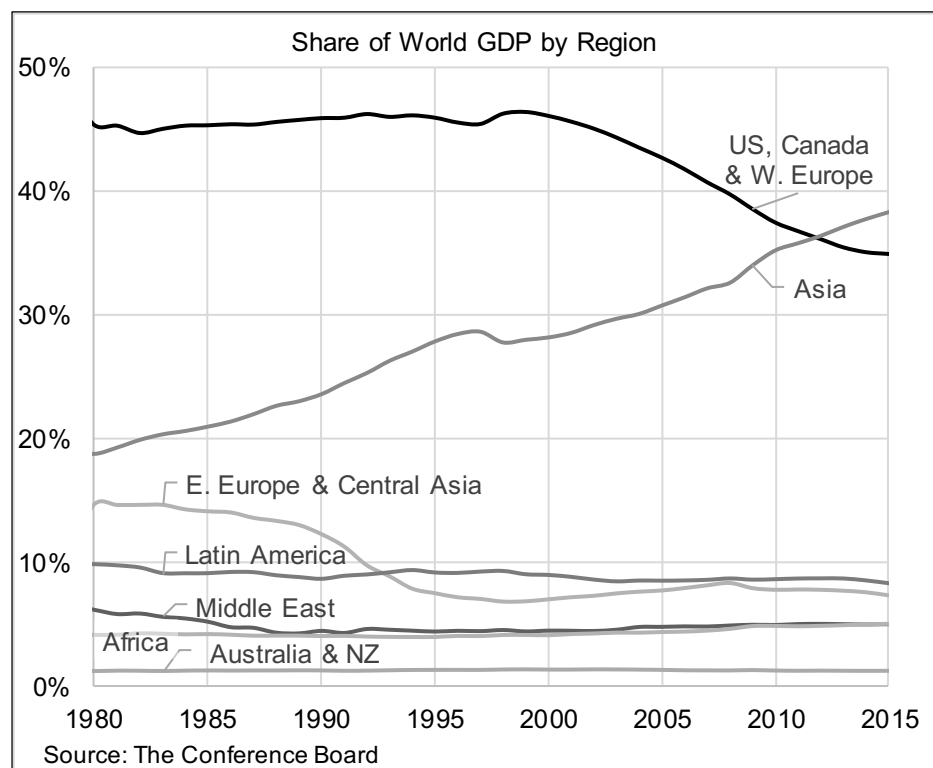
¹⁷ International Telecommunications Union. [ICT facts & figures: The world in 2015](#). Accessed May 2, 2016.

economic activity by about 1%, with the impact being larger in developing countries.¹⁸ Internet access increases productivity by helping businesses communicate better with suppliers, find qualified employees, learn about market developments, and utilize a greater variety of cost-saving technologies and business services. Furthermore, the internet creates an unprecedented opportunity for businesses to connect with new customers both domestically and around the globe.

International Economic Development

For U.S. workers, the most powerful trade development in recent decades has been the rapid growth of imports from low-income countries with abundant labor, particularly in Asia. In the past, imports from those countries were limited, so the impact of trade liberalization on the U.S. labor market was also limited. That is no longer the case. The graph below shows how Asia's share of global economic activity doubled from 19% in 1980 to 38% in 2015.¹⁹

China is perhaps the best known example of a country where exports played a significant role in economic development. In the 1950s and 1960s, China was an undeveloped nation with hundreds of millions of people in extreme poverty. In a series of reforms in the 1970s, China liberalized its economy in several important ways, including allowing some manufacturers to leverage China's large pool of low-skilled labor to grow exports. These reforms eventually helped to raise hundreds of millions of Chinese households out of poverty. The portion of Chinese households in extreme poverty fell from 84% in 1981 to 12% in 2010.²⁰



¹⁸ Joshua Meltzer, "[Supporting the Internet as a platform for international trade.](#)" The Brookings Institute, Global Economy and Development, Working Paper 69, 2014.

¹⁹ The Conference Board, [The Conference Board Total Economy Database](#).TM

²⁰ Pedro Olinto, Kathleen Beegle, Carlos Sobrado, and Hiroki Uematsu. "[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?](#)" World Bank *Economic Premise* note series, 125, 2013.

The U.S. has no trade agreement with China other than the rules of the WTO, of which both countries are members. The U.S. first granted China “most favored nation” status in 1979, and the U.S. renewed that designation every year until 2000, when it 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 3.1% of U.S. imports in 1990 to 21.5% in 2015.²¹

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

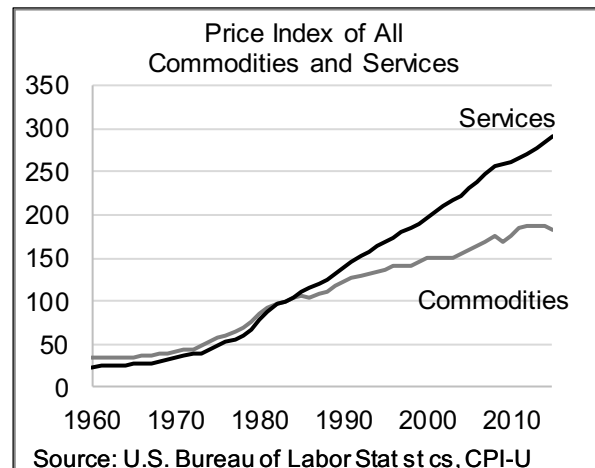
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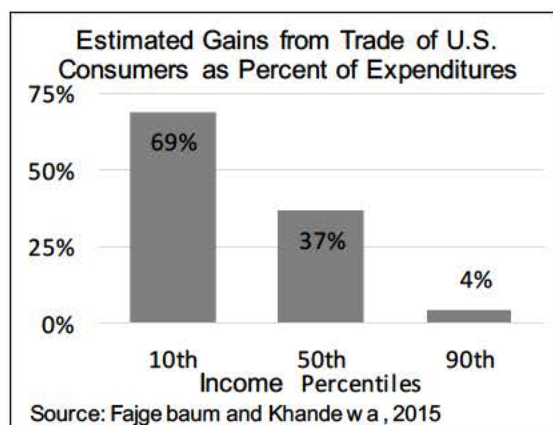
THE IMPACT OF TRADE ON U.S. CONSUMERS

One of trade’s most valuable benefits for U.S. consumers is increased access to a vast amount of low-cost imported goods. The average American home is a showcase of foods, clothes, electronics, and household items made in other countries, or made in the U.S. with inputs from other countries. Trade increases consumers’ welfare by lowering their expenses and offering greater selection. The chart at right shows the difference in price inflation between commodities, which are tradable, and services, which are historically much less tradable.

According to this broad index tracked by the U.S. Bureau of Labor Statistics, something that cost \$10 in 1960 would cost \$120 in 2015 if it was a service but only \$54 if it was a commodity. Some of the difference is the result of cost-saving technological advances in the production of commodities, but part of it is attributable to low-cost imports.



²¹ U.S. Census Bureau, [Exports, imports and trade balance by country](#). Accessed May 8, 2016.



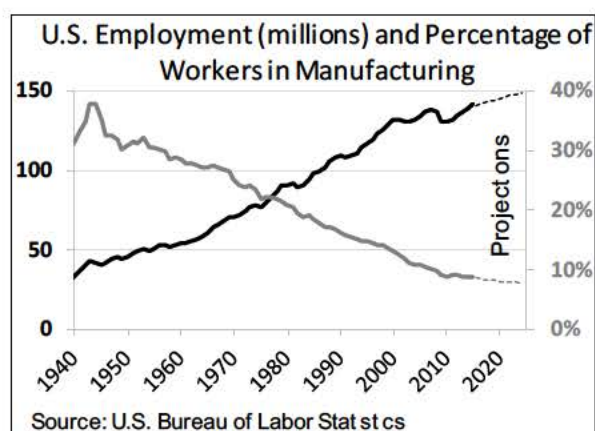
One team of researchers estimates that trade increases U.S. consumers' purchasing power by 8% in aggregate.²² The savings is even greater for low-income consumers since they spend a higher portion of their income on traded goods such as clothing and food, while higher income consumers spend more on non-traded goods such as services. Taking this into account, they estimate that trade increases the purchasing power of a typical consumers at 10th income percentile (earning the same or more than 10% of the population) by 69%, while consumers at the 90th percentile enjoy a 4% increase in purchasing

power.

When these savings are aggregated across the entire U.S., the gains from trade are dramatic. According to the Bureau of Labor Statistics, U.S. consumers spent \$6.8 trillion in 2014.²³ An 8% savings on that sum is over \$543 billion. That's nearly equivalent to the entire economic output of Maine, Massachusetts, and New Hampshire that same year (\$580 billion).²⁴ That savings benefits domestic producers by giving consumers more money to spend elsewhere in the economy.

THE IMPACT OF TRADE ON U.S. WORKERS

During the mid-20th century, trade liberalization occurred at the same time as U.S. employment rose. Employment grew even as the share of U.S. workers in manufacturing declined steadily from its peak of 37.9% in 1943 to 8.7% in 2015.²⁵ The U.S. Bureau of Labor Statistics (BLS) forecasts the decline to continue to 7.6% in 2024 (its furthest projection). It is important to note that BLS expects manufacturing to shed jobs even without new trade agreements. Just as future manufacturing job losses will occur even without changes in trade policy, past job losses would have occurred even without past policy changes.



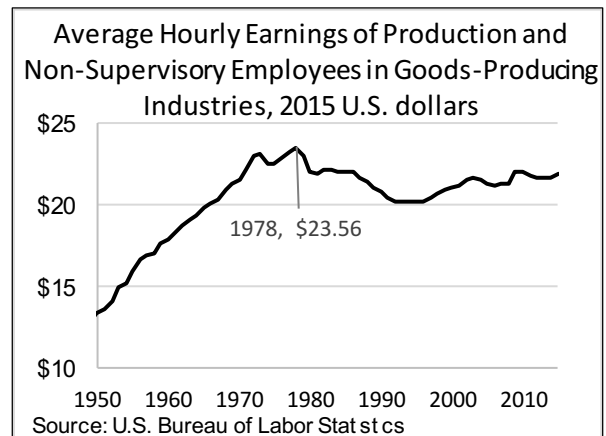
²² Pablo D. Fajgelbaum and Amit K. Khandelwal, "[Measuring the unequal gains from trade](#)," *Quarterly Journal of Economics*, forthcoming, 2015.

²³ U.S. Bureau of Labor Statistics, Consumer Expenditure Survey.

²⁴ U.S. Bureau of Economic Analysis, gross domestic product by state.

²⁵ U.S. Bureau of Labor Statistics, Current Employment Statistics.

Although data limitations make comparisons across long time periods problematic, average hourly earnings increased significantly from 1950 to the late 1970s even after adjusting for inflation. Measured in 2015 dollars, wages peaked at \$23.56 in 1978. Since then, real wages have stagnated. There is an active scholarly debate about the source of wage stagnation. It appears to be the result of several factors including changes in trade, technological advances, and changes in the distribution of corporate profits. It would be inaccurate to blame the stagnation solely on changes in trade.



However, it is indisputable that in the latter half of the 20th century, trade with low-wage countries, especially in Asia, grew rapidly. Those countries tended to have an abundance of low-skilled labor willing to work at wages far below U.S. standards but acceptable (even favorable) in the local market. Trade theory predicts that increased imports from those countries put downward pressure on the value of low-skilled labor in the U.S.

Import-Competing Versus Non-Import-Competing

Perhaps the simplest factor determining whether a change in trade will impact workers in a particular industry is the degree to which the industry competes with foreign imports. U.S. manufacturers have been hit particularly hard by foreign competition. U.S. service providers, in contrast, have been somewhat sheltered due to the historical need for services to be produced and consumed in the same place. A haircut, a hotel room, or an electrical repair cannot be made in one country and used in another. Trade has helped these industries by reducing the cost of inputs and increasing consumers' purchasing power. It is important to note, however, that technology is beginning to expand trade into formerly non-traded services, for instance accounting, graphic design, and medical transcription, and that trend is likely to continue.²⁶

Not surprisingly, workers in import-competing sectors are more likely to feel the direct impact of increases in trade. As low-cost foreign goods enter the marketplace, output and employment by domestic producers fall. One study followed low-skilled workers in import-competing industries beginning in 1997 and found that their wages dropped by 12-17% over the next five years.²⁷ Much of the decline was from losing relatively high-wage jobs in manufacturing and moving into less lucrative industries. Another study of the declining share of U.S. manufacturing jobs from 2000 to 2007 found that much of the decline could be attributed to the long-term decline of the industry.²⁸ However, 0.5 percentage points, or 800,000 jobs, could be attributed to the growth of Chinese imports. The study also estimated that Chinese imports decreased the U.S.

²⁶ Niccolo Pisani and Joan Enric Ricart, "[Offshoring of services: A review of the literature and organizing framework](#)," *Management International Review*, 56(3), 2016.

²⁷ Avraham Ebenstein, Ann Harrison, Margaret McMillan, and Shannon Phillips, "[Estimating the impact of trade and offshoring on American workers using the Current Population Surveys](#)," *The Review of Economics and Statistics*, 96(4), 2014.

²⁸ Lorenzo Caliendo, Maximiliano Dvorkin, and Fernando Parro, "[Trade and labor market dynamics](#)," Federal Reserve Bank of St. Louis, Working Paper 009C, 2015.

unemployment rate by 0.3 percentage points in the long-run by providing cheaper inputs for non-manufacturing industries. Another study estimates that between 1999 and 2011, Chinese imports caused the loss of 2.4 million jobs, with gains in non-tradable sectors eclipsed by losses in import-competing, tradable sectors.²⁹

Exporting Versus Non-Exporting

Trade gives U.S. businesses access to customers worldwide. Domestic employers who successfully tap into export markets can hire more workers and pay better wages. Many studies have documented that export-oriented firms and industries pay higher average wages than non-export-oriented firms, both in the U.S. and other countries. Some researchers have questioned whether that simply reflects differences in the nature of the work and employee qualifications, at least in developed countries.³⁰ However, one large study of U.S. workers from 1997 to 2002 found that a 1% increase in exports led to a 1% increase in wages for individuals in low-skilled, routine occupations.³¹ 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 but for international trade.

High-Skilled Versus Low-Skilled

The skill level and occupation of individual U.S. workers can be a stronger determinant of how trade has impacted their earnings than the industry in which they are employed.³² For instance, during the 1980s and 1990s there was a decline of 6 million routine (low-skill) positions in manufacturing but an increase of 1 million non-routine (high-skill) positions.³³ Increased trade with low-income countries has put downward pressure on the value of low-skilled labor in the U.S. while putting upward pressure on the value of high-skilled labor. Partially because of that, the earnings gap between U.S. workers of different educational levels has grown in the last several decades. In 1990, people with a high school diploma earned about 60% as much as college graduates; in 2014, they earned about 55% as much.³⁴

Regional Variations

Classical economic theory maintained that workers adversely affected by trade would eventually transition to other sectors or relocate to areas with stronger economies. Recent research has challenged this thinking. Empirical evidence shows that many workers and regions have not bounced back even decades after mass layoffs.³⁵ From 1990 to 2007, areas with concentrations of labor-intensive manufacturing industries (which generally utilize lots of low-skill labor) suffered much more from import competition than other manufacturing areas.³⁶ There, growth in less-affected areas of the economy has not been able to absorb the high number of displaced

²⁹ Daron Acemoglu, David Autor, David Dorn, Gordon H. Hanson, and Brendan Price, “[Import competition and the great U.S. employment sag of the 2000s](#),” *Journal of Labor Economics*, forthcoming, 2014.

³⁰ Thorstein Schank, Claus Schnabel, and Joachim Wagner, “[Exporting firms do not pay higher wages, ceteris paribus](#),” Institute for the Study of Labor. Discussion Paper No. 1185, 2004.

³¹ Ebenstein et al.

³² Ibid.

³³ Ibid.

³⁴ National Center for Education Statistics, [Digest of Education Statistics](#), 2015.

³⁵ Acemoglu, et al.

³⁶ David H. Autor, David Dorn, and Gordon H. Hanson, “[The China syndrome: Local labor market effects of import competition in the United States](#),” *American Economic Review*, (103)6, 2013.

workers. Those areas have persistently higher unemployment, lower wages, and lower labor market participation. Part of that may be lower relocation rates among non-college workers; they are less likely to move in search of new job opportunities, perhaps because of cultural and family ties.³⁷ Falling home prices in depressed areas also raise the cost of moving.

In recent decades, labor-saving technological advances have coincided with trade liberalization. There is interesting new research comparing the impacts of these two forces on the U.S. labor market.³⁸ Technological advances tend to have a neutral or only slightly negative impacts on employment (although a negative impact is more likely for low-skilled workers); workers who lose jobs through automation tend to find other occupations within their industry or outside it. Import competition, by contrast, tends to yield overall employment losses that ripple through a regional economy, especially among less-educated workers.

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TRADE ADJUSTMENT ASSISTANCE

As previously discussed, increases in trade generates economic gains for countries as a whole but workers in certain import-sensitive occupations suffer disproportionately. In the U.S., Trade Adjustment Assistance (TAA) is a federal program that redirects some of the country’s gains to those who have lost. Put differently, the millions of corporations and individuals who benefit from trade pay federal taxes and TAA uses a portion of that revenue to help the workers, firms, and communities who are hurt by foreign competition.

TAA was first proposed in the 1950s as an alternative to protectionist tariffs. Congress first included TAA in the Trade Expansion Act of 1962. The program allows workers who lose their jobs due to foreign trade to petition the U.S. Department of Labor (USDOL). USDOL then determines whether or not trade played an important role in their layoff. If it did, then the workers become eligible for TAA benefits and services. Those benefits have expanded and contracted over time, but usually include retraining, assistance with job searches, relocation assistance, health insurance, extended unemployment benefits, and cash benefits to people who find new work at wages below their previous pay level. Since 1975, 78,275 groups of workers (representing 8.2 million individuals) have filed TAA petitions.³⁹ USDOL certified 63% of them. As of December 31, 2014, 2.2 million of the 4.9 million workers eligible for TAA benefits and services utilized them.⁴⁰

It is worth noting that TAA benefits account for a very small portion of the increased government assistance given to trade-displaced workers (less than 1% in one study).⁴¹ Studies of

³⁷ Paul Taylor, Rich Morin, D’Vera Cohn, and Wendy Wang, “[American mobility: Who moves? Who stays put? Where’s home?](#)” Pew Research Center, December 29, 2008.

³⁸ David H. Autor, David Dorn, and Gordon H. Hanson, “[Untangling trade and technology: Evidence from local labor markets](#),” *The Economic Journal*, 125, May 2015.

³⁹ U.S. Bureau of Labor Statistics, [TAA national petition data](#).

⁴⁰ U.S. Department of Labor, “[Trade Adjustment Assistance for Workers: Fiscal Year 2014](#).”

⁴¹ Autor et al, 2013.

unemployed workers in manufacturing-intensive areas have documented increased use of other government programs such as food stamps, Medicaid, Medicare, and disability benefits (increases in the latter two programs suggest that some laid off workers retire or claim a disability rather than working, perhaps because they are unable to find alternate employment).

Further Reading

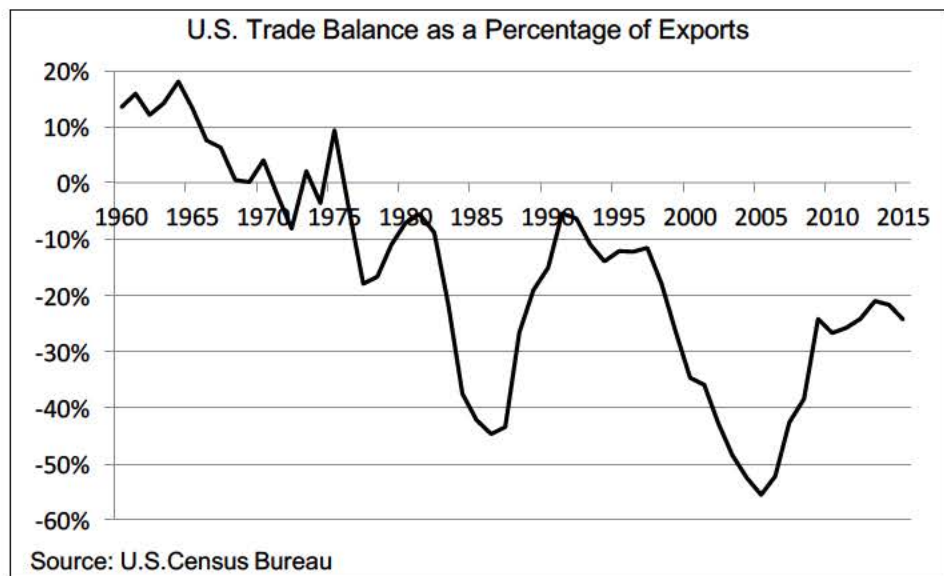
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THE U.S. TRADE DEFICIT

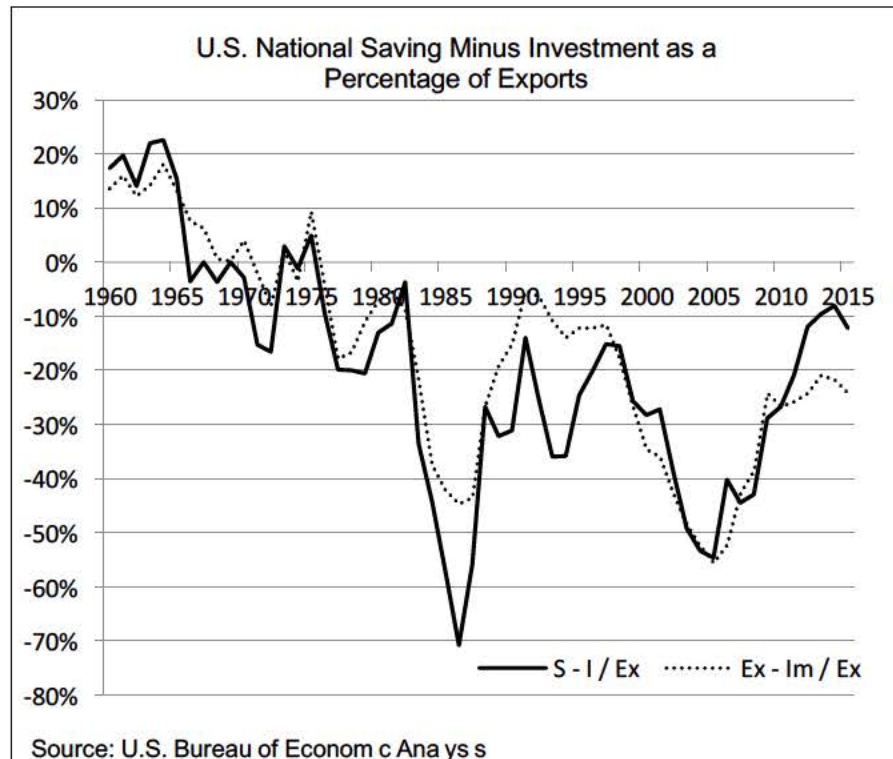
The value of U.S. exports has been less than the value of U.S. imports every year since 1976, and sometimes dramatically so. The "trade deficit" was particularly large in the 1980s, reaching 45% of U.S. exports in 1986 (i.e., imports exceeded exports by 45%). The deficit was even larger from the late 1990s through the late 2000s, reaching nearly 56% in 2005. It has declined since then; in 2015, imports exceeded exports by 24%.

The U.S. trade deficit over the last 40 years is primarily due to one thing: America's relatively low rate of national saving, which is mostly but not solely due to the large federal budget deficit. In fact, the federal budget deficit and the trade deficit are sometimes called the twin deficits.

Another way of understanding this is that since mid-1970s, Americans' collective spending has been more than our collective income, which manifests itself as our imports being greater than our exports. Furthermore, foreign investors (primarily foreign governments) have helped to fund our excess spending by investing in American debt.



The graph at right shows the difference between U.S. national saving and national investment (the solid line) as a percentage of exports. The dashed line represents the trade deficit, also as a percentage of exports. The two lines illustrate how closely these factors are related. Just like the trade deficit, the difference between national savings and investment has been negative (meaning savings was less than investment) every year since 1976. The



difference was particularly large in the 1980s, reaching a low point in 1986, and grew again from the late 1990s through the late 2000s.

The trade deficit is sometimes incorrectly attributed to unfair competitive advantages overseas (i.e., lax environmental and labor regulations), currency manipulation abroad (i.e., foreign governments devaluing their currencies and making American exports more expensive), and protectionist trade policies overseas. Although these factors could (but probably do not) affect the trade deficit in the short term, they have essentially no impact on the trade deficit in the long run.

If any of those factors were causing the U.S. trade deficit, then the value of the dollar would adjust (i.e., depreciate) to restore the balance of international payments. That is, if more dollars were flowing out of the U.S. to buy foreign products than were entering the U.S. to buy American products, then the net supply of U.S. dollars in the world currency market would be increasing. In that case, the basics of supply and demand suggest that the value of the dollar would fall (depreciate), thereby making U.S. imports more expensive and U.S. exports cheaper. That, in turn, would decrease imports and increase exports, thereby reducing the trade deficit. However, that has not happened. The countervailing force preventing it from happening, and the principal cause the U.S. trade deficit, is the foreign investment discussed above.

The fact that the U.S. trade deficit is due primarily to domestic choices yields several important implications. First, neither the TPP nor any other free-trade agreement is likely to have a noticeable impact on the American trade deficit. In other words, free-trade agreements are likely to increase both imports and exports by about the same amount. Second, any workable “solution” to the U.S. trade deficit must address the imbalance in net foreign investment, which means

increasing American national saving (probably by reducing the federal budget deficit). Reducing foreign investment in the U.S. would also reduce the trade deficit, but that would hurt American workers and consumers. Without foreign investment, U.S. wage growth would be lower and interest rates would be higher.

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THE IMPACT OF TRADE ON LABOR STANDARDS

Research on the connection between trade and labor standards is limited but growing, and the results are consistent. There is no evidence that countries with lower labor standards attract more foreign investment or enjoy greater export growth. On the contrary, there is evidence that trade openness improves labor standards.⁴² There is also evidence that workers in export-oriented industries enjoy higher pay and better conditions than workers in other sectors of developing economies. To understand these findings, it is important to note that not all employee benefits generate a net cost. Improvements to worker health, safety, literacy, and wages can increase productivity. Furthermore, countries with better labor standards have an advantage in attracting corporations who are increasingly sensitive to consumers’ demands for socially conscious labor practices. Increased trade also corresponds to higher income levels, which give workers greater ability to choose favorable working conditions and reduce child labor.

Low-income countries have resisted efforts to link labor standards with trade agreements enacted by groups such as the WTO. However, it has become more common for regional and bilateral trade agreements to include labor standards, albeit with varying levels of enforceability. The International Labor Organization (ILO), a United Nations agency, promotes four basic standards: eliminating forced labor, allowing unions and collective bargaining, abolishing child labor, and eliminating discriminatory hiring and labor practices.⁴³ These and other ILO standards sometimes serve as a benchmarks for labor provisions in new trade agreements.

Several recent U.S. agreements include labor standards, some with enforcement mechanisms that treat labor violations as seriously as other commercial violations. (See Section III for a discussion of labor standards in the TPP.) The U.S. has also experimented effectively with positive incentives for improving labor standards. The 1999 U.S.-Cambodia Textile Agreement offered limited access to U.S. markets for Cambodian apparel manufacturers with potential “quota bonuses” if they improved labor conditions. The two countries agreed to use the ILO as an independent monitor. The program successfully improved labor conditions and created hundreds of thousands of safe, well-paying jobs by local standards. The U.S. increased its quota for three consecutive years and Cambodian manufacturers voluntarily continued the monitoring program since it helped them compete for contracts with reputation-conscious Western corporations.

⁴² Samira Salem and Faina Rozental, “[Labor standards and trade: A review of recent empirical evidence](#).” *Journal of International Commerce and Economics*, August 2012.

⁴³ International Labor Organization, [Declaration on Fundamental Principles and Rights at Work](#). Adopted in 1998.

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THE IMPACT OF TRADE ON THE ENVIRONMENT

Economic activity in general, and international trade in particular, have significant environmental effects. Industrialization in low-income countries often creates localized pollution, and shipping goods around the world generates greenhouse gases that contribute to climate change. On the other hand, as countries develop and living standards rise, they tend to gain the resources, ability, and desire to clean up their environments. They also have access to newer, cleaner technologies that can help them reduce pollution faster and at lower cost than already-developed countries.

In the early 1990s, two economists theorized that pollution in low-income nations first rises as they industrialize, levels off, and then begins to fall once incomes reach some level.⁴⁴ Economists have found empirical evidence of this "Environmental Kuznets Curve" for a variety of air and water pollutants, as well as measures of deforestation and land conservation. However, for some pollutants, most notably carbon dioxide (CO₂), the evidence is mixed. The difference may be between localized and global pollutants.

In so much as trade generates economic growth, increased trade would move countries further along their Environmental Kuznets Curves. Some developed countries would pollute less while some developing countries would pollute more. The income levels at which studies have documented turning points along the curve vary by country and pollutant. Even for the pollutants where research has found a curve, some critics point out that most of the data is from now-rich countries. Some of their falling pollution levels may reflect the movement of pollution-intensive manufacturing operations to other, less developed countries. Others note that even if the Environmental Kuznets Curve does exist, the amount of pollutants emitted before the world's many developing nations reach their turning points could cause long-term damage, especially in relation to climate change. However, it is also possible that developing nations may be able to use new, cleaner methods and technologies to avoid increases in pollution seen historically in now-developed countries. In this way, trade may facilitate the spread of environmentally sensitive practices. Finally, increases in economic activity are not the only factors linked to environmental improvements; others include rising literacy rates, falling birth rates, and political reforms. Those factors often accompany economic growth but could be driving changes in pollution independently.

Transporting goods around the world is another source of environmental impacts. International shipping accounted for 2.2% of global CO₂ emissions in 2014.⁴⁵ Ships are becoming larger and more energy efficient but the total volume of international trade is projected to increase. Total

⁴⁴ Gene M. Grossman and Alan B. Krueger, "[Environmental impact of a North American Free Trade Agreement.](#)" National Bureau of Economic Research, Working Paper 3914, 1991.

⁴⁵ International Maritime Organization, [Third IMO GHG Study 2014](#), 2015.

greenhouse gas emissions from shipping is expected to increase 50-250% by 2050, based on industry estimates.⁴⁶

The transportation of food over thousands of miles has gained particular attention in recent years. “Food-miles” refers to the distance an item travels from producer to consumer. For instance, a kiwi from Chile travels over 5,000 miles to reach a grocery store in Maine. However, transportation is only one factor in the total amount of energy used to produce, transport, store, and distribute food. In some cases, importing food grown by low-energy means in a foreign country can be cleaner and more energy efficient than buying locally grown food. For instance, researchers in New Zealand claim it requires less energy to raise lamb in their warm, grass-rich climate and transport it to the United Kingdom than it requires for U.K. farmers to supply their lamb with feed during the cold winter months.⁴⁷ Similarly, growing flowers outdoors in Kenya and flying them to the Netherlands generates one-sixth the carbon dioxide as growing them in heated greenhouses in the Netherlands.⁴⁸

The relationship between economic growth, trade, and the environment is multidimensional and difficult to generalize. Adding to the complexity is the fact that much of the available research looks at pollution before serious multinational discussions about climate change. The 2015 Paris Agreement, signed by nearly 200 countries, may fundamentally change the relationship between economic growth and the environment. Indeed, some scholars point out that countries which are open to trade are also more likely to ratify multilateral environmental agreements. Trade agreements also create a potential mechanism for enforcing environmental goals, such as tariffs on carbon-intensive imports.

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⁴⁶ Ibid.

⁴⁷ Caroline Saunders, Andrew Barber, and Greg Taylor, “[Food miles: Comparative energy/emissions performance of New Zealand’s agricultural industry](#).” Lincoln University (New Zealand), Research Report 285, 2006.

⁴⁸ G. Edward-Jones, et al., “[Vulnerability of exporting nations to the development of a carbon label in the United Kingdom](#).” *Environmental Science & Policy* 12, 2009.

SECTION II

MAINE’S ECONOMY POST-NAFTA

Maine’s economy is fundamentally different than it was on January 1, 1994, when the North American Free Trade Agreement (NAFTA) became law. Since then, Maine has seen the rise of call centers, composites, wind power, the health care industry, biotechnology, “Buy Local,” and the world-class success of employers such as Idexx, WEX, and Cianbro. It has changed its technical colleges into community colleges and grown enrollment by over 40%.⁴⁹ Maine also has seen the aging of the rural population, two military base closures, a massive change of ownership in the North Woods, countless mill layoffs, and the further decline of manufacturing. These events have marked Maine’s transformation from an economy historically based on manufacturing and natural resources to one based on innovation and services.

These structural changes have important implications for how trade agreements affect Maine’s economy. If the 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 agreements 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 more low-cost imports; and Maine service providers may gain if their customers have greater purchasing power.

ABOUT NAFTA

In 1990, the United States, Canada, and Mexico agreed to negotiate a trilateral free trade agreement. After nearly two years of negotiations, the countries’ leaders, including U.S. President George H. W. Bush, signed NAFTA in 1992. The U.S. Congress passed it in 1993, President Bill Clinton signed it into law, and the agreement took effect on January 1, 1994. NAFTA created one of the world’s largest free trade zones. It lowered tariffs, facilitated the movement of people and capital across international borders, and established guidelines for competition, intellectual property rights, and dispute resolution. NAFTA built on the Canada-U.S. Free Trade Agreement signed in 1988.

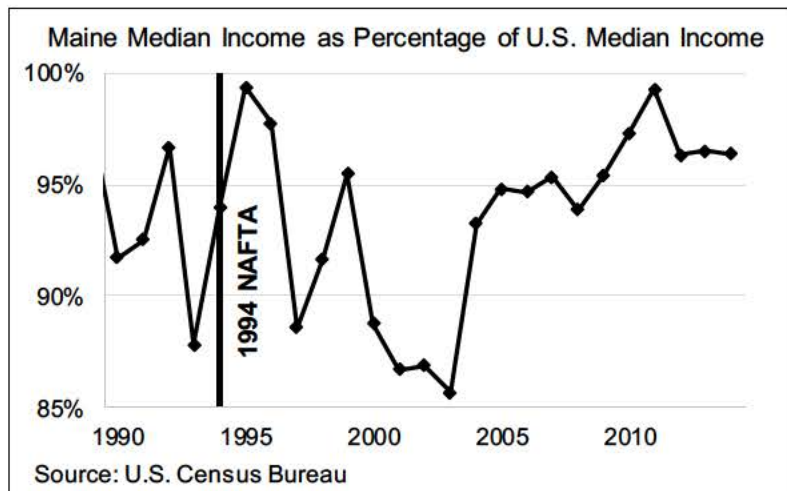
MEASURES OF OVERALL GROWTH

By several key measures, Maine’s overall economy has grown since 1994. On average, median household income rose 0.86% per year adjusting for inflation, surpassing the national rate of 0.31%.^{50, 51} In all, Maine incomes rose from 94.0% of the U.S. median in 1994 to 96.3% in 2014, although the rise was erratic. The graph below shows how Maine incomes sometimes declined as a share of U.S. incomes during the 1990s and early 2000s. Those dips reflect fluctuations in Maine incomes, not the U.S.

⁴⁹ Maine Community College System, “[2015-2016 fact sheet](#),” 2016.

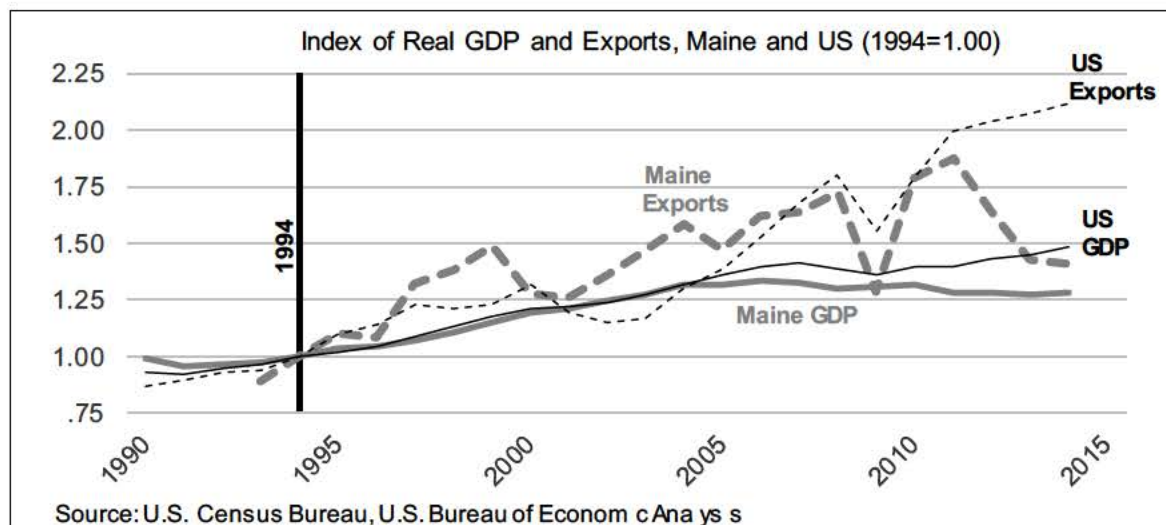
⁵⁰ Maine’s median household income is the income level where half of Maine households earn higher incomes and half earn lower incomes. In 2014, Maine’s median income was \$51,710; the U.S. median income was \$53,657.

⁵¹ U.S. Census Bureau, Current Population Survey.



The broadest measure of Maine's economy, its gross domestic product (GDP), also grew after 1994. GDP is the value of all goods and services produced in a state. From 1994 to 2014, Maine's "real"⁵² GDP increased by 29%.⁵³ However, U.S. real GDP grew 49% during that time. The difference seems to be that Maine GDP stagnated after 2004, while U.S. GDP continued to grow, albeit very slowly. Exports have been a bright spot for

Maine, increasing at over twice the annual rate of the rest of the economy (3.1% compared to 1.3%).⁵⁴ In 2015, Maine's top five export products were lobster (12.2% of total exports), civilian aircraft and parts (8.7%), electronic integrated circuits (8.3%), coniferous wood (5.7%), and chemical woodpulp (4.9%).⁵⁵ Top export destinations were Canada (46.5%), Malaysia (7.7%), China (7.6%), Germany (3.8%), and Japan (3.0%).⁵⁶ Prior to 2007, growth of Maine exports often exceeded U.S. growth; since 2007, it has generally lagged.



Employment measures paint a similar picture of slowing growth. Maine has almost 90,000 more jobs than it did prior to NAFTA (17% growth), but gains have been stifled by two national recessions, the continued decline of manufacturing, and slow population growth. From 1994 until the 2001 recession, employment in Maine grew over 2% per year on average.⁵⁷ Growth

⁵² Statistics that have been adjusted to remove the impact of inflation are referred to as "real."

⁵³ Bureau of Economic Analysis (BEA)

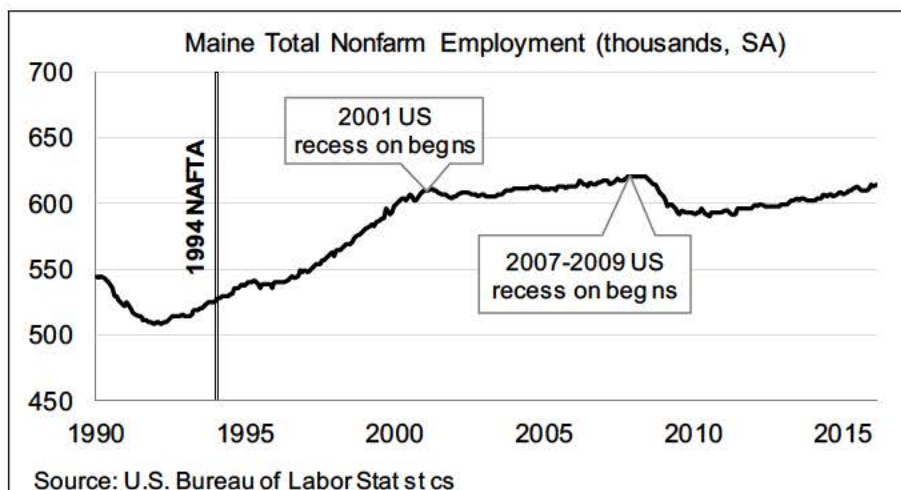
⁵⁴ BEA and U.S. Census Bureau, Economic Indicators Division

⁵⁵ U.S. Census Bureau, [U.S. exports by origin state](#)

⁵⁶ Ibid.

⁵⁷ BLS, State and Area Employment.

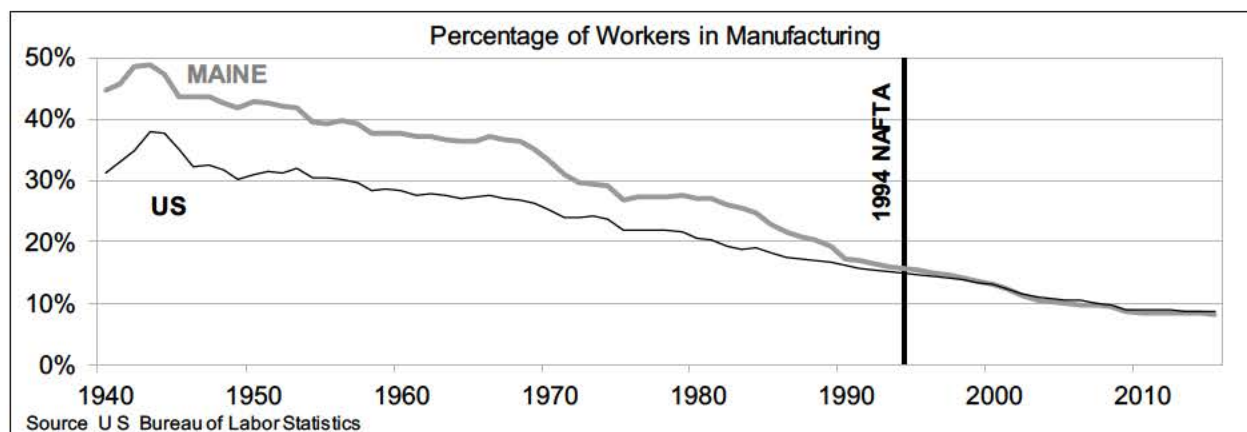
then slowed to 0.3% annually until the next national recession began in 2007. During the “Great Recession,” employment in Maine fell 4% and then resumed growing at about 0.5% annually. This sequence of events demonstrates that changes in the national economy can impact the state far more directly than changes to trade policy



Overall job gains mask deep losses in some industries. From 1994 to 2015, the number of Maine workers employed in manufacturing fell 40%, from 83,000 to 50,000.⁵⁸ That decline was spread across many industries, with concentrations in paper, leather products, transportation equipment, computer

and electronic products, and wood products.⁵⁹

These job losses are part of a sectoral decline in manufacturing that predates NAFTA by fifty years. During World War II, the industry employed nearly half (48.8%) of all Maine workers and 37.9% of U.S. workers.⁶⁰ The graph below shows those percentages gradually merging over the next sixty years. While this transition has not been painless, it does seem to be drawing to a close. As the Brookings Institution noted in 2006, “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.”⁶¹



⁵⁸ BLS, Current Employment Statistics (CES)

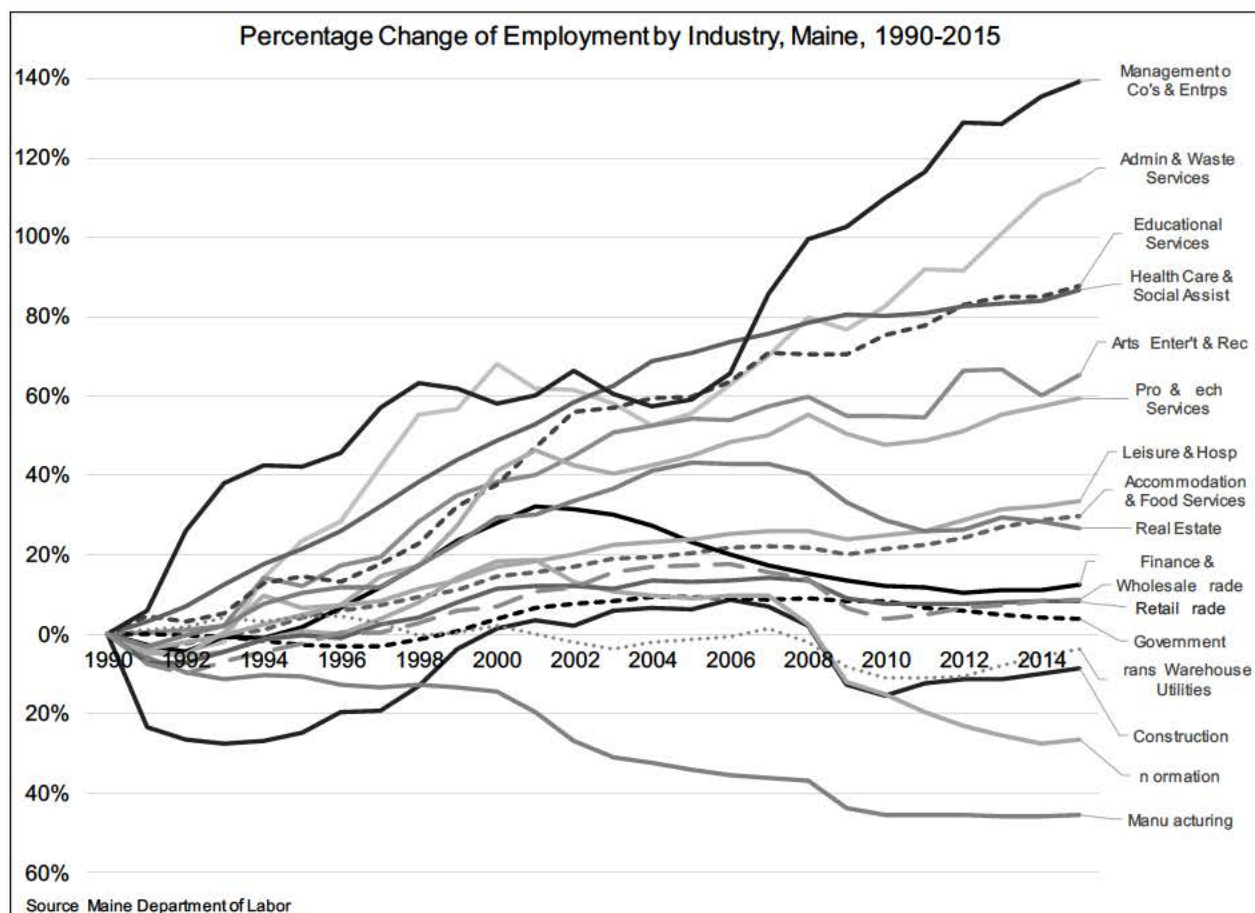
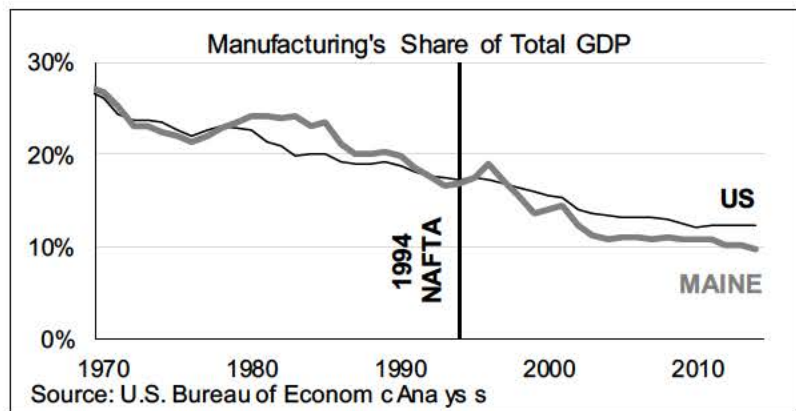
⁵⁹ BLS, CES and Quarterly Census of Employment and Wages (QCEW)

⁶⁰ BLS, CES

⁶¹ The Brookings Institution, “[Charting Maine’s future: An action plan for promoting sustainable prosperity and quality places.](#)” Washington, DC, 2006.

The chart at right shows the same trend in manufacturing's share of GDP. Since 1970, the value of manufactured products as a percentage of all goods and services has declined in Maine and the U.S. Manufacturing's contribution to Maine's economy briefly grew during the 1980s before dipping to levels below the U.S. average after 1997. The fact that manufacturing in Maine

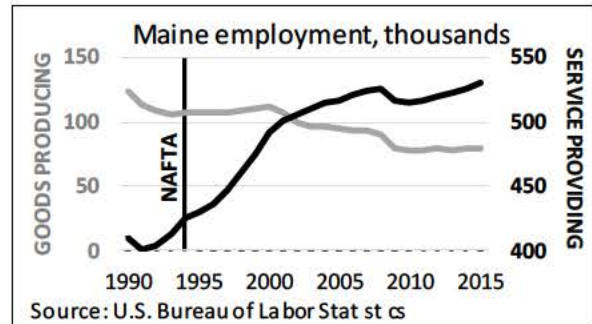
now employs a similar share of workers as in the U.S. yet contributes a smaller share of GDP means that output per worker ("productivity") in Maine is less than elsewhere in the nation. Productivity reflects both human capital (workers' skills and ideas) and physical capital (the technology and equipment available to them).



As employment in Maine's manufacturing sector has fallen, other sectors have grown. The above chart shows the growth of employment by industry since 1990. Management and administrative services had the highest percentage gains during that time (139% and 114% respectively) adding

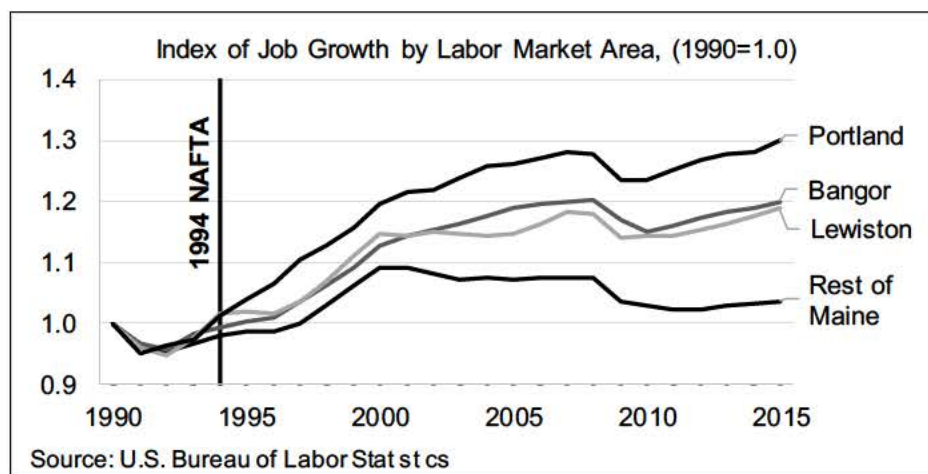
5,400 and 16,000 jobs respectively.⁶² The health care industry accounted for the largest absolute employment increase, expanding by 47,600 jobs from 1990 to 2015 (an 87% increase).⁶³

These trends reflect a shift of economic activity from goods to services that has occurred throughout the U.S. Technological advances and increased trade with low-wage countries have lowered the cost of many goods, and given U.S. consumers more income to spend on services like 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).⁶⁴ 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 described above 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.



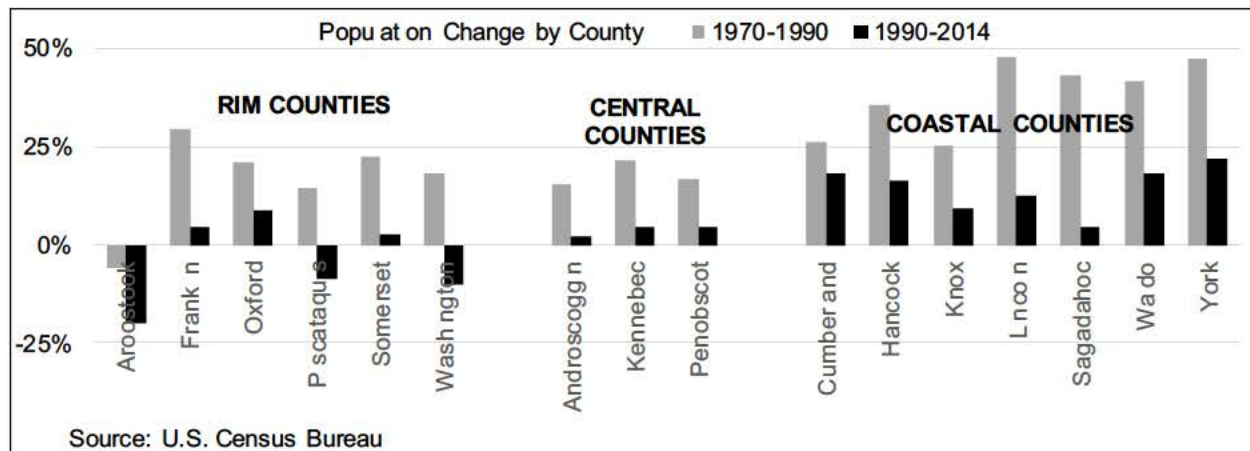
The graph at left compares job growth in Maine's three largest urban areas to the rest of the state. From 1990 to 2015, jobs in the Portland labor market area grew 30%, Bangor and Lewiston grew 20% and 19% respectively, and the rest of Maine grew just 4%.

⁶² Maine Department of Labor (MDOL)

⁶³ Ibid

⁶⁴ BLS, QCEW

These job trends go hand in hand with population growth. From 1990 to 2014 Cumberland, Hancock, Waldo, and York counties grew by over 15% while Aroostook, Piscataquis, and Washington lost residents.⁶⁵ However, even the fastest growing counties have not grown as much in the last two decades as they did in the previous two decades, as shown below.⁶⁶ In fact, the decline of Maine's working-age population is projected to become a serious hindrance to future economic growth.⁶⁷



Further Reading

- The Brookings Institution, "[Charting Maine's future: An action plan for promoting sustainable prosperity and quality places](#)," Washington, DC, 2006.
- Maine Department of Labor, Center for Workforce Research and Information, "[Manufacturing jobs: Trends, issues, and outlook](#)," Augusta, ME, 2012.
- James Breece, Glenn Mills, and Todd Gabe, "[The economic implications of Maine's changing age structure](#)," *Maine Policy Review*, 24(2), 2015.

THE ROLE OF TRADE

The role of international trade in these changes has been debated for years. In 2003, the Maine State Legislature authorized, "The Effects of NAFTA on the Maine Economy," a report by Planning Decisions, Inc. that assessed Maine's economic gains and losses in the first decade of NAFTA's existence. During that time, the report noted, trade with Canada and Mexico (both exports and imports) 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 also grew, particularly in natural-resource industries like food and wood products. Furthermore, access to low-cost imports generated widespread consumer savings. Maine both lost and gained manufacturing jobs as a result of NAFTA but, the report asserts, the overall effect was likely a net loss in this area. However, the report noted increases in broader

⁶⁵ U.S. Census Bureau, Annual Population Estimates and Decennial Census

⁶⁶ Rim counties are defined as Aroostook, Franklin, Oxford, Piscataquis, Somerset, and Washington. Central counties are Androscoggin, Kennebec, and Penobscot. Coastal counties are Cumberland, Hancock, Knox, Lincoln, Sagadahoc, Waldo, and York.

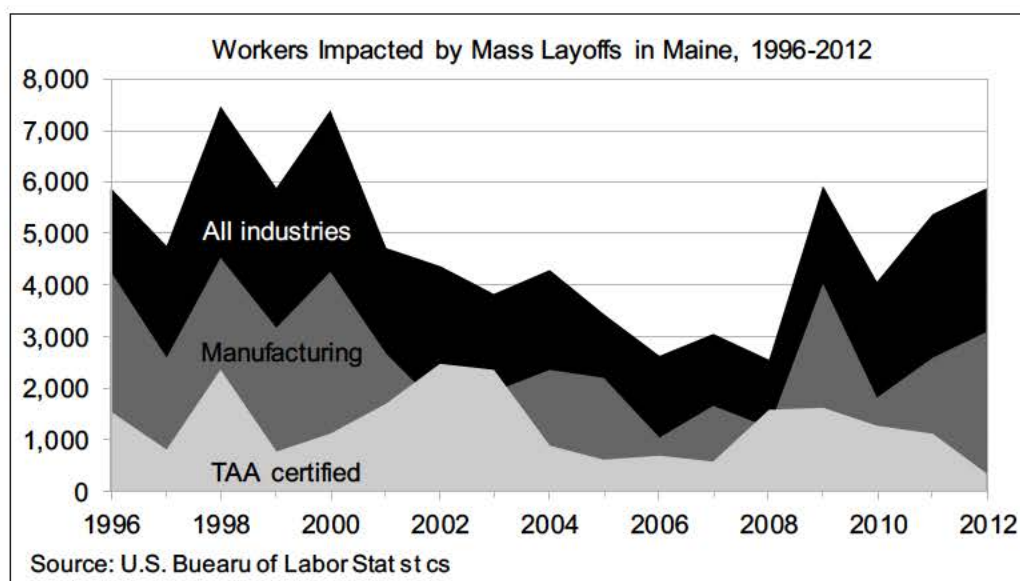
⁶⁷ James Breece, Glenn Mills, and Todd Gabe, "[The economic implications of Maine's changing age structure](#)," *Maine Policy Review*, 24(2), 2015.

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, albeit 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. The following paragraphs present various aspects of trade's effects, as revealed by multiple indicators.

Trade-Induced Job Losses

The following graph contextualizes trade's impact on employment in general, and manufacturing in particular. It shows the number of Maine workers involved in mass layoffs from 1996 to 2012 (81,487), as well as the number who qualified for Trade Adjustment Assistance (TAA), meaning the U.S. Department of Labor determined that foreign trade was an important factor in their job loss. In all, 55% of layoffs during that time occurred in manufacturing.⁶⁸ Twenty-seven percent of workers qualified for TAA. Seventy-three percent of laid-off workers did not qualify, meaning that other forces such as technological advances, changing consumer demand, or domestic competition contributed to their layoff.⁶⁹ So while trade was a contributing factor to layoffs in Maine during this time, it was certainly not the sole factor. Furthermore, available TAA statistics do not specify which country's exports adversely impacted the company laying off workers, so it is impossible to connect these job losses to specific trade agreements.



In 2009, Maine Department of Labor (MDOL) published a report on the impact of international trade on Maine manufacturing workers. It observed, "...Those 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."⁷⁰ In

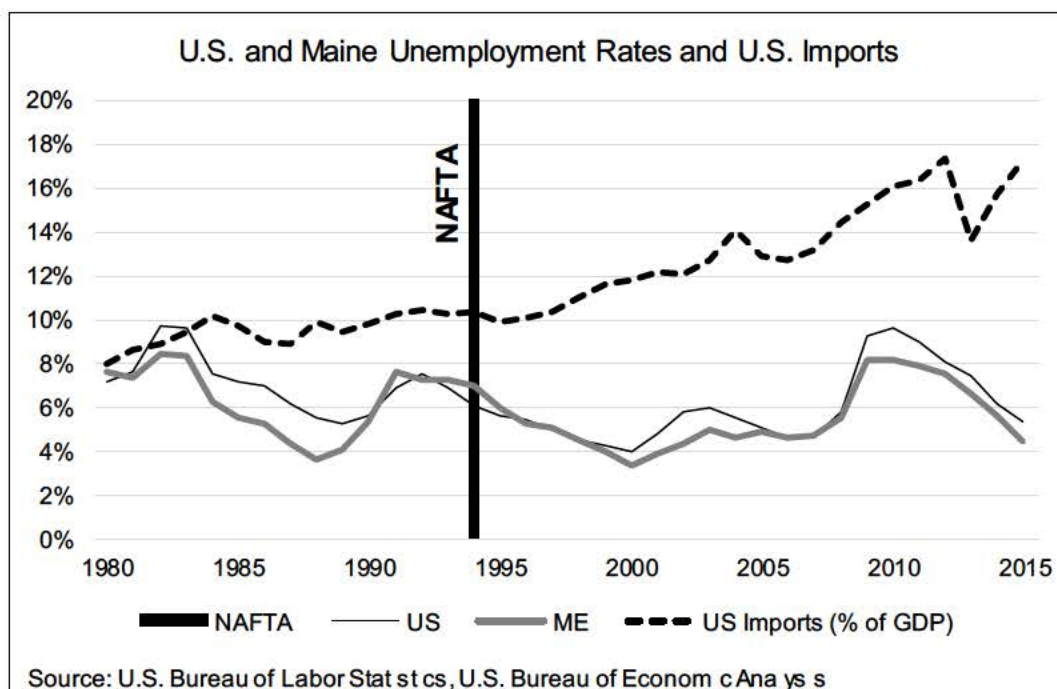
⁶⁸ BLS, [Mass layoff statistics](#), 2013.

⁶⁹ Michael Burnett, "[The impact of international trade on Maine manufacturing workers](#)," MDOL 2009.

⁷⁰ Ibid.

2012, MDOL wrote, "...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."⁷¹ Indeed, from 1990 to 2010, Maine's manufacturing workforce became more productive and better educated.⁷² The total value of manufactured goods they produced stayed relatively constant even as employment fell.⁷³ In discussing Maine's textile and apparel industry, MDOL noted, "...workers in the few innovative surviving firms have had substantial real wage gains."⁷⁴

The following chart shows the relationship between unemployment in Maine and the U.S. and the growth of imports as a percentage of U.S. GDP. Imports have steadily climbed over the last thirty years. At the same time, the unemployment rate has risen and fallen through multiple business cycles.



Foreign Investment

Foreign investment is another economic factor affected by trade agreements. Foreign investment typically helps U.S. workers through increases in wages, research and development, exports, and productivity. In 2003, Planning Decisions noted increased Canadian investment following the passage of NAFTA. That trend has continued and expanded beyond natural resources to areas as diverse as finance (TD Bank), convenience stores (Circle K), and wind power (TransCanada). Maine's connections with its northern neighbor reveal themselves in unexpected ways. In October 2015, Governor Paul LePage, Senator Susan Collins, and Senator Angus King criticized the U.S. Department of Commerce for imposing a tariff on certain Canadian paper because two

⁷¹ MDOL, "[Manufacturing jobs: Trends, issues, and outlook](#)," 2012.

⁷² Ibid.

⁷³ BEA, state gross domestic product by industry; BLS, state employment by industry

⁷⁴ Burnett, 2009.

of the four impacted companies have operations in Maine. In a letter to the White House, Governor LePage cited the 1,200 Maine workers employed by those Canadian companies and said the proposed tariff would have a “profound negative impact on the state of Maine.”⁷⁵

Employment by foreign-majority-owned affiliates in Maine increased 34% between 1993 and 2013, nearly double the growth rate of overall employment (18%). Belgium-based Delhaize Group owns Hannaford Brothers, Maine’s largest private employer with over 7,500 employees. In 2013, there were approximately 344 foreign affiliates with operations in Maine. Represented countries include United Kingdom (49), Japan (48), Canada (42), Germany (33), and France (28).

	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: U.S. Bureau of Economic Analysis

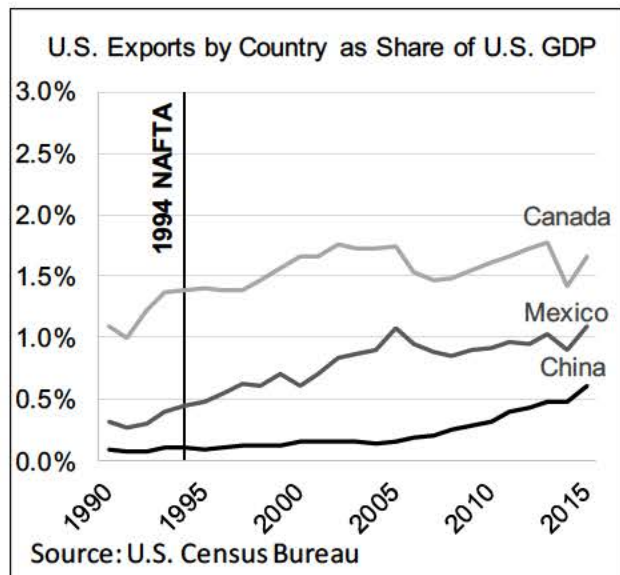
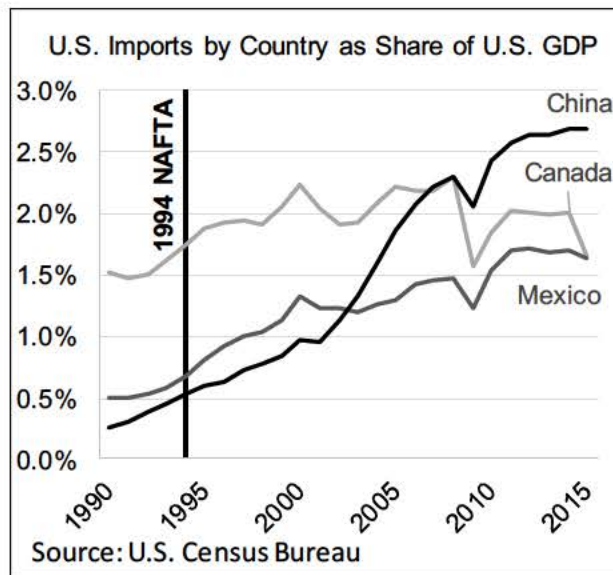
Trade with China

Perhaps the most noteworthy change in international trade since 1994 has nothing to do with Canada or Mexico. It is the rapid growth of imports from low-income countries with an abundance of low-skilled labor, most notably China. State import data do not exist, but it is reasonable to assume that national trends reflect circumstances at the state level. The following graphs compare the growth of U.S. trade with Canada, Mexico, and China. As a percentage of U.S. GDP, goods imported from Canada have been relatively stable since 1994, averaging 2%; Mexican imports have grown from 0.7% to 1.6%; and Chinese imports have grown more than fivefold from 0.5% to 2.69%.⁷⁶ The U.S. has no trade agreement with China other than the rules of the WTO, of which both countries are members. Nevertheless, goods from China have increased from less than 5.8% of total U.S. imports in 1990 to 21.5% in 2015.⁷⁷ It is impossible to assess NAFTA’s impact on Maine and the U.S. without understanding the unrelated yet simultaneous increase in Chinese imports that occurred after NAFTA became law.

⁷⁵ Edward D. Murphy, “[Tariffs on Canadian paper may help, hurt mills in Maine.](#)” *Portland Press Herald*, October 15, 2015.

⁷⁶ U.S. Census Bureau, [Exports, imports and trade balance by country](#), 2016.

⁷⁷ Ibid.



Further Reading

- Michael Burnett, "[The impact of international trade on Maine manufacturing workers.](#)" Maine Department of Labor, Center for Workforce Research and Information, 2009.
- Planning Decisions, Inc., "[The effects of NAFTA on the Maine economy.](#)" December 31, 2003.

SUMMARY

Maine's economy has changed in fundamental ways since NAFTA became law. While it is impossible to quantify the myriad impacts of that agreement on jobs, incomes, and consumer prices, it is possible to observe that Maine's economy has grown since 1994. Growth has occurred unevenly across the state, it has often lagged U.S. 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.

Maine's economy is now less reliant on manufacturing, and the surviving firms in that industry are better equipped to compete internationally than their erstwhile peers. Maine's economy is now more reliant on services, which are less easy to trade internationally. These fundamental shifts change how future trade agreements will affect Maine's economy. For instance, there are now fewer import-sensitive manufacturers relying on low-skilled labor than in the past. Whether Maine gains net jobs will depend on the ability of its businesses to capitalize on the new opportunities created by increased trade and the related increases in consumer purchasing power.

SECTION III ABOUT THE TRANS-PACIFIC PARTNERSHIP

BACKGROUND

The Trans-Pacific Partnership (TPP) is a free trade agreement (FTA) negotiated by twelve Pacific-Rim countries: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the U.S., and Vietnam. If passed, it would be the largest FTA in which the U.S. participates.⁷⁸ Those countries accounted for 36% of world GDP in 2014, although most of that was the U.S. (22% of world GDP).⁷⁹ The TPP's stated goal is "...to liberalise trade and investment, bring economic growth and social benefits, create new opportunities for workers and businesses, contribute to raising living standards, benefit consumers, reduce poverty and promote sustainable growth..."⁸⁰

All TPP countries are members of the World Trade Organization (WTO), meaning they already abide by an extensive set of rules on anti-competitive practices and dispute resolution. By negotiating the TPP, the parties hope to secure even more favorable terms of trade for their businesses and consumers. Furthermore, trade liberalization talks at the WTO have been stalled for nearly a decade and smaller, regional trade agreements provide better opportunities for negotiating complex issues such as intellectual property rights, copyright laws, international data flows, debit and credit cards, customs regulations, and environmental and labor practices.⁸¹ The TPP includes sections on all of those topics and more.

The U.S. has existing trade agreements with six TPP members: Australia, Canada, Chile, Mexico, Peru, and Singapore. Collectively, those countries plus the U.S. account for over 80% of the total economic output of the TPP region. Given the large portion of the TPP region with which the U.S. has already liberalized trade to some degree, the TPP's primary impact on the U.S. economy will be in liberalizing trade with the other five countries. The TPP is designed to be a living agreement that could add new countries over time. However, this report addresses only the agreement's current membership.

⁷⁸ If the TPP became law, NAFTA and other FTAs would remain in effect. Where TPP and other FTAs differ (in terms of tariff rates, rules of origin, etc.) firms could choose which agreement to use.

⁷⁹ World Bank, [GDP at market prices \(current US dollars\)](#), 2016.

⁸⁰ TPP, [preamble](#), 2015.

⁸¹ David Francis, "[The U.S.-Asia trade deal puts dysfunction at the WTO on full display](#)," *Foreign Policy*, October 7, 2015.

TPP Member Country		% World GDP 2014	% World Population 2015	Per Capita Income 2014	Average Tariff
<i>Existing U.S. FTA</i>	<i>No Existing U.S. FTA</i>				
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%
	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 U.S. trade agreement		29.1%	7.7%		
TPP members without existing U.S. trade agreement		6.9%	3.4%		

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

From the U.S. perspective, the TPP's most significant new market is Japan, a large, relatively high-income country with protectionist tariffs in several important areas. Japan's population is the same size as Mexico (127 million in 2015) but its per capita income is equivalent to the European Union.⁸² Japan is the U.S.'s third largest export market in the TPP after Canada and Mexico, importing \$62.5 million worth of U.S. goods in 2015.⁸³ In recent years, Japan has begun to loosen its historically high tariffs on some products (discussed below), motivated in part by its struggling domestic economy.⁸⁴ Japan signed an FTA with Australia in 2014 and it is currently negotiating an agreement with the European Union. Some proponents of the TPP argue that without it U.S. companies will begin to lose market share in Japan.⁸⁵

Malaysia and Vietnam also stand out among the TPP members without existing U.S. FTAs. They have sizable populations (30 million and 92 million respectively), fast-growing economies, and relatively low wages. From 2010 to 2015, the average annual growth of U.S. imports from Vietnam and Malaysia was 21% and 6% respectively.⁸⁶ Furthermore, these countries currently impose relatively high tariffs on U.S. imports, averaging 9.5% and 6.1% respectively.

The TPP is a massive agreement. The proposed tariff schedule for the U.S. alone is nearly 400 pages. This summary presents the most important components of the agreement from the standpoint of Maine's economy.⁸⁷ This report does not discuss the TPP's potential geo-political

⁸² In 2014, per capita income in the European Union, Japan, and Mexico was \$36,194, \$36,448, and \$10,326 respectively. Source: World Bank.

⁸³ U.S. Census Bureau, Foreign Trade Division.

⁸⁴ Brian Wingfield, "[Japan seen as ending protectionism, avoid 'second-rate' role](#)," Bloomberg, June 19, 2013.

⁸⁵ U.S. Department of Agriculture, Foreign Agricultural Service, "[Trans-Pacific Partnership: Benefits to U.S. Agriculture](#)," May 9, 2016.

⁸⁶ U.S. Census Bureau, Foreign Trade Division.

⁸⁷ For a longer summary of the agreement, see Ian F. Fergusson and Brock R. Williams, "[The Trans-Pacific Partnership: Key provisions and issues of Congress](#)," Congressional Research Service Report 44489, 2016.

significance. On that topic, the authors recommend the Congressional Research Service's report "The Trans-Pacific Partnership: Strategic implications."

Further Reading

1. Ian F. Fergusson, Mark A. McMinimy, and Brock R. Williams, "[The Trans-Pacific Partnership negotiations and issues for Congress](#)," Congressional Research Service, R42694, 2015.
2. Brock R. Williams et al., "[The Trans-Pacific Partnership: Strategic implications](#)," Congressional Research Services, R44361, 2016.

NOVEL COMPONENTS

FTAs in general, and U.S. FTAs in particular, have become more and more comprehensive over time. Continuing this trend, the TPP contains several novel components. The following list is drawn from various reports by the Congressional Research Service. The TPP is the first U.S. 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 standalone 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 anti-smoking measures from dispute settlement.

TARIFF AND QUOTA REDUCTIONS

While the TPP is significant for its novel components, its tariff and quota reductions (the historical core of FTAs) will still be important determinants of its economic impact. The following section summarizes those reductions. It is important to note that the U.S. negotiated bilateral tariff schedules with each TPP party so the rate of trade liberalization on a particular product may differ by country. This allowed the U.S. to maintain high tariffs on some products, such as Japanese light trucks and New Zealand dairy. Most other TPP countries negotiated a single schedule that applies to all other members.

Goods

The TPP would eventually eliminate nearly all tariffs on goods traded between member countries, but the phase-out periods vary significantly. On one end, Singapore would eliminate all tariffs on all goods as soon as the agreement takes effect. On the other end, the U.S. would eliminate most tariffs within a decade but others would remain in place for up to thirty years. The following table shows the number of unique product categories that each country has identified for special treatment and the longest phase-out period.

TPP Member Country		Number of Unique Product Categories	Longest Phase-Out Period (Years)
<i>Existing U.S. FTA</i>	<i>No Existing U.S. FTA</i>		
Australia		7	4
Canada		7	12
Chile		3	8
Mexico		20	16
Peru		6	16
Singapore		1	0
United States		36	30
	Brunei	10	11
	Japan	60	21
	Malaysia	6	16
	New Zealand	4	7
	Vietnam	36	21

Source: Congressional Research Service

Apparel and footwear

In 2015, U.S. consumers spent \$1.5 trillion on clothing and footwear.⁸⁸ According to the American Apparel and Footwear Association, 97% of clothes and 98% of footwear sold in the U.S. are imported.⁸⁹ Gaining access to this market is important for other TPP members, especially Vietnam, which is rapidly growing in both industries. The U.S. has agreed to eliminate tariffs immediately on many items of apparel and footwear. However, tariffs on some items with remaining U.S. producers, such as certain types of work boots, suits, coats, baby clothes, and sweaters, would be eliminated over 10 to 12 years. Those reductions would lower prices for U.S. consumers.

Many U.S. companies have factories in Vietnam and Malaysia; tariff reductions would lower their costs as well. For instance, Nike, has 75 factories in Vietnam and 21 in Malaysia.⁹⁰ It pays tariffs on items it ships to the U.S. from those facilities. For this reason, Nike and other members of the American Apparel and Footwear Association and the Footwear Distributors and Retailers of America have endorsed the agreement.

New Balance, an athletic-shoe maker which has approximately 900 employees at operations in Norridgewock, Skowhegan, and Norway, Maine, is unique in its industry for opposing the TPP.⁹¹ Although it imports some shoes and shoe components, a large part of its business is U.S.-made shoes that currently benefit from a tariff on lower-cost imported shoes. The TPP would lower

⁸⁸ BEA, National Income and Product Accounts, [Personal Consumption Expenditures by Major Type of Product](#), 2016.

⁸⁹ American Apparel and Footwear Association, [ApparelStats 2014 and ShoeStats 2014 Reports](#), January 9, 2015.

⁹⁰ Nike, [Nike manufacturing map](#), accessed July 7, 2016.

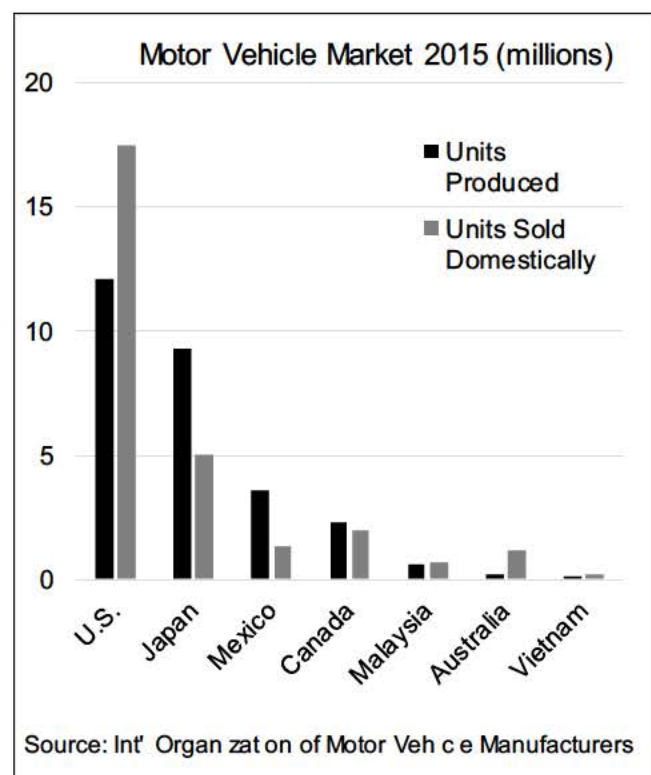
⁹¹ New Balance, [New Balance Corporate Fact Sheet](#), June 29, 2015.

and eventually eliminate that tariff. That would lower prices for U.S. athletic-shoe buyers but potentially make New Balance's domestic operations unviable. Separate bills approved by both the U.S. House of Representatives and U.S. Senate would require the Department of Defense to purchase only U.S.-made athletic shoes for military recruits.⁹² Since New Balance and Wolverine Worldwide, a Michigan shoemaker, 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, the bills are not yet law.

The TPP has a mechanism by which the US can re-impose tariffs if imports jump to a level that threatens an entire domestic industry (although not individual companies such as New Balance). The U.S.-Vietnam agreement within the TPP also allows the U.S. to suspend tariff reductions after five years if it determines that Vietnam has not made progress on allowing "grassroots" labor unions.⁹³

Motor vehicles

Several TPP members have large auto industries, so treatment of those goods was an important topic of negotiations. The U.S. and Japan are the world's second and third largest motor vehicle manufacturers (behind China), and Mexico and Canada each produce several million vehicles annually.⁹⁴ Furthermore, the U.S. is the world's second largest market for motor vehicles (passenger cars and commercial vehicles). The following graph shows the number of motor vehicles produced and sold domestically in the seven TPP countries with auto industries.



For countries with which the U.S. does not have an existing FTA, current tariffs on most passenger cars are 2.5%. That would be in eliminated over 10 years, or 25 years in the case of Japan.⁹⁵ Tariffs on light trucks (pick-up trucks) are 25% and would be reduced gradually over 10 years for all but Japan. U.S. tariffs on Japanese trucks would remain 25% until falling to 0% in year 30. These reductions would lower the prices of cars and trucks for U.S. consumers.

In return for U.S. tariff reductions, Malaysia would eliminate its motor vehicle tariffs, which range up to 30%, in 10 to 12 years;⁹⁶ Vietnam would eliminate its tariffs, some as high as 70%,

⁹² Jon Chesto, "[New Balance scores legislative victory in Pentagon fight](#)," *Boston Globe*, June 25, 2016.

⁹³ United States Trade Representative, [United States-Viet Nam Plan for the Enhancement of Trade and Labour Relations](#), 2016.

⁹⁴ International Organization of Motor Vehicle Manufacturers, [2015 Production Statistics](#).

⁹⁵ USITC, [TPP Tariff Schedule of the United States](#), 347-348.

⁹⁶ USITC, [TPP Tariff Schedule of Malaysia](#), 310-320.

over 12 years.⁹⁷ Japan does not impose tariffs on vehicle imports but U.S. automakers allege that it has restrictive non-tariff barriers such as overly rigorous safety inspections and tax breaks on “mini-vehicles,” which are made by many Japanese automakers but few U.S. automakers.⁹⁸ In 2015, foreign-brand vehicles accounted for just under 6% of total sales in Japan.⁹⁹ In a side agreement to the TPP, Japan has agreed to address a number of these non-tariff barriers, such as accepting some U.S. safety regulations as being equivalent to Japanese standards.

Agriculture

The U.S. is a net exporter of agricultural goods, with exports exceeding imports by \$19.5 billion in 2015.¹⁰⁰ Foreign markets are an important source of demand for the industry, accounting for about 20% of U.S. agricultural production, and more than 50% of some crops such as cotton, tree nuts (mostly almonds), rice, and wheat.¹⁰¹

Japan, Malaysia, and Vietnam, with a combined population of nearly 250 million, present the most significant new opportunities for U.S. exporters. The U.S. does not currently have FTAs with those countries and their average agricultural tariff ranges from 9.3% in Malaysia to 16.3% in Vietnam, with some commodities taxed even higher. Japan is the greatest near-term opportunity given its large population, relatively high incomes, and high tariffs on select goods like beef, rice, and dairy products. Vietnam is a lower-income country but it is growing rapidly and is a source of potential long-term opportunity.

TPP Member Country		Population 2015 (millions)	Average agricultural tariff	Share of agricultural tariffs greater than 15%
<i>Existing U.S. FTA</i>	<i>No Existing U.S. FTA</i>			
Australia		24	1.2%	0.5%
Canada		36	15.9%	9.4%
Chile		18	6.0%	0.0%
Mexico		127	17.6%	42.6%
Peru		31	4.1%	0.0%
Singapore		6	1.1%	0.2%
United States		321	5.1%	5.6%
	Brunei	0.4	0.1%	0.0%
	Japan	127	14.3%	20.8%
	Malaysia	30	9.3%	8.1%
	New Zealand	5	1.4%	0.0%
	Vietnam	92	16.3%	41.0%
Total, All TPP members		817		
TPP members with existing U.S. FTA		563		
TPP members without existing U.S. FTA		254		

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

⁹⁷ USITC, [TPP Tariff Schedule of Vietnam](#), 858-897.

⁹⁸ American Automotive Policy Council, “[How Japan has maintained the most protected and closed auto market in the Industrialized world](#),” January 20, 2012.

⁹⁹ Import data from the [Japanese Automobile Importers Association](#) and total sales data from the International Organization of Motor Vehicle Manufacturers.

¹⁰⁰ USDA Economic Research Service, “[Ag and food statistics: Charting the essentials](#),” 2016.

¹⁰¹ Ibid.

The U.S. would eliminate most agricultural tariffs within 10 years. After thirty-years, the only remaining tariffs or tariff quotas would be on select dairy, sugar, and chocolate products. These tariff reductions would lower prices for U.S. consumers. Examples of tariffs to be eliminated include 14.9% on baby carrots; 21.3% on asparagus and some corn; 29.8% on onion powder, dates, and cantaloupes; up to 163.8% on peanuts; and 350% on tobacco.¹⁰² For some U.S. products, such as dairy, there are what the TPP calls “safeguards” that allow the U.S. to increase tariffs if imports exceed a certain threshold. It is important to note that these measures protect producers by limiting the choices of consumers. They would go into effect if U.S. consumers were choosing to buy large amounts of certain imported foods, because of either lower prices or better quality (real or perceived).

The TPP contains several noteworthy agricultural measures beyond tariff reduction. It outlines guidelines for designating and appealing Geographical Indications (GI) – names that describe a specific product from specific region, such as “Champagne,” “Parmesan,” or “Maine lobster.” TPP countries have agreed not to recognize GIs if they are commonly used terms in their countries. This is in contrast to the European Union, which generally favors broader GI protections than the U.S. For instance, the E.U. restricts the use of “feta” to cheese produced in a particular manner in Greece. The U.S. opposes that restriction, saying “feta” has entered into common usage in the U.S.

The TPP does not establish standards for labeling food containing genetically modified organisms (GMOs). Instead, it establishes a working group on the issue, with countries agreeing to share information on national laws and regulations. Similarly, the TPP does not establish standards for labeling organic products. Instead, there is a short section encouraging the enforcement of domestic laws and the exchange of information to improve and align standards for certifying and labeling organic products.

The TPP contains “sanitary and phytosanitary” (SPS) measures related to regulations that seek to protect humans, animals, and plants from diseases, pests, and contaminants. SPS measures are important for two reasons. First, they allow countries to protect their populations. Second, they can be non-tariff barriers to trade. For instance, long inspection times for perishable items can effectively eliminate foreign competition. TPP members have committed to developing SPS regulations based on scientific evidence and international standards, resolving SPS disputes quickly, and creating an SPS committee comprised of representatives from each country. Some U.S. agricultural exporters believe the new provisions improve existing WTO SPS standards and will reduce unfair or protectionist trade barriers.¹⁰³ Some food safety advocates believe the measures will limit each country’s ability to determine its own food safety laws and weaken the screening process by requiring faster inspections.¹⁰⁴

The TPP’s primary impact on Maine food consumers would likely be lower costs and greater variety of food imports from the TPP countries with which the U.S. does not have an existing

¹⁰² USITC, [TPP Tariff Schedule of the United States](#), p46-49, 51, 55, 56, 61, 125.

¹⁰³ For example, USTR Agricultural Policy Advisory Committee for Trade, “[The Trans-Pacific Trade Agreement: Report of the Agricultural Policy Advisory Committee for Trade](#).” Washington, DC, December 1, 2015.

¹⁰⁴ Food & Water Watch, “[The TPP attack on commonsense food safety standards](#).” Washington, DC, December 2015.

FTA. The impact on Maine food producers will likely come from two directions: first, potential competition from those imports, and second, increased export opportunities.

Agricultural imports from new TPP markets could reduce demand for Maine food products if consumers view them as substitutes. For instance, if consumers started purchasing Vietnamese farmed shrimp instead of Maine shellfish. The table below shows the top ten agricultural exports by value of Japan, Malaysia, New Zealand, and Vietnam for 2011, the most recent year for which comparative data are readily available. (Brunei and Singapore have very few agricultural exports).

Japan	Malaysia	New Zealand	Vietnam
Other prepared food	Palm oil	Whole milk (dry)	Coffee, green
Cigarettes	Rubber	Sheep meat	Rubber
Pastry	Fatty acids	Butter	Cashews
Beverage, non-alcoholic	Palm kernel oil	Beef	Cassava
Rice-fermented beverages	Other prepared food	Skimmed milk (dry)	Pepper (piper spp.)
Apples	Cocoa powder & cakes	Kiwi	Other fresh fruit
Wheat flour	Cocoa butter	Cheese	Tea
Beverage, alcoholic	Fat (prepared)	Wine	Other prepared food
Food wastes	Food prep, flour, malt extract	Other prepared food	Pastry
Tea	Pastry	Products of natural milk constituents	Honey

Source: Food and Agriculture Organization of the United Nations

Maine food exports have increased significantly in the last decade, more than doubling from \$288 million in 2007 to \$588 million in 2015.¹⁰⁵ Exports of live lobster accounted for most of that growth, with additional contributions from farmed salmon, sea urchins, sea cucumbers, and elvers. Exports are a growth area for Maine food producers.¹⁰⁶

Maine's Top 10 Food Commodity Exports in 2015			
Commodity Code	Primary Component	Value (millions)	Average annual increase 2010-2015
0306	Lobster, live	\$347.0	15%
0304	Salmon, fillets	\$46.2	59%
0308	Sea urchins and sea cucumbers	\$25.2	-3% *
0302	Salmon, whole	\$21.5	-5%
2004	Potatoes, prepared and frozen	\$18.9	-15%
0811	Blueberries and cranberries, frozen	\$17.2	14%
0810	Blueberries and cranberries, fresh	\$11.8	0%
1605	Lobster, prepared	\$11.6	45%
1702	Maple sugar and syrup	\$7.5	13%
0407	Chicken eggs	\$4.6	15%

*There are no recorded exports in commodity category 0308 until 2012, so annual increase is based on 2012-2015.

Source: U.S. Census Bureau: Economic Indicators Division USA Trade online.

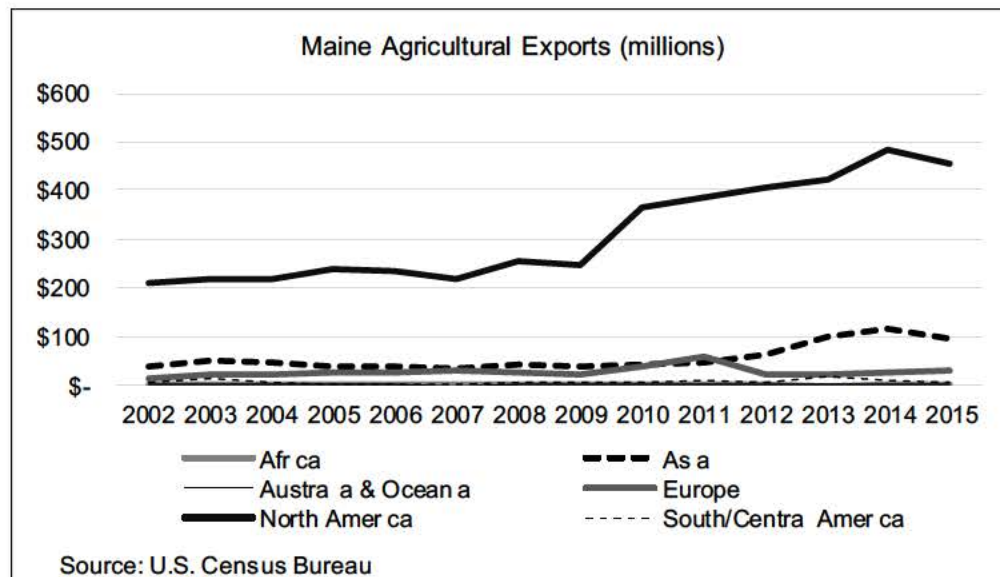
Canada is by far the largest consumer of Maine food exports followed by Malaysia, China, Japan, and South Korea. That has led some people within Maine's food industry to be optimistic that the TPP would further increase demand from those countries.¹⁰⁷ Current tariffs on Maine

¹⁰⁵ U.S. Census Bureau, Economic Indicators Division, [USA Trade Online](http://usa.tradeonline.com).

¹⁰⁶ Tom Bell, "[Trade trend: More Maine food on world's plates](#)," *Portland Press Herald*, January 5, 2015.

¹⁰⁷ 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."

lobsters are as high as 34% in Vietnam, 8% in Malaysia, and 5% in Japan and New Zealand, depending on how it is processed and shipped.¹⁰⁸



Assuming no change in the amount of lobster caught by Maine fishermen, increased demand for Maine lobster would increase its price. Indeed, recent price increases for California spiny lobster to over \$20 per pound suggest there is room Maine prices to grow if supply is contained.¹⁰⁹ One notable difference between Maine and California is that in the last decade, the harvest of Maine lobster has doubled while the harvest of California lobster has increased by about one-third.¹¹⁰

Tariff reductions on Maine potatoes and blueberries could expand the reach of those foods as well. Japan, Malaysia, and Vietnam would eliminate their tariffs on fresh, frozen, and prepared potatoes, which range from about 8.5% in Japan to as much as 34% in Vietnam.¹¹¹ Tariffs on categories that include blueberries range from as high as 17% in Japan to 30% in Malaysia and Vietnam.¹¹²

Under the TPP, the U.S. would increase tariff-rate quotas (TRQs) for dairy products. In theory, that could increase imports from TPP countries with large dairy industries, such as Australia, Canada, and New Zealand. However, the USITC notes, "...with two exceptions — butter and butter oil, and whole milk powder — imported dairy products [from Australia, Canada, and New Zealand] no longer fill current U.S. import TRQs due to transportation costs to the United States and relatively high prices in Asia. TPP members are not expected to significantly increase

Source: Christopher Burns, "[How more Maine lobsters can be cracked by the Japanese market](#)," *Bangor Daily News*, November 25, 2015.

¹⁰⁸ USITC, TPP tariff schedules for Vietnam, Malaysia, Japan, and New Zealand

¹⁰⁹ California Department of Fish and Wildlife, Marine Region, [Draft California spiny lobster fishery management plan](#), January 6, 2016.

¹¹⁰ Maine Department of Marine Resources, [Historical Maine lobster landings](#), February 19, 2016.

¹¹¹ U.S. Department of Agriculture, "[Trans-Pacific Partnership: Benefits to U.S. agriculture](#)," May 9, 2016.

¹¹² *Ibid.*

exports to the United States from current volumes.”¹¹³ In all, the USITC expects U.S. dairy imports to increase about 10% in 2032, mainly from New Zealand and Canada, and mainly in butter and butter oil. An assessment by the United State Department of Agriculture (USDA) predicted a higher increase in U.S. dairy imports: 20.5% in 2025.¹¹⁴ Although the USDA report provides less detail on the origin of those imports, it suggests that the largest percentage increases would be in butter (11.6%), following by cheese (8.1%), powdered milk (6.6%), and “other dairy” (2.6%).

Services

Services are a large area of trade for the U.S., and one in which it has a competitive advantage. One-third of all U.S. exports are services, compared to one-sixth of imports. Furthermore, the U.S. has a large and growing surplus in services. The largest categories of U.S. service exports are 1) purchases by foreign citizens visiting or working in the U.S., which account for roughly one quarter of all service exports, 2) charges for the use of intellectual property, 3) “other business services,” and 4) financial services.¹¹⁵ Likewise, roughly one-fifth of U.S. service imports are for foreign travel, followed by “other business services” and transport. In 2015, exports exceeded imports by 54% (\$262 billion).¹¹⁶ That surplus has grown 16% annually on average for the last decade.

While the U.S. has a relatively open market for foreign services, other TPP countries are more tightly controlled. The U.S. sought and received a number of concessions in this area. For instance, the TPP includes provisions for opening up express delivery services in countries such as Japan where that service is controlled and subsidized by the government. Similarly, it would grant greater access for private insurance providers in countries where insurance is sold by government entities. The TPP would also require countries to allow foreign companies to supply electronic payment card services (credit and debit cards), a first in U.S. FTAs. This could, theoretically, benefit U.S. credit card providers such as Bank of America, which has a call center in Belfast. One of the Obama Administration’s spokespeople for the TPP is a former Bank of America senior executive.¹¹⁷

Many internationally traded services rely on cross-border data flows. The TPP prohibits countries from restricting those flows, a provision sought by e-commerce providers. However, financial services are exempt from that restriction; each country’s financial regulators have flexibility in that matter. The U.S. Treasury Secretary sought this flexibility to ensure oversight of financial activities in the U.S.¹¹⁸ This exemption concerns some U.S. financial services providers. They worry that countries will require them to locate servers and data centers in-

¹¹³ Mary E. Burfisher, John Dyck, Birgit Meade, Lorraine Mitchell, John Waino, Steven Zahniser, Shawn Arita, and Jayson Beckman, “[Agriculture in the Trans-Pacific Partnership](#).” USDA Economic Research Report 176, October 2014.

¹¹⁴ USITC, “[Trans-Pacific Partnership Agreement: Likely impact on the U.S. economy and on specific industry sectors](#).” USITC Publication 4607, May 2016.

¹¹⁵ U.S. Census Bureau, [U.S. international trade in goods and services](#), press release, June 2016.

¹¹⁶ BEA, [U.S. International Trade in Goods and Services](#), May 2016.

¹¹⁷ Stefan M. Selig, “[Miami: Expanding trade through TPP and global expansion in the Western Hemisphere](#),” February 25, 2016.

¹¹⁸ Victoria Guida, “[Law defends financial services data carveout](#),” Politico, February 11, 2016.

country, thereby increasing costs and creating non-tariff barriers to trade.¹¹⁹ In May 2016, the U.S. Treasury announced a proposal to address those concerns in separate agreements negotiated outside the TPP.¹²⁰

Each country exempted some services from the TPP. For instance, the U.S. retained the requirement that only U.S.-flag vessels engage in trade between U.S. ports, and they must be crewed by U.S. citizens or permanent residents (the Jones Act).

GOVERNMENT PROCUREMENT

In most developed countries, roughly one-third of government spending is procurement (the purchase of goods and services); that is generally equivalent to 10-15% of a country's total GDP.¹²¹ The World Bank estimates those figures are higher in developing countries, where procurement accounts for about one-half of government spending.¹²² This is a large market for international companies involved in construction, utilities, telecommunications, medical technology and supplies, and other goods and services needed by governments.

Forty-six countries of the WTO, including the U.S., are signatories of a Government Procurement Agreement (GPA) that ensures open, transparent, and non-discriminatory bidding processes on government contracts for bidders from other GPA countries. All TPP members except Vietnam, Malaysia, and Brunei are members of the WTO GPA or have similar agreements with the U.S. in bilateral FTAs. Therefore, the TPP would have only a marginal impact on government procurement practices in the U.S.

Each TPP country specified the types of government contracts open to bidding by foreign firms and the dollar threshold for open bidding. Every country carved out exceptions to this section of the agreement. Some TPP countries (Australia, Canada, Chile, Japan, and Peru), include procurement by sub-national governments in their agreements. For those countries, access to sub-national government procurement is reciprocal. The U.S. and several other TPP countries excluded government procurement at the sub-national level. That means that just as today state and local governments are not affected by the WTO GPA, they would not be affected by the TPP. According to the Congressional Research Services,

*Although the United States is a WTO GPA signatory, state and local governments are excluded from coverage, even if federal funds are involved, unless they voluntarily agree to comply. Thus, where the federal government provides grants or loans to state and local authorities for transportation projects, it may attach domestic sourcing restrictions to these funds without violating international obligations.*¹²³

¹¹⁹ Adam Behsudi, "[Obama can't bank on financial services support for TPP](#)," Politico. November 25, 2015.

¹²⁰ Rachel Fefer, "[TPP financial services data flows](#)," Congressional Research Service, IN10498, June 3, 2016.

¹²¹ Organisation for Economic Co-operation and Development (OECD), "[Size of public procurement](#)," in OECD, *Government at a Glance 2015*, OECD Publishing, Paris, 2015.

¹²² World Bank Group, [Benchmarking public procurement 2016: Assessing public procurement systems in 77 economies](#), 2016.

¹²³ Michaela D. Platzer and William J. Mallett, "[Effects of Buy America on transportation infrastructure and U.S. manufacturing: Policy options](#)," Congressional Research Service, R44266, 2015.

Like other U.S. FTAs, the TPP would exempt firms from TPP countries from some provisions of the “Buy American” Act of 1933 (which prohibits the federal government from purchasing some goods and construction materials from foreign suppliers). However, also like other FTAs, many other domestic-preference provisions would remain in place, such as the transportation and infrastructure-related “Buy America” Act, the Berry Amendment that requires the Department of Defense to purchase American-made products, programs that favor woman- and minority-owned businesses, and certain other defense and agricultural procurements.

Nothing in the TPP would change how state and local governments purchase goods and services. Whereas the U.S. has existing government procurement agreements with many countries, the most significant change of the TPP is that for the first time, Vietnam, Malaysia, and Brunei would open their procurement processes to U.S. firms. That means that a large Maine construction company could, theoretically, bid on government projects in those countries.

INTELLECTUAL PROPERTY RIGHTS

The World Intellectual Property Organization defines intellectual property as, “...creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.”¹²⁴ Patents, trademarks, and copyrights are mechanisms countries use to help creators of intellectual property (IP) profit from their work and thus create greater incentives to encourage innovation.

International debates about IP protections generally seek to balance the desires of those who generate the intellectual property and those who benefit from it. Developed countries historically have been exporters of IP. Companies that create IP through large investments argue that IP protections are necessary to recoup their expenses and fund further innovation.¹²⁵ Developing countries have historically been importers of IP. They argue that in some cases, particularly medicines, it is unethical to restrict the spread of beneficial knowledge.¹²⁶

Biologics

The TPP broadly seeks to establish consistent patent standards across the region. The most controversial part of this section relates to biologics (drugs made from living organisms, such as vaccines). Biologics are a relatively new class of drugs that treat a broad range of medical conditions, from arthritis to cancer. They often cost thousands of dollars per dose, and their creation and use are steadily rising. Their impact on public health budgets is a concern for many governments.¹²⁷

The U.S. has a twelve-year period of “data exclusivity” for biologics patents, after which time other parties can create generic versions (“biosimilars”). Since biosimilars are projected to be 10-

¹²⁴ World Intellectual Property Organization, “[What is intellectual property?](#)” Publication 450(E). Accessed July 25, 2016.

¹²⁵ For example, Pharmaceutical Research and Manufacturers of America, “[Intellectual property](#),” Accessed July 25, 2016.

¹²⁶ For example, Peter Singer and Doris Schroeder, “[Ethical reasons for intellectual property rights reform](#),” University of Melbourne, November 2009.

¹²⁷ The Economist, “[Going large: A wave of new medicines known as biologics will be good for drugmakers, but may not be so good for public health budgets](#),” January 3, 2015.

30% cheaper than the original drugs, accelerating their market entry could reduce costs for consumers and governments. President Obama has many times proposed reducing the period to seven years. His 2017 federal budget projects that doing so would save Medicare \$6.9 billion over ten years.¹²⁸

TPP members agreed to an eight-year period of data exclusivity. This represents a compromise between the varying lengths of time TPP members currently allow for biologics, specifically, or pharmaceuticals, generally, from no exclusivity period (Brunei), to five years (Australia, Chile, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam), to eight years (Japan and Canada), to twelve years (the U.S.).¹²⁹

Both drug makers and health advocates oppose the eight-year data exclusivity period, although for opposing reasons. Drug makers argue it is too short and will discourage innovation (by lowering drug prices and reducing companies' returns on investment for research and development).¹³⁰ Health advocates argue it is too long and will increase drug prices in developing countries.¹³¹

Recent studies question both of those assertions. A 2009 study by the Federal Trade Commission concluded that creating generic biologics is more costly than other types of drugs and therefore there are natural barriers to entry in that market.¹³² The study concluded that a twelve- to fourteen-year exclusivity period was unnecessary to spur innovation by biologics manufacturers. Another study of U.S. FTAs in fifteen countries found no discernable impact on the prices of generic or non-generic drugs regardless of the existence or length of an exclusivity period.¹³³ Thomas Bollyky, a researcher at the Council on Foreign Relations, suggests four potential reasons that international exclusivity periods have not generated the price increases that similar protections have created in the U.S.: 1) unlike the U.S., many other countries have price controls or providers that simply eliminate expensive medicines from their health plans, 2) countries may interpret patent restrictions very narrowly to reduce their impact, 3) many drug companies have started offering price discounts to developing countries and/or licensing generic manufacturers, and 4) since FTAs aren't retroactive, the portion of new drugs granted exclusivity through these agreements is small and the impact may not yet be discernible.¹³⁴

Copyrights

The TPP generally strengthens and lengthens existing WTO copyright standards, and in some areas aligns them more closely with U.S. standards. For example, the TPP increases the length of copyrights to 70 years (up from 50 years in six TPP countries including Canada and Japan) and allows for "fair use" in activities like reporting, teaching, research, etc. It also requires internet service providers to remove or block access to copyright infringements from their networks.

¹²⁸ U.S. Department of Health and Human Services, "[Fiscal year 2007 budget in brief](#)." Washington, DC, 2016.

¹²⁹ Ian F. Fergusson, Mark A. McMinimy, and Brock R. Williams, "[The Trans-Pacific Partnership negotiations and issues for Congress](#)." Congressional Research Service, R42694, 2015.

¹³⁰ Pharmaceutical Research and Manufacturers of America. [PhRMA statement on the Trans-Pacific Partnership negotiations](#), October 5, 2015.

¹³¹ For example, Doctors Without Borders, "[Help us fix TPP](#)." Accessed July 25, 2016.

¹³² Federal Trade Commission, "[Emerging health care issues: Follow-on biologic drug competition](#)." June 2009.

¹³³ Council on Foreign Relations, "[The long fight over trade and medicine](#)." Accessed July 25, 2016

¹³⁴ Thomas Bollyky, "[Why U.S. trade deals haven't exploded U.S. drug prices](#)," *Foreign Affairs*, March 23, 2016.

Trademarks and Trade Secrets

As with copyrights, the TPP strengthens trademark protections beyond existing WTO standards and includes many provisions already practiced in the U.S., such as ten years of protection, requiring a transparent system for registering trademarks, and a system for managing domain names. The TPP is the first FTA to require criminal penalties for theft of trade secrets, including theft by state owned enterprises.

INVESTMENT AND INVESTOR-STATE DISPUTE SETTLEMENT (ISDS)

The international flow of investor funds is a defining feature of today's global economy. It allows U.S. investors to profit from growth in other countries, and it provides valuable sources of capital for U.S. businesses and workers. The TPP requires countries to treat foreign and domestic investors equally in terms of access to investment opportunities, permitting, legal proceedings, and other business dealings. Countries may not arbitrarily or capriciously discriminate against a foreign investor. The TPP also bars attaching performance requirements to investments made by foreign countries, such as technology transfer, export requirements, and local content regulations. This is essentially how the U.S. already treats foreign investors.

The most discussed section of the investment chapter of the TPP relates to investor-state dispute settlement (ISDS). That refers to the means by which a foreign investor can bring a claim against a government if they believe it has breached the terms of the agreement.¹³⁵ ISDS measures first appeared in trade agreements in the 1960s and became standard elements by the 1990s.¹³⁶ Their intent is twofold: to provide due process for investors who fear unfair treatment in a foreign legal system and to prevent investor-state disputes from escalating into state-state disputes.

Similar to other FTAs, the TPP specifies that disputes would be settled by a three-judge panel, with each party appointing one judge and the third selected by mutual consent (or by a third party if consent is not possible). The panel would hear the parties' claims, examine the facts, and issue a report assessing whether or not the terms of the TPP had been violated. The panel could recommend a means of resolving the issue. If the offending party failed to bring their actions in line with the TPP, then the panel could impose fines, require compensation, or suspend benefits (e.g., re-impose tariffs). There would be no mechanism for appealing the tribunal's decision.

The primary objections to ISDS arise from the decision-making process described above. ISDS opponents typically point out that ad hoc private arbitrators judge the merits of each case based on their interpretation of the trade agreement, which may be vague and open to interpretation.¹³⁷ They do not need to consider domestic laws, nor are they required to use past ISDS cases for precedent. Moreover, tribunals' decisions cannot be appealed. Opponents of ISDS argue that it

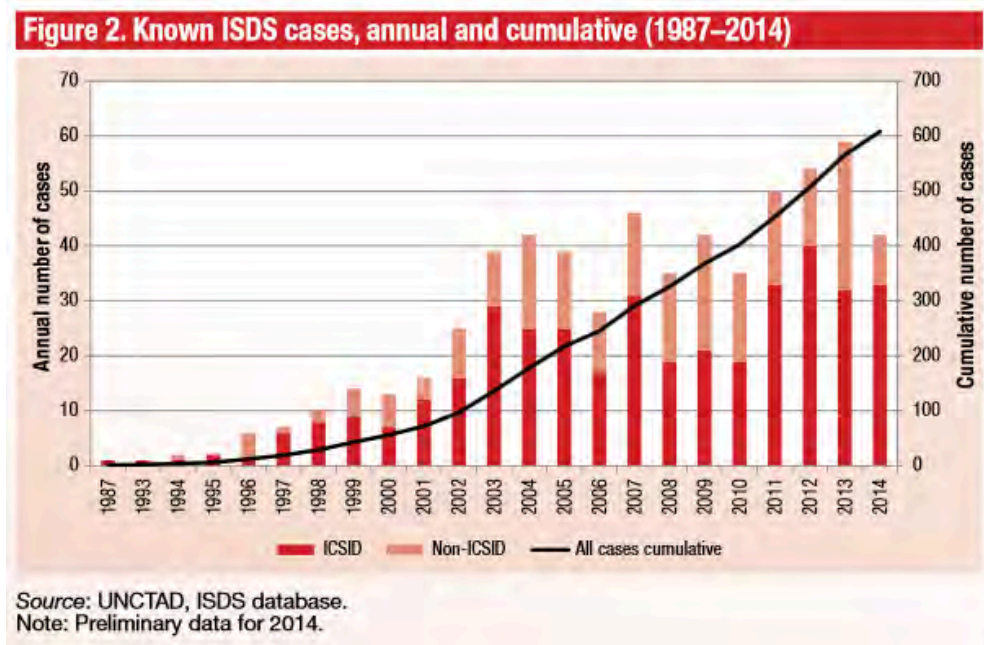
¹³⁵ For additional background on this topic, see Congressional Research Service report R44015, "[International investment agreements \(IIAs\): Frequently asked questions](#)," published May 2015.

¹³⁶ Ibid.

¹³⁷ For a thorough discussion of the arguments against ISDS see Lisa Johnson, Lisa Sachs, and Jeffrey Sachs, "[Investor-state dispute settlement, public interest and U.S. domestic law](#)." Columbia Center on Sustainable Investment Policy Paper, May 2015.

gives foreign investors, particularly large multinational corporations, rights unavailable to domestic investors and undermines domestic policymaking and regulatory abilities.

The number of ISDS cases has increased as international trade and investment have increased. Each new case tests the power that FTAs grant to investors and reveal the strengths and weaknesses of the ISDS system.¹³⁸ The following chart from the U.N. Conference on Trade and Development shows the number of ISDS cases from 1987 to 2014. “ICSID” refers to cases handled by the World Bank's International Centre for Settlement of Investment Disputes. Created in 1965, ICSID has 151 member nations, including the U.S., and facilitates the majority of ISDS cases.



Several provisions in the TPP appear to be aimed at addressing criticisms of past ISDS provisions. For one, the TPP permits countries to deny ISDS privileges to “shell companies.” It also specifies that nothing in the agreement shall prevent a country from regulating investment “...in a manner sensitive to environmental, health or other regulatory objectives.”¹³⁹ These provisions are likely in response to a suits by the tobacco company Philip Morris against Australia and Uruguay. In 2011, that company sued the government of Australia for requiring plain packaging on tobacco products.¹⁴⁰ The company used a subsidiary based in Hong Kong to sue under an Australia-Hong Kong FTA. The tribunal ruled in Australia’s favor, saying that Philip Morris did not have authority to use the subsidiary in that manner (it did not comment on the merits of its argument regarding packaging). Philip Morris also lost its suit against Uruguay for requiring cigarette packages to have graphic anti-smoking images.

¹³⁸ For a summary of recent ISDS developments, see United Nations Conference on Trade and Development, “[Investor-state dispute settlement: Review of developments in 2015](#),” International Investment Agreements Issues Note 2, June 2016.

¹³⁹ Trans-Pacific Partnership, [Article 9.16: Investment and Environmental, Health, and Other Regulatory Objections](#), 2015.

¹⁴⁰ Australian Attorney General. “[Tobacco plain packaging – investor-state arbitration](#).” Accessed July 18, 2016.

The TPP also specifies that a country's failure to act in accordance with an investor's expectations is not enough to violate the agreement, even if it results in financial losses. It specifies that investors bear the burden of proving their claims, that all proceedings must be public, and that interested third-parties may submit comments on specific cases. It also expands rules for dismissing frivolous claims and establishes a code of conduct for arbiters. The TPP is the first U.S. trade agreement to specifically allow countries to dismiss ISDS claims against tobacco regulations.¹⁴¹ While some see this as a positive development, others question why the exemption is necessary if countries truly are permitted to regulate in the interest of public health and the environment, as specified elsewhere in the agreement.¹⁴²

No finding by an ISDS tribunal would have the direct effect of voiding or changing a U.S. law. However, U.S. taxpayers would be responsible for compensating an investor if the tribunal found that it had violated the TPP's terms. To date, the U.S. has never had to do that as the result of an ISDS case. The fear, however, is that foreign firms are becoming more aware of their ability to use ISDS and that the TPP will expand the number of potential cases.¹⁴³

Two well-known cases that tested the limits of investor claims are *Methanex v. United States* and *Glamis Gold v. United States*. These cases offer insight into how FTA tribunals operate, although it is important to note that there is no formal obligation for future tribunals to use them as precedent.

Methanex is a Canadian producer of methanol that lost millions when California banned MBTE in gasoline in 1999 (methanol is an ingredient in MBTE).¹⁴⁴ Methanex sued the U.S. under the rules of NAFTA and sought \$970 million in damages. The NAFTA tribunal ruled in favor of the U.S., stating that NAFTA only protects investors from discriminatory treatment, not from "...non-discriminatory regulation for a public purpose..."¹⁴⁵ The tribunal also directed Methanex to pay all of the U.S.'s arbitration and legal expenses.

Glamis Gold v. United States involved another Canadian company operating in California.¹⁴⁶ Glamis Gold secured mining rights to an area of federal land in Southern California and obtained permits to mine from the U.S. Department of the Interior. In order to protect the area, which is sacred to local Native Americans, the State of California passed a law requiring complete backfilling of open-pit metallic mines (Glamis's permit application had promised only partial back-filling in some areas). Glamis sued the U.S. for \$50 million under the rules of NAFTA, claiming that the back-filling requirement made its investment unviable. The NAFTA tribunal denied the claim and required Glamis to pay two-thirds of the U.S.'s legal expenses.

¹⁴¹ Thomas J. Bollyky. 2016. [TPP tobacco exception proves the new rule in trade](#). Council on Foreign Relations. February 4, 2016.

¹⁴² Ibid.

¹⁴³ Johnson et al.

¹⁴⁴ Kara Dougherty, "[Methanex v. United States: The realignment of NAFTA Chapter 11 with environmental regulation](#)," *Northwestern Journal of International Law and Business*, 27(3), 2007.

¹⁴⁵ *Methanex v. United States*, [Final Award of the Tribunal on Jurisdiction and Merits](#), p278, August 3, 2005.

¹⁴⁶ Jordan C. Kahn, "[Striking NAFTA gold: Glamis advances investor-state arbitration](#)," *Fordham International Law Journal*, 33(1), 2009.

The authors found no record of investor-state disputes involving Maine companies or specific to the activities of foreign companies operating in Maine. Although the ISDS provisions of the TPP and other FTAs have generated considerable angst, dire consequences for American interests have not manifested to date. The TPP's modifications of some ISDS rules could reduce some potential abuses, but legitimate concerns remain.¹⁴⁷ Canada and the European Union moved away from the traditional ISDS structure in their new trade agreement.¹⁴⁸ They will form a permanent tribunal of fifteen individuals appointed by both countries, plus an appellate tribunal, and ensure greater deference to countries' domestic laws.

LABOR STANDARDS

While the impact of international trade on workers has been studied for centuries, labor standards are a relatively recent inclusion in trade agreements. In 1993, the U.S., Canada, and Mexico made a side agreement to NAFTA called the North American Agreement on Labor Cooperation in which each country agreed to promote a broad list of labor standards by enforcing its own labor laws.¹⁴⁹ More recent U.S. FTAs, such as the agreement with South Korea (KORUS) and the TPP, include stronger labor standards within the body of the agreement.

The TPP requires countries to align their labor standards to those of the International Labour Organisation (ILO), to enforce those standards, and not to lower them to attract trade or investment. Violating those standards could result in trade restrictions. The ILO's four fundamental worker rights are: "[1] freedom of association and the effective recognition of the right to collective bargaining, [2] the elimination of forced or compulsory labour, [3] the abolition of child labour and [4] the elimination of discrimination in respect of employment and occupation."¹⁵⁰

The U.S. negotiated additional, separate agreements with Vietnam, Malaysia, and Brunei due to particular concerns about labor practices in those countries. For instance, the U.S. may suspend tariff reductions for Vietnam after five years if it determines that the ruling communist party has not allowed for the formation of independent labor unions. Some officials within Vietnam see this as a vehicle for broader economic reforms.¹⁵¹

ENVIRONMENTAL STANDARDS

The inclusion of environmental standards in FTAs is also a relatively recent phenomenon. While some countries would prefer to keep trade and environmental issues separate, the U.S. has included environmental components in recent FTAs. Trade agreements present an opportunity to

¹⁴⁷ Some legal scholars question if the TPP actually reforms ISDS. See, for example, Lisa Johnson and Lisa Sachs, "[The TPP's investment chapter: Entrenching, rather than reforming, a flawed system](#)," Columbia Center on Sustainable Investment Policy Paper, November 2015.

¹⁴⁸ European Commission, "[CETA: EU and Canada agree on new approach on investment in trade agreement](#)," press release, February 29, 2016.

¹⁴⁹ Mary Jane Bolle, "[NAFTA labor side agreement: Lessons for the Worker Rights and Fast-Track debate](#)," Congressional Research Service, October 9, 2001.

¹⁵⁰ International Labour Organisation (ILO), [ILO Declaration of Fundamental Principles and Rights at Work](#), 1998.

¹⁵¹ Ben Bland and Shawn Donnan, "[Vietnam looks for reform and investment boost from TPP deal](#)," *Financial Times*, October 6, 2015.

add enforcement mechanisms to environmental agreements that might otherwise be unenforceable.¹⁵² Environmental agreements have evolved from side agreements (such as the North American Agreement on Environmental Cooperation passed with NAFTA) to full chapters within FTAs (as in KORUS), with enforcement and disputes handled through the same processes as other trade violations, and subject to the same penalties.

The TPP obligates each country to enforce the multilateral environmental agreements (MEAs) to which it is a party. However, not all countries have joined the same MEAs. The U.S. has entered into at least 33 MEAs in the last twenty years, on topics ranging from tropical timber to migratory birds to nuclear safety.¹⁵³ The only MEAs specifically referenced in the TPP regard the protection of endangered species and limitations on pollution from ships. When Congress granted “fast track” trade authority in 2015, it identified another five MEAs on which it wanted commitments. Those relate to air pollution, wetlands conservation, whaling, tuna, and conservation of the Antarctic.¹⁵⁴

The TPP is the first FTA that seeks to address over-fishing and promote conservation. It prohibits subsidies that negatively impact over-fished populations (e.g., vessel subsidies) and requires countries to promote the protection of sharks, sea turtles, seabirds, and marine mammals. The TPP does not prohibit trade in shark fins, a specific concern of some TPP opponents who claim that reducing tariffs on shark fins without adding protections will harm shark populations.¹⁵⁵ Several TPP countries are active players in international shark fin trade, including Canada, Japan, Malaysia, the U.S., and Vietnam.¹⁵⁶

DIGITAL TRADE

More people than ever are communicating and conducting business online. In 2014, 56% of U.S. service exports (equivalent to 17% of total exports) were “digitally-deliverable.”¹⁵⁷ The U.S. also imports digital services, but it has a large, growing surplus in this area (66% in 2014). For this reason, the treatment of digital information is an important new topic in trade negotiations.

The TPP secures several U.S. objectives related to digital trade, including prohibiting restrictions on cross-border data flows. Several countries, most notably China but also Malaysia and South Korea prohibit digital data on citizens from leaving their borders, meaning that internet companies must establish local servers to operate there.¹⁵⁸ The Internet Association strongly supports the TPP’s prohibition of this practice.¹⁵⁹ The TPP also prohibits requirements for source

¹⁵² Eric Neumayer, “[Multilateral environmental agreements, trade, and development: Issues and policy options concerning compliance and enforcement](#)” Consumer Utility & Trust Society, Jaipur, India, 2001.

¹⁵³ Ronald B. Mitchell, [International Environmental Agreement Database Project](#) (Version 2014.3). Accessed July 20, 2016.

¹⁵⁴ [Bipartisan Congressional Trade Priorities and Accountability Act of 2015](#), public law 114-26. June 29, 2015.

¹⁵⁵ Ben Beachy, “[Sharks, tigers, and elephants: New analysis reveals TPP threats to endangered species](#),” Sierra Club, December 7, 2015.

¹⁵⁶ Felix Dent and Shelley Clarke, “[State of the global market for shark products](#),” Food and Agriculture Organization of the United Nations, 2015.

¹⁵⁷ Ryan Noonan, “[Digitally deliverable services remain an important component of U.S. trade](#),” U.S. Department of Commerce, 2015.

¹⁵⁸ Amir Nasir, “[Data localization would harm U.S. economy, tech experts warn](#),” Morning Consult, July 13, 2016.

¹⁵⁹ Michael Beckerman, [Statement in support of the Trans-Pacific Partnership](#), Internet Association, March 30, 2016.

code disclosure and technology transfer, promotes cooperation on cybersecurity and penalties for cyber theft, and provides online consumer protections.

STATE-OWNED ENTERPRISES

Every country has state-owned, state-supported, or state-controlled enterprises. In the U.S., that includes the postal service, Amtrak, the Corporation for Public Broadcasting, the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac), and the Government National Mortgage Association (Ginnie Mae). TPP members Vietnam and Malaysia have particularly large state-owned enterprises (SOEs), which are sometimes criticized for being unethical and anticompetitive.¹⁶⁰ Competition from, or discriminatory treatment by, SOEs is a concern of U.S. companies operating in foreign countries.¹⁶¹

Previous U.S. FTAs, including NAFTA, prohibit SOEs from discriminating in sales of goods and services, and require them to enforce other areas of the agreement whenever applicable. The TPP goes further. It would prohibit SOEs from discriminating in purchases of goods and services and it would ban certain government subsidies for SOEs if they adversely affect the domestic industries of other TPP countries.

As with other sections of the TPP, each country has exceptions to the SOE requirements. The U.S. excluded Fannie Mae, Freddie Mac, and Ginnie Mae. The TPP also does not cover sub-national SOEs in any country. Therefore, Maine entities such as the Finance Authority of Maine and Maine Public Broadcasting would not be affected.

CURRENCY MANIPULATION

International exchange rates affect the price of every good and service traded between countries with different currencies. If a country reduced the value of its currency, then its exports, which are priced in that currency, could become cheaper, thereby giving it an advantage over its competitors. This type of currency “manipulation” could unfairly alter the terms of international trade, which is contrary to the generally accepted goals of all FTAs.

However, the TPP and other FTAs do not directly address unfair currency practices. The International Monetary Fund (IMF) is the international organization in which countries discuss monetary issues, including exchange rates and currency manipulation. All TPP countries are IMF members. Simultaneously with the release of the TPP text, the monetary authorities of all TPP members issued a joint declaration on currency issues. The declaration points out that all TPP members are bound by IMF agreements, which commit them to allowing exchange rates to reflect underlying economic fundamentals. It further states, “Each Authority will refrain from competitive devaluation and will not target its country’s exchange rate for competitive

¹⁶⁰ Greg Rushford, “[Why the Obama administration is targeting Malaysia and Vietnam in the trans-Pacific trade talks](#),” *Foreign Policy*, April 13, 2012

¹⁶¹ Sean Heather and Alan Wolff, [Establishing rules of the road: Commercial SOEs & private actors](#), presentation at National Press Club, Washington, DC, April 25, 2015.

purposes.”¹⁶² The monetary authorities also committed to transparent reporting and regular dialogue on macroeconomic and exchange-rate issues.

The IMF monitors countries’ exchange rate policies and investigates reports of currency manipulation but it lacks the authority to require countries to change their policies. At the same time, currency manipulation is notoriously hard to achieve and/or prove.¹⁶³ Furthermore, it is unclear that currency devaluation harms other countries since it would (if successful) lower prices for foreign consumers and foreign businesses that use imports as inputs.

OTHER COMPONENTS

The TPP contains many other components that are beyond the scope of this report or common to U.S. FTAs. These include

- antidumping provisions;
- countervailing duties on low-cost imports that benefit from government subsidies;
- provisions to improve the efficiency and transparency of customs procedures;
- prohibitions on bribery and corruption;
- increased transparency, coordination, and regulation of technical barriers to trade (although health, safety, or other legitimate regulations that may be applied in a discriminatory manner and create de facto trade barriers), and requirements to apply those regulations in a nondiscriminatory manner; and
- a section on regulatory coherence that encourages (but does not require) countries to adopt practices similar to the U.S., such as opportunities for affected parties to provide input on proposed regulations, analysis of a regulation’s costs and benefits, and the consideration of alternative solutions.

BRIEF COMPARISON OF TPP AND NAFTA

The preambles of NAFTA and the TPP state similar goals of reducing trade barriers, increasing economic opportunities, and promoting sustainable growth. However, their subsequent chapters reflect very different ideas about the measures needed to achieve those goals. The TPP reflects two decades of further evolution in the negotiation of international trade agreements and is a much more comprehensive agreement. The following table highlights some of the areas in which the TPP and NAFTA are alike and different. One of the most notable difference is the high percentage of imports that now enter the U.S. duty-free (68.6% compared to 38.8%). Today’s producers are much more accustomed to competing with duty-free imports than they were in 1993.

¹⁶² [Joint Declaration of the Macroeconomic Policy Authorities of Trans-Pacific Partnership Countries](#), November 5, 2015.

¹⁶³ Matthew J. Slaughter, “[The myths of China’s currency ‘manipulation’](#),” *The Wall Street Journal*, January 8, 2016.

	NAFTA (1993)	TPP
BACKGROUND		
Parties other than U.S.	2	11
Parties without existing U.S. FTA	1 (Mexico)	5 (Brunei, Malaysia, New Zealand, Singapore, Vietnam)
Parties' share of World GDP*	25.2%	36.0% (2014)
US share of World GDP*	21.4%	22.0% (2014)
Average U.S. tariff (as percentage of import value)**	5.2%	4.4% (2013)
Percentage of U.S. duty-free imports**	38.8%	68.6% (2013)
FTA COMPONENTS		
Labor	Not included. The NAFTA parties entered into a side agreement pledging to enforce their own labor laws. There were no enforcement mechanisms.	Included. Enforceable measures on collective bargaining, slave labor, child labor, and workplace discrimination
Environment	Not included. The NAFTA parties entered into a side agreement without enforcement mechanisms.	Included. Enforceable measures on fishing subsidies and trade of endangered species
Digital trade	Not included	Included. Prohibits restrictions on cross-border data flows
Trade secrets	Requires each member to have a legal framework for protecting trade secrets	Requires legal protection plus criminal penalties for trade-secret theft (including by SOEs and by means of cyber theft)
State-owned enterprises (SOE)	SOEs may not discriminate in <i>sale</i> of goods and services	SOEs may not discriminate in <i>sale or purchase</i> of goods and services
Anti-corruption	Not included	Included. Enforceable measures require laws against bribery and corruption of public officials in trade and international matters
Investor-state dispute settlement (ISDS)	Included	Included, but denied to tobacco and shell companies

* Source: Maddison Project, University of Groningen Growth and Development Centre

** Source: USITC, Office of Analysis and Research Services

SECTION IV

THE TPP'S ESTIMATED ECONOMIC IMPACT: U.S.

BACKGROUND

The USITC and several independent groups have estimated TPP's potential impact on the U.S. economy. There are several points to keep in mind when interpreting the results of studies that project the effects of FTAs:

1. 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, GDP, etc. are interpreted as the FTA's economic impact. For instance, if the no-FTA forecast shows an employment loss of 2% and the FTA forecast shows an employment loss of 1%, then the FTA's impact is a 1% gain in employment.
2. The numbers generated by economic models should be interpreted as indicators of the probable 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 or certainty. Many studies, including those discussed below, release only long-term estimates for a single year and for broad economic indicators.
3. In the context of assessing free trade agreements (FTAs), the results of economic models are not predictions of the future. Rather, they 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, demographics, fiscal and monetary policies, investor confidence, consumer preferences, etc.) will also impact the economy.
4. Even if an economic model correctly estimates the impact of an FTA, the effects of other variables could reinforce or oppose the FTA's impact, sometimes yielding outcomes that appear to contradict the model's projections. For instance, if an FTA was projected to increase employment by 1% and in actuality it fell by 1%, that does not necessarily mean the projection was wrong. It could mean other variables would have pushed employment down 2% but the FTA pushed back the decline to 1%.
5. The estimated impact of an FTA can appear 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 U.S. economic growth, primarily due to the sheer size of the U.S. economy.¹⁶⁴
6. The economic models discussed below estimate the impact of the TPP's reductions of tariffs, quotas, and some non-tariff barriers. They do not attempt to estimate the impacts of less quantifiable elements such as environmental and labor regulations, regulatory

¹⁶⁴ William Tyler, "[Trade integration for the Americas: What can economic analysis tell us?](#)" Universidade do Estado do Rio Janeiro, June 2006.

coherence, or intellectual property, nor do they estimate the TPP's potential geopolitical impact.

7. The practice of economic modeling is evolving. Like other communities of scholars who build models (climatologists, meteorologists, physicists, etc.) economists evaluate their results and seek to improve them. The final section of this chapter presents scholarly assessments of the accuracy of past FTA economic impact assessments.

STUDIES

This section summarizes the major findings of four assessments of the TPP's potential economic impact: two for the U.S. economy, one for the world economy, and one for a specific sector (agriculture). The authors chose these studies because they appear to be methodologically sound and because they are 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 studies conducted earlier. The table in Appendix A summarizes the key findings of several additional, academically rigorous studies conducted prior to release of the TPP's text. Despite their speculative nature, their results are generally similar to the studies discussed below.

Institution (Authors)*	Forecast Year	Impact on U.S....			
		GDP	Exports/Imports	Employment	Additional notes
USITC (Signoret et al.)	2032	+0.15%	Exports: +1.0% Imports: +1.1%	+0.07%	Real wages: +0.19%
USDA (Burfisher et al.)	2025	0.0%	NA	NA	Ag exports: +5.4% Ag imports: +2.0%
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%

*See Appendix A for full citations.

**Combined impact on NAFTA countries.

These assessments of the TPP's economic impact generally find that it would have neutral or slightly positive effects on the U.S. economy as a whole and increase both imports from and exports to the TPP countries without an existing U.S. FTA (Brunei, Japan, Malaysia, New Zealand, and Vietnam).

U.S. International Trade Commission

The USITC is required by law to assess the impact of a trade agreement on the U.S. economy. A team led by the USITC's Office of Economics Research Division Chief, Dr. Jose Signoret,

estimated the TPP's impact using a dynamic computable general equilibrium model (CGE).¹⁶⁵ Respected economists around the world use CGE models to study matters related to trade (as well as other issues).¹⁶⁶

The USITC team found that the TPP would have a modest, positive impact on the U.S. economy in 2032 (i.e., year 15), slightly increasing production, trade, employment, and wages. Compared to a baseline scenario, the TPP would increase U.S. GDP, exports, and imports by 0.15%, 1.0%, and 1.1%, respectively. Trade with TPP members with whom the U.S. does not have an existing FTA would grow even more; exports and imports with those countries would be 18.7% and 10.4% higher, respectively. The largest export gains by percentage were in agriculture and food (2.6%), with smaller gains in manufacturing, natural resources, and energy (0.9%), and services (0.6%). Import growth of 1.1% was fairly evenly spread across those sectors.

Compared to the baseline, the TPP would increase U.S. jobs by 0.07% and real wages by 0.19% in 2032, with gains spread relatively equally across skilled and unskilled labor. Employment in forestry and wood products would be lower by 1.3% and 0.6%, respectively; there would be no employment impact on paper products. The USITC noted that these reductions represent lower job growth in these sectors, not absolute job losses.

USDA

Independent of the USITC, researchers at the U.S. Department of Agriculture (USDA) led by Dr. Mary Burfisher of Purdue University estimated the TPP's impact on American agriculture.¹⁶⁷ Issued in 2014, prior to release of the final TPP text, the study assumed full elimination of all agricultural tariffs and quotas. In reality, the TPP would eliminate most of those barriers but many would remain in force.¹⁶⁸ Nevertheless, the analysis offers interesting insights into which agricultural sectors are most sensitive to liberalized trade with TPP countries.

Using a CGE model with specifications designed to reveal more details about the TPP's impact on agriculture, the USDA found no measurable impact on overall U.S. GDP growth in 2025. The study did not report a direct estimate of the impact on total U.S. agricultural output, but our calculations using their estimates (in their Table 13) indicate an increase of about 0.24% in 2025. The largest increases in percentage terms are for rice (8.7%), "other meat" (excludes bovine, pork, and poultry: 5.3%), wheat (2.1%), butter (1.1%), and poultry (0.9%); while the largest decreases are for sugar (-2.4%), sugar cane/beets (-2.2%), and "other grains" (excludes rice, wheat, and corn: -1.5%).

¹⁶⁵ USITC, "[Trans-Pacific Partnership Agreement: Likely impact on the U.S. economy and on specific industry sectors](#)," USITC Publication 4607, May 2016.

¹⁶⁶ World Bank, "[Computable general equilibrium modeling: Influencing debates](#)," June 2011.

¹⁶⁷ Mary E. Burfisher, John Dyck, Birgit Meade, Lorraine Mitchell, John Waino, Steven Zahniser, Shawn Arita, and Jayson Beckman, "[Agriculture in the Trans-Pacific Partnership](#)," USDA Economic Research Report 176, October 2014.

¹⁶⁸ Of the countries without an existing U.S. FTA, the percentage of U.S. agricultural exports that would become duty-free when the TPP enters into force are: Japan – over 50%; Malaysia – over 90%; New Zealand – almost 80%; Brunei – 100%; Vietnam – over 90% (within five years). Additional reductions would follow. For each country's schedule of tariff reductions on agricultural goods, go to: <https://ustr.gov/trade-agreements/free-trade-agreements/trans-pacific-partnership/tpp-full-text>

The USDA study estimates U.S. agricultural exports to TPP countries would increase 5.4%, with the largest percentage increases in dairy (32.2%), meat (11%), cereals (6.9%), and fruit and vegetables (3.7%). U.S. imports from TPP countries would increase by 2.0% with the largest increases in dairy (20.5%), meat (3.0%), and “other agriculture” (2.0%).

It is important to note that the study only estimates the overall changes in trade and output across agricultural sectors; it does not assess changes within sectors by producers of different sizes or characteristics, or producers of specific products within a given sector.

Petri and Plummer

Dr. Peter A. Petri of Brandeis University and Dr. Michael G. Plummer of Johns Hopkins University estimated the TPP’s impact using a static CGE model with slightly different specifications than either the USITC or USDA models.¹⁶⁹ Petri and Plummer estimate that by 2030, the TPP would increase annual real income by \$131 billion, or 0.5% of 2030 GDP, compared to a baseline scenario. By their estimation, delaying implementation of the agreement by one year would represent a permanent loss of \$94 billion in real income, equivalent to 0.5% of 2015 GDP.

Petri and Plummer estimate that the TPP would increase U.S. exports by \$357 billion, or by 9.1%, above their 2030 baseline projection. Since their model assumed that the FTA would not affect the trade balance (a common assumption in these type of analyses), imports would also grow by \$357 billion. Both imports and exports of services and durable and nondurable manufactures would increase substantially according to their model. The net impact on the U.S. manufacturing sector would be negative, but this would be more than offset by positive net impacts on U.S. services and primary goods (i.e., agriculture and mining). This would cause a corresponding reallocation of employment. They estimate that the TPP would reduce job creation in the U.S. manufacturing sector by about one fifth in 2030, but this would be matched by greater job creation in the U.S. service and primary sectors.

Petri and Plummer estimate that the TPP would increase real earnings by 0.53%, with wages of skilled workers (who will be about 60% of the American workforce) increasing more than the wages of unskilled workers: 0.63% versus 0.37%. They also note the high transition costs and permanent earnings losses imposed by the process of job destruction and creation. They estimate there would be 53,700 additional annual job changes during implementation of the TPP, which is slightly less than 0.1% of the current job “churn” in the U.S.

World Bank

On behalf of the World Bank, Dr. Csilla Lakatos et al. (including Petri and Plummer) estimated the TPP’s impact on both member and non-member countries using a dynamic CGE model.¹⁷⁰ They found that by 2030, the TPP would increase GDP growth in all member countries, by 1.1% on average. Gains ranged from 0.6% in the U.S., Canada, and Mexico (with the smallest percentage increase for the U.S.), to 8% and 10% in Malaysia and Vietnam, respectively. Some

¹⁶⁹ Peter A. Petri and Michael G. Plummer, “[The economic effects of the Trans-Pacific Partnership: New estimates.](#)” Peterson Institute for International Economics, Working Paper 16-2, 2016.

¹⁷⁰ Csilla Lakatos, Maryla Maliszewska, Franziska Ohnsorge, Peter Petri, and Michael Plummer, “[Potential macroeconomic implications of the Trans-Pacific Partnership.](#)” World Bank, January 2016.

increased trade among TPP countries would divert trade from non-TPP countries. Therefore, GDP growth in non-TPP countries would shrink by 0.1% on average, compared to the baseline. Reductions would be greatest (more than 0.3%) in Korea, Thailand, and some other (unspecified) Asian countries that compete directly with Vietnam and Malaysia. The study asserts, “Although the TPP is unlikely to affect overall employment in the long run, it may accelerate structural shifts between industries...”¹⁷¹ In other words, it may contribute to job churn discussed above. The study also estimates wage gains for American skilled and unskilled labor of 0.6% and 0.4%, respectively.

Capaldo et al.

Jeronim Capaldo, Research Fellow at the Global Development and Environmental Institute at Tufts University and a PhD candidate at the New School for Social Research, and Alex Izurieta of the United Nations Conference on Trade and Development, analyzed the TPP’s economic impact using the United Nations Global Policy Model (GPM).¹⁷² Their study bears mentioning because it has been widely cited for concluding that the TPP would harm the economies of all members involved, including the U.S. Capaldo et al.’s work, however, has important methodological flaws and would not pass a serious peer review.

There are many critical reviews of Capaldo’s application of the GPM to both the TPP and the Transatlantic Trade and Investment Partnership (TTIP), including the failure to fully disclose the calculations so others may evaluate the results.¹⁷³ Documents obtained through New Zealand’s Freedom of Information Act show that trade negotiators there studied Capaldo et al.’s TPP results. In internal communications, they concluded, “[The GPM] is an inappropriate model for assessing the economic effects of trade or a trade agreement (UN agencies do not use this model when analyzing changes in trade policy).”¹⁷⁴

According to the UN, “[The GPM] is a model of the world economy designed to simulate the macroeconomic impacts on countries and regions of exogenous shocks to the global economy, the potential effects of ‘sea changes’ in market confidence (such as reversals in financial market confidence following asset price bubbles), changes in international regulation of trade and finance and the international spill-over effects of major policy changes in major economies.”¹⁷⁵

In other words, the GPM is designed to estimate how countries respond to shocks in the short term. In order to do that, the model constricts some important forms of long-run economic

¹⁷¹ Ibid.

¹⁷² Jeronim Capaldo and Alex Izurieta, with Jomo Kwame Sundaram, “[Trading down: Unemployment, inequality, and other risks of the Trans-Pacific Partnership Agreement](#).” Tufts University Global Development and Environmental Institute, January 2016.

¹⁷³ For example: Maria Persson, Lund University, “[Swedish academic casts critical eye on TPP study](#),” translated by the Alliance for Responsible Commerce, February 3, 2015; Frederik Erixon and Matthias Bauer, “[‘Splendid isolation’ as trade policy: Mercantilism and crude Keynesianism in ‘the Capaldo study’ of TTIP](#),” European Center for International Political Economy, April 2015; Robert Z. Lawrence, “[Studies of TPP: Which is credible?](#)” Peterson Institute for International Economics, January 29, 2016.

¹⁷⁴ New Zealand Ministry of Foreign Affairs and Trade, [Modelling of Trans-Pacific Partnership: Summaries and New Zealand Outcomes](#). Released April 14, 2016. Further de-classified [correspondence](#) notes, “It turns out the ‘Tufts’ study has not much to do with Tufts – i.e., for an econometric study, it has no connection with the economics faculty at Tufts.”

¹⁷⁵ U.N. Development Policy and Analysis Division, [United Nations Global Policy Model](#). Accessed July 27, 2016.

activity. For instance, in Capaldo et al.'s model, when a firm's sales decline, it fires workers. While that certainly happens, many firms respond differently in the long term. They alter their products, improve their operations, and/or invest in new technologies. Furthermore, Capaldo et al.'s model implicitly assumes that when workers are fired, they remain unemployed forever and their lost incomes lower demand in other sectors. This happens to some extent in the short term, but in the long term most workers find alternative employment (although sometimes at a lower wage). This is why the unemployment rate eventually falls after an economy experiences a recession. In other words, the GPM "locks in" the short-term responses to shocks without allowing for long-term responses.

Moreover, the Capaldo et al. study assumes that the TPP would reduce government spending in all TPP countries. That assumption reduces aggregate demand and employment in a short-run model. In other words, the study imposes contractionary fiscal policies in a model that locks in short-run responses, and claims that the results are due to the TPP. While it is unclear to what extent the assumption of contractionary fiscal policies drives the results (indeed, the results might have nothing to do with increased trade), it may explain why their results are counterintuitive and contrary to those in the peer-reviewed literature. Capaldo et al. estimate that the TPP would reduce employment in all TPP countries as well as non-TPP countries, resulting in a permanent global employment loss. The usual intuition behind domestic employment losses as the result of increased global competition is that jobs are shifted to low-wage countries, but that is not what occurs in the Capaldo et al. study. The smallest percentage decrease in employment within the TPP is in the U.S. Moreover, non-TPP countries, particularly developing countries, lose more than seven times as many jobs as the TPP countries combined. The study shows that jobs are destroyed everywhere, and new ones are never created anywhere.

ACCURACY OF PAST FTA ASSESSMENTS

To understand the level of uncertainty inherent to economic projections, it is useful to analyze the accuracy of past FTA assessments. Since 1991, the USITC has assessed the impact of over three dozen FTAs or FTA amendments at the request of Congressional committees and the U.S. Trade Representative.¹⁷⁶ Independent researchers have made additional assessments. This section presents lessons learned from scholarly reviews of the impact of the North American Free Trade Act (NAFTA) and China's accession to the World Trade Organization (WTO). Both events have been widely studied because of their impact on the U.S. economy.

NAFTA

In 1992, Congress asked USITC to assess NAFTA's impact on the U.S. economy, focusing on select industries of interest. In its response, USITC generated its own industry-level projections and reviewed several independent assessments of economy-wide projections. Those assessments estimated small gains in GDP, employment, and average wages.¹⁷⁷ The review showed mixed evidence on the impact on wages of low-skilled and high-skilled workers: "...the preponderance

¹⁷⁶ A full list of USITC publications is available at https://www.usitc.gov/research_and_analysis/332_commission_publication.htm.

¹⁷⁷ USITC, "[Potential impact on the U.S. economy and selected industries of the North American Free Trade Agreement](#)." USITC publication 2596, January 1993, viii.

of evidence indicates an almost indiscernible effect on U.S. wage rates for both low-skilled and high-skilled groups.”^{178, 179}

At the sectoral level, USITC estimated U.S. production and employment gains in industrial machinery, computers and electronics, machine tools, bearings, textiles, pharmaceuticals, steel mill products, and chemicals.¹⁸⁰ USITC estimated U.S. production and employment losses in appliances, flat glass, glassware, and ceramic tiles, and automobiles. At the regional level, USITC estimated long-term losses in Midwestern, Southern, and Western regions with heavy concentrations of import-sensitive industries such as automobiles, apparel, steel, lumber and wood products. For the Northeast, USITC estimated gains in “bearings, pharmaceuticals, industrial machinery, machine tools, and Maine fishery industries,” and losses in apparel.¹⁸¹

Retrospective studies of NAFTA’s economic impact on the U.S. generally find that it had a neutral or slightly positive effect on overall employment, wages, and household welfare (partially due to lower prices).¹⁸² Studies have also quantified the significant, sometimes permanent, losses in some U.S. regions with concentrations of import-sensitive industries and among some groups of workers, particularly low-wage, unskilled workers.¹⁸³

Pre-NAFTA estimates by USITC and others were fairly accurate in their overall projections. However, USITC staff have written that pre-NAFTA models “stumbled badly” in forecasting the large growth of trade that has occurred within North America.¹⁸⁴ Timothy Kehoe (2003) of the University of Minnesota reached a similar conclusion in his critique of NAFTA projections made with CGE models (which were mentioned in the USITC assessment).¹⁸⁵ He evaluated three such models and concluded that they “drastically underestimated” the growth of trade resulting from that agreement. Kehoe notes two shortcomings. First, while they projected increased trade in products already being traded before NAFTA, they failed to project the expansion of trade into products that were not widely traded before NAFTA. Second, they failed to project how much increased trade and foreign investment would raise productivity in Mexico.

Overall, USITC’s estimates of NAFTA’s aggregate impact (which drew on the work of other economists) were fairly accurate with the exception of changes in trade. At the regional and

¹⁷⁸ Ibid, 2-3.

¹⁷⁹ In its 1990 assessment of a Mexico FTA, when it was not reviewing independent studies, USITC projected that “Unskilled workers in the U.S. would suffer a slight decline in real income, but U.S. skilled workers and owners of capital services would benefit more from lower prices and thus enjoy increased real incomes” (USITC, “[The likely impact on the United States of a free trade agreement with Mexico](#),” USITC publication 2353, February 1991, 2-6.)

¹⁸⁰ USITC, NAFTA, xi.

¹⁸¹ USITC, NAFTA, 2-5.

¹⁸² Justino De La Cruz and David Riker, “[The impact of NAFTA on U.S. labor markets](#),” USITC Office of Economics Working Paper 2014-06A, June 2014. See also: Justino De La Cruz, David Riker, and Bennet Voorhees, “[Econometric estimates of the effects of NAFTA: A review of the literature](#),” USITC, Office of Economics, November 26, 2013; Lorenzo Caliendo and Fernando Parro, “[Estimates of the trade and welfare effects of NAFTA](#),” *The Review of Economic Studies* 82(1), 2015; Alan Fox, Serge Shikher, and Marinos Tsigas, “[Predicting the effects of NAFTA with the BDS, GTAP, and EK models](#),” USITC, April 2015.

¹⁸³ De La Cruz and Riker.

¹⁸⁴ Fox, Shikher, and Tsigas.

¹⁸⁵ Timothy Kehoe, “[An evaluation of the performance of applied general equilibrium models of the impact of NAFTA](#),” Federal Reserve Bank of Minneapolis, Research Department Staff Report 320, April 2003.

sectoral levels, USITC's projections appear to have been reasonably accurate and within a margin of error to be expected of long-term forecasts. When appropriate, USITC highlighted the potential losses associated with NAFTA as well as the gains.

China-WTO

In 1999, USITC assessed the impact of China's accession to the WTO by simulating the impact of a reduction of U.S. and Chinese tariffs in 1998. The report did not include long-term projections, though. USITC estimated that China's WTO membership would generate "positive, but minor," growth in U.S. GDP, trade, consumption and wages, and result in "...an increase in the U.S. trade deficit with China."¹⁸⁶ At the sectoral level, USITC estimated production and export gains in agriculture, paper and pulp, chemicals, rubber, plastics, other transportation equipment, and machinery. USITC estimated losses in footwear, apparel, wood products, and "other light manufactures."¹⁸⁷

Since USITC did not generate long-term projections of China's WTO impact, it is impossible to comment on their accuracy. Its estimates of the event's early impact appear to be reasonable. Furthermore, USITC highlighted the potential losses associated with China's WTO membership, including a deepening trade deficit, as well as the gains. Still, some observers say USITC failed to predict the explosion of Chinese imports in the 2000s.¹⁸⁸ Many retrospective studies of China's WTO membership have linked it, and the subsequent growth of U.S. imports of Chinese goods, to a sharp decline in U.S. manufacturing employment.¹⁸⁹

There are at least two factors to consider when assessing predictions of the impact of the China's WTO membership. First, U.S. tariffs on Chinese imports were already relatively low by 1998.¹⁹⁰ The most significant outcome of WTO membership was ensuring Chinese and U.S. firms and investors that tariffs on Chinese goods wouldn't increase in the future. Some researchers claim it was the removal of uncertainty, not tariffs, that had the biggest impact on U.S.-China trade.¹⁹¹ Therefore, standard trade models that test the impact of tariff reductions would underestimate the impact of China's WTO membership.

Second, China's joining the WTO one just one of a series of significant legal, financial, and economic reforms that China undertook in the 1990s and 2000s.¹⁹² Those changes included moving to a market-oriented economy, allowing foreign investment, and shifting its development focus from agricultural to manufacturing. While the impact of China's joining the WTO may have been small in isolation, the cumulative impact of the reforms accompanying it were large.

¹⁸⁶ USITC, "[Assessment of the economic effects on the United States of China's accession to the WTO](#)," USITC publication 3229, August 1999.

¹⁸⁷ USITC, "[Assessment of the economic effects on the United States of China's accession to the WTO: Executive summary](#)," USITC publication 3228, 1999, xii.

¹⁸⁸ Public Citizen, "[Data fail: The divergence between rosy International Trade Commission projections and U.S. trade agreements' actual outcomes](#)," May 2016.

¹⁸⁹ Justin R. Pierce and Peter Schott, "[The surprisingly swift decline in U.S. manufacturing employment](#)," National Bureau of Economic Research, Working Paper 18655, 2012.

¹⁹⁰ Ling Feng, Zhiyuan Li, and Deborah L. Swenson, "[Trade policy uncertainty and exports: Evidence from China's WTO accession](#)," Center for Economic Studies and Ifo Institute, Working Paper 4780, 2014.

¹⁹¹ Pierce and Schott.

¹⁹² Paolo Davide Farah and Elena Cima, "[China's participation in the World Trade Organization](#)," in *El Comercio con China*, Aurelio Lopez-Tarruella Martinez (ed.), 85-121.

The long-term impacts of China's domestic reforms were outside the scope of USITC assessment, although they were mentioned in the report.¹⁹³

OBSERVATIONS

Several noteworthy observations emerge from this review of FTA impact assessments.

1. In nearly all USITC assessments reviewed by the authors, USITC researchers clearly documented the scope of their work, its limitations, the models and assumptions they used, and their results. The Mexico FTA report is somewhat less accessible, perhaps because Congress requested that it be “descriptive and concise rather than quantitative and detailed” or perhaps because it appears to be one of USITC’s first economic assessments of an FTA.¹⁹⁴
2. USITC assessments are required by law to focus narrowly on the trade agreements on which Congress will vote. Isolating the impact of individual variables is also central to the scientific method, so USITC and other economists are following best practices by limiting their analysis to one variable. However, their results must be interpreted within the context of many other variables affecting the U.S. economy.
3. Interpretations of USITC projections by third parties should be viewed with caution. The authors found multiple instances of USITC’s work presented in an erroneous, misleading, or selective manner.
4. The USITC’s economic research staff is active in the scholarly debate about modeling the impact of FTAs. Separate from the commission’s reports, staff members publish papers both individually and with colleagues in academia, review and publicize the work of other researchers, and host conferences.¹⁹⁵ They also comment publicly about the accuracy of test impact assessments. Recently, three USITC economists re-projected NAFTA’s trade impact using multiple economic models to test which models performed best.¹⁹⁶ The model USITC used for its TPP assessment, the Global Trade Analysis Project CGE model, performed better than the model used in the original NAFTA projections discussed above.

¹⁹³ USITC. Publication 3229, 1999, Appendix 1.

¹⁹⁴ Lloyd Bentson and Dan Rostenkowski, letter to Anne E. Brunsdale (Acting USITC Chair), September 27, 1990.

¹⁹⁵ For examples, see USITC Office of Economics website:

https://www.usitc.gov/research_and_analysis/office_economics.htm.

¹⁹⁶ Fox, Shikher, and Tsigas. In reviewing retrospective studies of NAFTA’s impact, they note, “These studies generally find that NAFTA had a relatively small effect on employment, prices, and welfare, as pre-NAFTA studies predicted. They also find that NAFTA had a large effect on trade, which is where the pre-NAFTA economic forecasts badly stumbled.”

SECTION V

THE TPP'S ESTIMATED ECONOMIC IMPACT: MAINE

This section presents estimates of the TPP's economic impact on Maine, extrapolated from estimates of its likely impact on the U.S. generated by the United States International Trade Commission (USITC). 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). 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.

METHODOLOGY

Basic Approach

The USITC estimates describe the TPP's expected impact on the entire U.S. 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 U.S. economic activity that occurred in Maine during the last three years. We then apply those ratios to the USITC estimates for national economic impacts in 2032. For example, from 2012 to 2014, the Maine's GDP was 0.32% of U.S. GDP. USITC estimates that the TPP would increase U.S. GDP by \$42.7 billion, in 2032. If 0.32% of that growth occurs in Maine, then Maine's GDP would increase \$138 million in 2032.

This approach assumes that the relationship between the Maine and U.S. economies remains constant through 2032. In reality, differing levels of public and private investment, and demographic change, may cause some state's economies to grow faster than others. Population projections alone suggest that Maine's economy may account for a smaller portion of the nation's future economic growth than faster growing states. However, quantifying the likely effects of those changes would require substantial analysis with additional assumptions, very little data, and considerable impression and uncertainty. Furthermore, it would probably affect the results only minimally. Thus, this study uses a simple extrapolation with maximum transparency and minimum assumptions. Assuming that Maine's economy constitutes an equal or smaller percentage of the U.S. economy in 2032 than it does today, then the following estimates can be viewed as upper-bound estimates of the TPP's potential impact.

The USITC calculates the TPP's impact by generating two projections of future economic conditions, one with the TPP and one without it (the "baseline" scenario). The differences in employment, wages, GDP, etc. are interpreted as the TPP's economic impact. It is important to remember that the results are relative to the baseline and not absolute gains or losses. For instance, where the TPP is projected to reduce employment, it may reduce the growth of employment rather than generate actual job losses. Conversely, where it is projected to increase employment, it may reduce job losses rather than create new jobs.

Where the USITC estimates the TPP's potential impact on the level of overall U.S. 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 U.S. 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 U.S. impacts, the USITC's percentage estimates changes to employment are the de facto projections of Maine employment impacts. Where that occurs, Maine-U.S. employment ratio is presented for context only.

Rounding errors mean that some results don't match up precisely. For instance, the estimated impact on Maine GDP is an increase of \$138 million and the estimated impacts on sector-level GDP total \$156 million. These inconsistencies are due in part to the level of detail provided in the USITC report. For example, USITC estimates that agricultural and food output would increase \$10.0 billion. That number could represent any value from \$9,950,000,000 to \$10,049,999,999 – a range of \$100 million. While that range is small relative to the national impact, it is large enough to generate minor inconsistencies when used for additional calculations. However, those inconsistencies but do not change the overall direction or size of the estimated impacts.

Data

In addition to the USITC estimates, this study utilizes the follow data sources:

Employment: Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW), 2013-2015. The USITC's employment estimates are for full-time equivalent positions. Because there is no equivalent measure at the state level, this study uses the QCEW, which includes both full- and part-time jobs.

Exports and Imports: U.S. Census Bureau's Origin of Movement series on state exports, 2013-2015. There are no corresponding data on state imports due the difficulty of tracking goods once they enter the U.S. Therefore, it is not possible to generate an estimate of the TPP's impact on Maine imports. There also is no information on state-level service exports.

GDP: Gross domestic product (GDP) represents the value all goods and services produced in an economy minus the value of all intermediate goods and services used in production. This study utilizes U.S. and Maine gross domestic product (GDP) data from the U.S. Bureau of Economic Analysis (BEA) for 2012-2014 (subsector data for 2015 are not yet available at the state level).

Income: Personal income data are from the BEA for 2013-2015. "Real income" means income that has been adjusted for changes in inflation. The USITC estimates of real income include changes in real purchasing power. A decrease in consumer prices caused by importing more low-cost goods generates an increase in real income.

Output: Gross output represents the total value of sales by all firms within an economy. Unlike GDP, it does not subtract the value of inputs used in production. The USITC assesses changes in output for various sectors and industries. However, state-level output statistics are not available. Instead, this study uses the Maine-U.S. GDP ratio as a proxy.

Population: Population projections from the Maine Office of Policy and Management (OPM), which are based on the U.S. Census Bureau's national population projections. OPM estimates that Maine's population will be 1.3 million in 2032.

RESULTS

Economy-wide Effects

The USITC estimates that the TPP would have slight, positive effects on overall measures of U.S. economic growth. In 2032, it would increase real income, real GDP, and employment by 0.23%, 0.15%, and 0.07% respectively. These changes would come from increased earnings due to higher 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: real income would increase by approximately \$163 per capita, real GDP would increase by approximately \$106 per capita, and there would be about 554 additional FTE jobs in 2032.

Table 1: Estimated economy-wide effects of TPP on U.S. and Maine: Changes relative to baseline in 2032					
	U.S. (USITC)		Maine		
	Level (billion)	Percent	Maine share of U.S. 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	--

Trade Effects

Trade among TPP countries would increase if the agreement went into effect, with the largest increases occurring between countries where current trade barriers are highest. Some trade would be diverted from non-TPP countries. The USITC estimates that overall U.S. exports to TPP countries would increase \$57.2 billion in 2032. The highest percentage increases in trade would be countries without an existing U.S. 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 U.S. exports. Imports would rise even more, by approximately \$48.9 billion, with most coming from TPP countries. The overall result would be a deepening of the U.S. trade deficit by about \$21.7 billion.

Table 2: Estimated trade effects of TPP on U.S. and Maine: Changes relative to baseline in 2032					
	U.S. (USITC)		Maine		
	Level (billion)	Percent	Maine share of U.S. 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	--	--	--
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Maine has a slightly higher percentage of exports to TPP countries than the rest of the U.S. 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.” Based on the USITC national estimates, 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.

Broad Sector Effects

While the TPP would generate overall economic gains, 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. Agriculture and food is by far the smallest of these sectors in both Maine and the U.S.¹⁹⁷ However, it would have the largest percentage gains because many countries have high tariffs in this sector. U.S. agriculture and food exports and imports would both increase, but exports would rise more. The net gain (exports minus imports) would be \$4.5 billion in 2032. There is no corresponding import data for Maine, but it is reasonable to assume that Maine consumers have spending habits similar to their U.S. peers. The degree to which Maine exports would increase depends on the ability of Maine farmers and food processors to leverage the new market opportunities created by tariff reductions in other countries.

According to the USITC estimates, the U.S. manufacturing, natural resources, and energy sector would fare the worst because of 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. These results reflect a continuation of recent trends. Trade has benefitted the U.S. economy overall but concentrated groups of workers, businesses, and regions, especially those involved in manufacturing, have experienced losses. In Maine, these results suggest that manufacturers who are export-oriented would fare better than those who are not.

International trade barriers in services are already relatively low, so percentage changes in that 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 U.S. demand for services would exceed the domestic supply (output), thereby increasing demand for imported services. This would presumably occur as cheaper imports gave U.S. consumers and businesses more money to spend on services.

¹⁹⁷ In 2015, agriculture and food’s share of total employment was 2.4% in the U.S. and 2.2% in Maine. In 2014, its share of GDP was 2.7% for the U.S. and 2.9% for Maine.

Table 3: Estimated broad sector effects of TPP on U.S. and Maine: Changes relative to baseline in 2032					
	U.S. (USITC)		Maine		
	Level (billion)	Percent	Maine share of U.S. economic activity (%)	Level (million)	Per capita
Agriculture and food					
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	--	--
Manufacturing, natural resources, and energy					
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	--	--
Services					
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	--	--

Industry-level Effects

The USITC's third set of estimates assess the TPP's impact on 56 industries that were chosen to illuminate specific areas of interest. For instance, 21 of those industries are in agriculture and food processing, even though that sectors accounts for less than 3% of U.S. GDP. 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 legally must be reported, than on output, which is often proprietary. The following section presents the calculations that were possible given those data limitations.

Agriculture and Food

The USITC expects the TPP to slightly increase output in all 21 agriculture and food sectors 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 is not disclosable due to privacy protections. 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 with which to extrapolate state impacts from the national estimates. Table 5 illustrates the magnitude of potential impacts in three sectors for which comparable Maine and U.S. data were available. The USITC expects that the TPP would increase U.S. output of dairy and processed food by 1.3% and 0.8%, respectively, in 2032, but reduce the growth of U.S. seafood production.

Using the methodology described above, an increase in U.S. dairy exports translates to an increased in Maine dairy exports of about \$2.7 million in 2032. This is based on Maine’s very small percentage of U.S. dairy exports (0.15%). Maine has a slightly larger percentage of U.S. processed food exports (0.35%). Growth in that sector would translate to about \$5.4 million in additional exports in 2032.

It is worth noting that the expected 10.3% increase in U.S. dairy imports is mainly in butter and butter oil from Canada and New Zealand. The USITC does not expect large changes in imports of non-fat dry milk (NDM). That is significant because recent high prices for NDM, due primarily to high demand in developing countries, have driven increases in federal minimum milk prices and are expected to continue doing so for the foreseeable future.¹⁹⁸ The price of butter is not expected to impact those prices.¹⁹⁹ If that is true, then increased dairy imports due to the TPP would not significantly impact the prices most Maine dairy farmers receive for milk, or the cost of Maine’s Dairy Stabilization Program. However, it could slightly increase competition for Maine butter producers.

According to the USITC, the TPP would likely decrease U.S. seafood output by about 0.2% in 2032. Exports would increase about 2.2%, with exports to Japan and Vietnam increasing 18% and 45%, respectively. U.S. imports would increase about 0.9% 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 (Brunei, Japan, Malaysia, New Zealand, and Vietnam).

How these changes would impact Maine fisheries, including lobster, 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. U.S. 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.

Table 5: Estimated agriculture and food (select industries) effects of TPP on U.S. and Maine: Changes relative to baseline in 2032				
	U.S. (USITC)		Maine	
	Level (million)	Percent	Maine share of U.S. economic activity (%)	Level (million)
Dairy				
Output	\$1,839.3	1.3	--	--
Exports	\$1,845.5	18.0	0.15	\$2.7
Imports	\$384.6	10.3	--	--
Employment	--	1.1	--	--
Processed food				
Output	\$2,396.5	0.8	--	--
Exports	\$1,540.0	3.8	0.35	\$5.4

¹⁹⁸ Karen Hansen-Kuhn and John Piotti, “[Maine agriculture and food systems in the Transatlantic Trade and Investment Partnership](#),” 2014 Trade Assessment prepared for the Maine Citizen Trade Policy Commission, July 2014.

¹⁹⁹ Ibid.

Imports	\$427.2	1.1	--	--
Employment	--	0.7	--	--
Seafood				
Output	\$-51.5	-0.2	--	--
Exports	\$74.1	2.2	7.75	\$5.7
Imports	\$231.9	0.9	--	--
Employment	--	-0.2	--	--

Services

The USITC estimates that the TPP would slightly increase output and employment in all service sectors except transportation, logistics, travel, and tourism. The USITC suggests two reasons for reduced growth in that industry. 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 away from that sector and into areas where trade liberalization creates new opportunities. Second, this industry includes international tourism. If income gains allow more U.S. residents to travel abroad, that would appear in the model as higher tourism imports. That calls into question the negative result in this category for Maine. While greater travel by U.S. residents may generate a net loss at the national level, it may benefit Maine. The results below should be interpreted with caution.

Table 4: Estimated service-industry effects of TPP on U.S. and Maine: Changes relative to baseline in 2032					
	U.S. (USITC)			Maine	
	Output (million)	Output (%)	Employment (%)	Maine share of U.S. economic activity (%)	Output (million)
Construction	\$7,234.8	0.2	0.2	0.34	\$24.6
Wholesale and retail trade	\$7,447.5	0.1	0.1	0.39	\$28.7
Transportation, logistics, travel, and tourism	\$-719.9	0.0	-0.1	0.29	\$-2.1**
Communications	\$2,845.6	0.2	0.1	0.14	\$3.9
Financial services n.e.c.*	\$1,520.0	0.1	0.1	0.32	\$4.9
Insurance	\$707.9	0.1	0.0	0.39	\$2.7
Business services n.e.c.*	\$11,576.0	0.2	0.1	0.26	\$30.0
Recreational and other services	\$1,749.8	0.1	0.1	0.36	\$6.2
Public administration, defense, education, health	\$9,981.0	0.1	0.1	0.42	\$41.8

*n.e.c. means "not elsewhere categorized"

**This result should be interpreted with caution. The U.S. result is partially due to increased international tourism as a result of higher U.S. incomes. Whereas that may be a net loss for the U.S., Maine may benefit from greater travel by U.S. residents.

Manufacturing, Natural Resources, and Energy

The USITC's estimates suggest that the TPP would have a neutral or slightly positive impact on output for 11 of 25 industries in manufacturing, natural resources, and energy. It would reduce output growth in the remaining 14 industries. The USITC notes that all industries within this sector are expected to grow in 2032 in absolute terms. Therefore, the negative results in the following table are reductions in growth, not absolute declines. Table 6 shows the USITC industries for which it was possible to extrapolate Maine results. The 2.1% (\$2,204.9 billion) increase in wood product imports is expected primarily from TPP members without an existing

FTA (Brunei, Japan, Malaysia, New Zealand, and Vietnam). Malaysia, New Zealand, and Vietnam were the 10th, 11th, and 13th largest sources of U.S. wood imports in 2015.²⁰⁰

Table 6: Estimated manufacturing, natural resources, and energy (select industries) effects of TPP on U.S. and Maine: Changes relative to baseline in 2032				
	U.S. (USITC)		Maine	
	Level (million)	Percent	Maine's share of U.S. economic activity (%)	Level (million)
Chemicals				
Output	\$-2,854.8	-0.3	0.15	\$-4.4
Exports	\$1,944.0	0.7	0.07	\$1.3
Imports	\$5,283.4	1.3	--	--
Employment	--	-0.3	0.28	--
Textiles				
Output	\$-328.5	-0.4	0.50	\$-1.6
Exports	\$256.6	1.3	0.02	\$0.0
Imports	\$869.4	1.6	--	--
Employment	--	-0.4	0.82	--
Wood products				
Output	\$-1,539.7	-0.5	1.17	\$-18.1
Exports	\$135.4	0.8	1.50	\$2.0
Imports	\$2,204.9	2.1	--	--
Employment	--	-0.6	1.24	--
Paper products, publishing*				
Output	\$-32.3	0.0	1.03	\$-0.3
Exports	\$39.7	0.1	3.85	\$1.5
Imports	\$722.2	2.0	--	--
Employment	--	0.0	0.92	--
Petroleum, coal products				
Output	\$2,931.5	0.2	0.06	\$1.8
Exports	\$1,023.8	0.7	0.88	\$9.0
Imports	\$518.8	0.4	--	--
Employment	--	0.2	0.32	--

* Results in this industry should be interpreted with caution. It is impossible to know whether the USITC results reflect changes in output and exports of paper, publishing, or both. In the U.S., paper accounted for about 60% of this category in 2014 (BEA, GDP). In Maine, it accounted for nearly 90%.

²⁰⁰ U.S. Census Bureau, USA Trade Online. Accessed August 30, 2016.

Appendix A: Summary of TPP economic impact assessments compiled by USDA Economic Research Service (excerpt)²⁰¹

Authors	Scenario	Impact on U.S.	Results
Burfisher et al. (2014)	100% tariff elimination	Zero impact on U.S. real GDP in 2025 compared with baseline	Changes in real 2025 GDP compared with baseline range from zero for the U.S. and other countries to 0.1 percent for Vietnam
Cheong (2013)	100% tariff elimination	Less than 0.01-percent increase in 2027 GDP compared with baseline	Changes in 2027 GDP compared with baseline range from -0.13 percent for Chile to 0.97 percent for New Zealand
Kawasaki (2014)	100% tariff elimination and 50% reduction in nontariff barriers (NTBs) on preferred partners and 25% NTB reduction in rest of world	Up to 1.3-percent increase in welfare as percent of real GDP	Changes in welfare as percent of real GDP range from 9.9 percent in Vietnam to 0.1 percent in U.S. and Canada with tariff removal; with tariff and NTB removal, ranges between 20.6 percent for Malaysia and 1.3 percent for U.S.
Itakura and Lee (2012)	100% tariff elimination and 25% reduction in NTBs, includes TPP plus an East Asian and Asia-Pacific trade area	0.8-percent increase in 2030 welfare compared with baseline	Changes in 2030 welfare compared with baseline range from 0.8 percent for the U.S. to 5.6 percent for Vietnam.
Petri and Plummer (2012)	Partial removal of tariffs and NTBs, endogenous changes in foreign direct investment (TPP includes South Korea)	0.38-percent increase in 2030 GDP compared with baseline	Changes in 2025 GDP compared with baseline range from 0.38 percent for the U.S. to 13.57 percent for Vietnam.
Todsadee et al. (2012)	100% tariff elimination	Less than 0.01-percent increase in 2027 GDP compared with baseline	Change in GDP range from -0.03 percent for Peru to 0.81 percent for Vietnam.

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