

Theme Overview: Impacts of Trump 2.0 Tariff Policies on Agricultural Commodity Trade

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JEL Classifications: F13

Keywords: Agricultural commodities, Tariff policies, Trade

DOI: 10.22004/ag.econ.371490

In the spring and summer of 2025, President Trump unilaterally imposed a slate of new tariffs on numerous countries (Pettypiece, 2025). These tariff unveilings caused significant disruptions in global trade. While President Trump was able to negotiate “favorable” trade agreements for the United States with some countries (the European Union, Indonesia, Japan, Pakistan, the Philippines, South Korea, the United Kingdom, and Vietnam), negotiations with other major economies (Brazil, Canada, China, Mexico, and India) have stalled or are still ongoing as of mid-October 2025.

US Tariff Policies with Large Economies

I briefly review US tariff policies that have been negotiated with or imposed on major economies. See Ridley and Devadoss (2026); Grant, Arita, and Karagulle (2025); and Zurita and Steinbach (2025) for US trade agreements with other countries.

The European Union

Starting from the “Liberation Day” tariff announcements, the European Union and the United States threatened each other with back-and-forth retaliatory tariffs. But both countries reached a trade agreement on July 27, 2025. As part of the deal, the United States will roll back the threatened 30% tariff to a 15% tariff on almost all goods coming from the European Union. However, this deal appears to be one-sided, as the European Union agreed to eliminate tariffs on most goods and agricultural products (nuts, dairy products, and fresh and processed fruit and vegetables) and required Europe to invest \$600 billion in the United States and purchase US oil, gas, and nuclear fuel worth \$750 billion to get the tariff reduction (Reuters, 2025a). Yet according to the European Union, these commitments are nonbinding and not concrete (Malmström, 2025). Regardless of the specifics, with the highest tariffs since the 1950s, President Trump 2.0 marks a major backslide in trade relations with the largest US trading entity (Malmström,

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2025). Since this agreement must be approved by all member states and the EU parliament, it is not a done deal yet.

Canada

The United States and Canada had announced back-and-forth retaliatory tariffs following the Trump administration’s announcement of tariffs on most Canadian imports in early February 2025. While around

85% of US–Canada trade remains tariff-free under USMCA, the United States imposed tariffs of 25% on steel, aluminum, and automotive imports in early April, which later increased to 50% (Shepardson, 2025), while Canada retaliated with tariffs on US goods. As of October 2025, no trade deal has been reached between these two neighbors, and the existing tariffs remain. On October 25, 2025, Trump threatened to increase the tariff on Canada by an additional 10% because of an antitariff television commercial by the Ontario province (Associated Press, 2025).

Mexico

On March 4, 2025, the 25% US tariff on non-USMCA-compliant products took effect. The Fair and Reciprocal Trade Order, issued on April 2, did not have a major impact on Mexico, as the 25% tariffs were already in place, and exemptions for USMCA-compliant imports remained. To pressure Mexico into making a trade deal, President Trump announced an increase in the tariff to 30% if an agreement was not reached by the end of October. A 90-day extension avoided this tariff increase, but as of mid-August, no deal has been reached.

China

Between early February and early April 2025, the US–China trade war peaked with the US imposing large tariffs of 145% on goods coming from China and China retaliating with tariffs of 125% on US goods (Tang, 2025). Then, on May 12, the United States and China reached a 90-day truce, with US tariffs on Chinese goods falling to 30% and Chinese tariffs on US goods declining to 10%. Then, on June 11, following a meeting between the two countries' officials, a trade truce was extended until November 10 (Reuters, 2025b). At the meetings between President Trump and Chinese President Xi Jinping on October 29, 2025, an agreement was reached to lower the total effective US tariff on Chinese imports from 57% to 47%, for China not to restrict rare earth mineral exports, and for China to buy 25 million metric tons of US soybeans over 3 years (Aggarwal, Ganglani, and Guo, 2025).

Brazil

The “Liberation Day” tariff announcement included a 10% tariff on all Brazilian goods entering the United States. However, on August 1, the tariffs were increased to 50% due to President Trump's opposition to the judicial actions against Brazil's former president, Jair Bolsonaro (Singh and Brito, 2025). No agreement has been reached as of mid-September 2025, and the 50% tariffs remain in place.

India

The United States imposed a baseline “reciprocal tariff” of 27% on Indian goods on April 2, 2025 (Brownstein, 2025). Since this tariff announcement, several rounds of negotiations have taken place between the United States and India, with no resolution. Indian tariffs on

agricultural and dairy products are a sticking point in reaching any negotiated settlement. In July, this baseline tariff was changed to 25% (Brownstein, 2025), and the Trump administration further placed an additional 25% tariff because of India's continued purchase of Russian oil, for a total tariff rate of 50% on Indian goods (Reuters, 2025c; 2025d). Because of this escalating US tariff, negotiations broke down, and no agreement has been reached by the end of October 2025.

Impact of the US Tariffs on Specific Sectors

President Trump's negotiated trade framework with some countries, higher tariffs on other countries, and retaliatory tariffs by certain countries will have significant impacts on the world agricultural commodity trade. The articles in this theme

examined the implications of these policies for some US farm sectors.

Ridley and Devadoss (2026) note that the Trump administration's whirlwind of new tariffs will likely have ramifications for US agriculture, particularly for row crops, which reached \$60 billion worth of exports in 2023. Their article surveys the implications of current trade disputes, the resulting retaliatory responses, and ongoing trade negotiations for US row crop exports. This study concludes that coercion and threats to achieve trade policy goals can make the United States an unreliable trade partner, as evident from the import diversion by China after the first US–China trade war.

Liu, Gopinath, and Robinson (2025) investigate the impacts of the US–China trade conflicts on the US cotton sector and the global cotton supply chain. Chinese tariffs adversely affect the competitiveness of US cotton in the Chinese market, which will cause US cotton exports to be diverted to other countries and helps Brazil to expand its cotton market share in China. Meanwhile, US tariffs on Chinese textile and apparel products disrupt the global cotton supply chains and trade flows. These policies can lead to short- and long-term challenges for the US cotton sector, including significant competitive pressures from other exporters and difficulties in the US recapturing global cotton market share. To overcome these problems, the US cotton sector needs to lower production costs, improve operational efficiency, diversify export markets, and implement strategic marketing approaches.

Muhammad, Martinez, and Wyatt (2025) summarizes recent trends in US beef production and trade. They discuss how the US beef sector has adapted to changing global consumption patterns and domestic supply constraints. In addition, the authors evaluate the impact of recent US tariffs and trade policies on US beef imports from key exporters: Canada, Mexico, and Brazil. They also explore the effects of current trade policies on US beef exports, particularly how major beef-producing

countries (such as Brazil) have increased their global market share at the expense of US beef exports.

He, Naing, and Devadoss (2025) examine the structural drivers behind US reliance on Mexican fresh vegetable imports, review US fresh vegetable trade patterns, and simulate the impacts of a hypothetical US tariff of 25% on fresh vegetable imports from Mexico and a 17% tariff on Mexican fresh tomatoes. Since Mexico supplies about 71% of US fresh vegetable imports, valued at \$9.4 billion in 2024, these policies have significant implications for the US fresh vegetable sector. This study finds that a 25% tariff on Mexican fresh vegetables decreases imports by 29%–67% depending on the vegetable, which increases the price to consumers already burdened with high food price inflation. This study also discusses the potential implications of reduced fresh vegetable imports on employment and prices along the US fresh vegetable supply chain.

Glauber, Piñeiro, and Gianatiempo (2025) examine the effects of current US tariff policies on trade flows, particularly Latin America and the Caribbean countries' agricultural imports and exports. They find that the impact of US tariffs on US imports from these countries will depend on the relative magnitude of tariffs compared to other suppliers, such as Mexico. The LAC countries would likely gain from any trade war between the United States and China, particularly for oilseeds, grains, and meats.

Who Pays for the Tariff?

Many in the Trump administration say that exporters will pay for the import tariff. Standard graphical analysis in any undergraduate trade textbooks shows that tariffs levied by a large country, such as the United States, are paid by both importers and exporters (Reed, 2001). Part of the US tariffs will be paid by US importers, which will raise the price for US consumers. The exporters will receive a lower price due to the US tariffs. Therefore, US tariffs hurt US consumers due to higher prices paid by

them and exporters in the foreign country because of lower prices received by them. Thus, it is not correct to say that tariffs are not paid by US consumers but are paid by foreigners. Ultimately, a portion of tariffs is effectively a disguised tax on American consumers. Furthermore, these tariffs add inflationary pressure and harm consumers who are already saddled with high prices, which is consistent with the findings by McKibbin et al. (2025), Zahn (2025), and several studies on this theme.

Tariff Revenues

President Trump's 2.0 tariff policies generated \$167 billion in tariff revenues through the end of November 2025 (Jacobson, 2025). However, it is worth emphasizing that these tariff revenues are collected from US importers, not from exporters. US importers transmit this tariff to consumers in the form of higher prices. Therefore, these revenues are taxes collected from US consumers. In general, grocery bills are a large share of the budget for poor US consumers, and higher grocery prices, because of President Trump's tariff policy, are a bigger drain on the poor than on the rich.

Conclusions

Because of the US–China trade war, the first Trump administration provided subsidies to farmers through the market facilitation program. The US Agriculture Secretary, Brooke Rollins, indicated that the farm sector is not doing well because many importing countries are not buying US commodities (Fields, 2025). The US government is providing a \$12 billion bailout to farmers, with \$11 billion going to row crop farmers (Kopack and Gutierrez, 2025). These subsidies further perpetuate inefficiencies, and farmers would rather earn profits by selling their commodities in the market. Free trade policies do not require subsidy payments to compensate for the problems caused by tariff policies and are also the most efficient.

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Acknowledgments: This work was supported by the USDA National Institute of Food and Agriculture, Agricultural and Food Research Initiative Competitive Program, Agriculture Economics and Rural Communities, United States of America, grants #2022-67023-36382 and #2023-67023-40643. I thank the *Choices* editor, Zhengfei Guan, for asking me to spearhead this theme and for useful comments on this theme overview.

Impacts of the Trump Administration's Trade Disputes on US Row Crop Exports

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JEL Classifications: F13; Q17

Keywords: Row Crops, Tariffs, Trade Disputes

DOI: 10.22004/ag.econ.371491

Soon after taking office in January 2025, the second Trump administration launched a rapid-fire sequence of announcements of new tariffs on US imports. In addition to implementing an across-the-board 10% increase in US tariff rates, the administration undertook a staggered series of bilateral trade actions, among them the notorious “reciprocal” tariffs that enacted new country-specific duties on imports from 57 different countries. The various levies on imports from major US trading partners—including Brazil, Canada, China, the European Union (EU), India, Japan, Mexico, South Korea, and others—were swiftly met by threats of commensurate retaliatory responses from many of the targeted countries. The chaotic sequence of tariffs and ensuing retaliatory threats stoked immediate fears over a redux of the trade wars of the first Trump administration. These fears were particularly acute regarding the potential ramifications for US agriculture, an industry that endured billions of dollars of export losses during the trade conflicts of 2018–2019 (Grant et al., 2021). The wider scope of the ongoing trade tensions has the potential to generate export losses from retaliation that surpass those from the trade disputes of the first Trump administration. Adding to the uncertainty impacting the US trade situation is the ongoing litigation over the reciprocal tariffs, as the legality of the statutory basis invoked by the Trump administration to impose the tariffs—the International Emergency Economic Powers Act (IEEPA)—will be evaluated by the Supreme Court in January 2026.

Within agriculture, few commodities have more at stake from the renewal of trade tensions than US row crops. Of the sector's \$165 billion in total revenues in 2023, which reflects the combined value of US production of cereal crops, fiber crops, and oilseeds (FAO, 2025), roughly \$60 billion came from foreign exports, a sign of the outsized importance of international markets for the industry. International markets are the economic lifeblood of most row crop commodities (with exceptions

such as corn, for which US domestic sales dwarf foreign exports), with exports accounting for 81% of total US sales for cotton, 79% for sorghum, 65% for soybeans, and 53% for wheat (FAO, 2025). While enduring, widespread retaliation to the US tariffs has largely failed to materialize (excepting China's retaliatory tariff response), the trade-related headwinds created by the administration's tariff actions threaten to compound the effects of other ongoing challenges facing the industry. Such challenges include a host of factors such as rising competition from export competitors like Brazil, high and rising input costs, and low commodity prices. Together, these and other challenges threaten the sector's position as a global export leader (Ridley and Devadoss, 2025). As a result, and fearing the consequences of another trade war, industry groups such as the American Soybean Association and National Corn Growers Association have clamored for a swift end to the renewed trade hostilities (ASA, 2025; NCGA, 2025)

The Trump administration has frequently sought to use tariffs as leverage for extracting market access concessions from targeted countries. While preliminary frameworks for ad hoc bilateral trade deals have been announced in a handful of prominent cases, such as between the United States and the European Union or the United States and Japan, specifics about most of the deals remain scarce. Additionally, critical discrepancies in the announced content of the agreements as reported by US officials versus negotiating partners have raised questions about what exactly the United States and its trading partners have agreed to (Davis, 2025; Malmström, 2025). Many of the announced deals have specific provisions that facilitate expanded access for American agricultural products, such as Japan agreeing to possibly allocate a larger share to US rice imports within its tariff-rate quota scheme (Govella, 2025) or Bangladesh agreeing to undertake minimum purchases of US wheat for a period of 5 years (Ruma, 2025). In some cases, however, such as in the ongoing

negotiations between the United States and Japan over access to Japan's rice market, negotiators on the respective sides have made conflicting public statements about the specifics of the preliminary deals (Lee and Tanaka, 2025). Substantial hurdles thus remain to codifying the details that underpin the Trump administration's handshake deals. For instance, the exact scope of the tentative US–EU agreement as pertaining to agricultural products remains to be finalized, and the completed agreement will require ratification by each EU member state, a questionable prospect given the sensitive nature of agriculture in trade negotiations. Other examples abound of deals whose substance amounts to bullet points describing aspirational outcomes to be realized from ongoing negotiations.

In this article, we describe the implications of the tariff actions undertaken by the Trump administration in its opening months. To this end, we elaborate on the implications of current trade conflicts and the potential impacts of several of the most prominent bilateral deals currently being negotiated with key trading partners for US row crop exports.

Retaliation and US Row Crop Exports

In response to the Trump administration's cavalcade of new tariffs, many large US trading partners initially threatened to reciprocate with retaliatory measures of their own. In February 2025, the United States announced the imposition of tariffs on Canadian, Chinese, and Mexican exports related to grievances over drug trafficking and immigration (Bown, 2025, provides a detailed breakdown of the timeline of US tariff announcements). Canada's government responded by outlining proposed retaliatory measures that would target \$115 billion of US exports, including agricultural products such as fruits and vegetables, beef and pork, and dairy (US wheat, barley, and canola were also targeted, but corn and soybeans, the most valuable US–Canada row crop exports, were spared). Mexico's government similarly announced plans to retaliate but did not specify which American products it would target, Mexican leadership's aim being to pursue a conciliatory approach to resolving trade hostilities with the United States (Gillies and Sánchez, 2025).

As would become a recurring theme during its initial months, the Trump administration backed down from many of its threats after brief periods of negotiation. Mexico suspended its planned retaliation, and Canada's retaliation ended up targeting a narrower range of goods than in its original announcement, many of which (such as dairy and poultry products) are thinly traded due to existing Canadian import barriers. The European Union followed a similar course in response to planned US tariffs on EU exports announced in April, with the bloc announcing, but then quickly withdrawing, its own retaliatory measures against the United States. US officials have consistently postponed the implementation

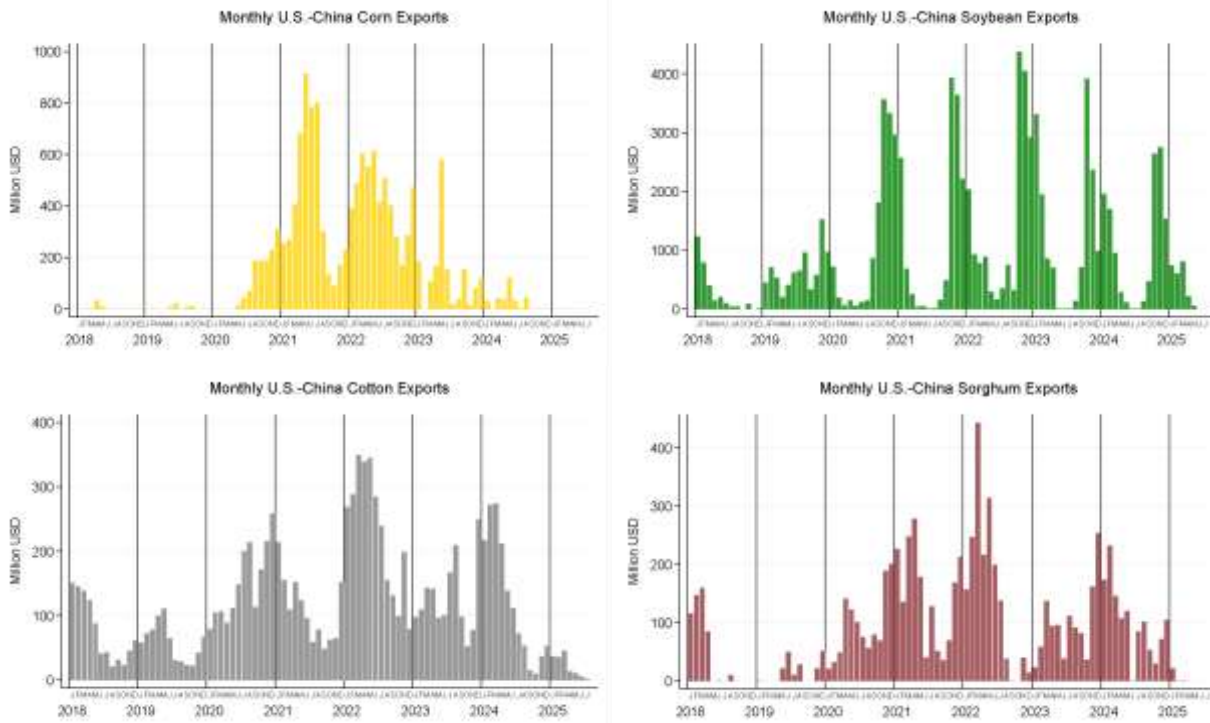
of many of the announced bilateral tariffs, though the country-specific reciprocal tariffs revealed earlier in the year finally entered into force in modified form on August 7.

A key exception to the pattern of announced but later suspended retaliation has been the case of China, which in early April met US tariffs with its own retaliatory duties of 125%. In the ensuing months, China lowered its initially prohibitive duties to 20% or 25% depending on the product. Given its position as the largest destination for US row crop exports (driven in large part by the massive volumes of US–China soybean exports), China's retaliation has dire implications for the industry. As we discuss further below, US–China exports of major row crops such as soybeans, cotton, and sorghum effectively collapsed as of late 2025 (though it is worth noting that US exports to non-China destinations of commodities such as corn have remained robust). Consequently, and regardless of the ultimate success of ongoing negotiations, the renewed trade tensions seem poised to further contribute to the fraying of trade relations between the world's two largest economies.

Recent history provides a glimpse of the possible outcomes for the industry, even if a deal with China is secured. The Phase One deal signed in January 2020, which paused the first US–China trade war of 2018–2019, led to an increase in China's imports of US farm products. The nadir in US exports during the trade war and the ensuing increase that followed the truce are shown in Figure 1, which depicts monthly US–China exports of major row crops from 2018 to mid-2025. However, the uptick resulting from the Phase One deal has not endured. For each of the depicted commodities, the initially large expansion in exports was later revealed to be a mirage, with exports of commodities such as corn all but evaporating in more recent years (an outcome to which China's large, recent domestic corn crops have contributed). One of the lingering consequences of the first US–China trade war has been China's growing reliance on Brazil and other non-US agricultural exporters for its commodity imports, particularly soybeans, corn, and cotton (Dhoubhadel, Ridley, and Devadoss, 2023; Ridley and Devadoss, 2023), each of which is a cornerstone US export commodity.

Despite the steady erosion in US–China trade relations, China remains a vital foreign market for US row crops. Data from the US International Trade Commission reports that China absorbed \$12.6 billion of US soybean exports (51.5% of the US total), \$1.5 billion of cotton exports (29.7%), \$1.2 billion of sorghum exports (86.1%), and \$484.8 million of wheat exports (8.2%) in 2024 (USITC, 2025). However, as Figure 1 depicts, the ongoing trade tensions have already had a dramatic negative impact on US–China exports, with trade volumes falling far below their levels of prior years. Total US–China corn and soybean exports for January

Figure 1. Monthly US–China Exports of Major Row Crops, 2018–2025



Data source: USITC DataWeb (<https://dataweb.usitc.gov/trade/search/Export/HTS>).

through July 2025 totaled \$3.1 million and \$2.5 billion, respectively; for comparison, the value of US–China corn and soybean exports for the same half-year interval averaged \$1.6 billion and \$4.4 billion, respectively, over the 2020–2024 period. Similar collapses in half-year exports across the two periods of comparison are evident for cotton (\$150.0 million in 2025 versus \$1.1 billion in 2024–2025) and sorghum (\$24.2 million versus \$783.7 million). For wheat (not depicted in the figure), zero US exports to China were recorded in the first half of 2025 but averaged \$435.3 million in January-to-June exports over 2020–2024.

Some glimmers of hope in US–China trade relations were provided in early November when China pledged to buy 12 million metric tons of US soybeans by the end of the year and a further 25 million metric tons of purchases to take place in 2026. Whether the conclusion of a trade truce between the two countries will resuscitate US–China agricultural exports remains to be seen, but both the short- and long-run dynamics of trade between the two countries paint a dire picture. Even when (and if) a settlement emerges between the two countries, the other deals struck thus far by the Trump administration suggest that a large portion of the existing tariffs will be left in place. As in the first US–China trade war, a possible outcome of negotiations will be the establishment of temporary new minimum purchase agreements on China's part. Nonetheless, and as the above figures show, temporary purchase commitments

do not necessarily translate to enduring export gains. Should the worst come to pass for US–China exports, the United States may want to seek out alternative export markets. However, very few trade partners have the same capacity to absorb US agricultural exports in the way that the Chinese market can, and efforts to secure new trade deals with other large trading partners remain in preliminary stages.

Outlook for Ongoing Trade Negotiations and Implications for US Row Crop Exports

One of the primary hopes of the Trump administration and US commodity groups is that potential new trade deals with countries targeted by US tariffs will help achieve expanded access to foreign markets. As discussed above, the status of these negotiations continues to evolve on a near-daily basis, and even in the cases for which tentative agreements have been announced, many important details remain to be finalized. Furthermore, as details of the tentative new trade deals gradually emerge, some observers have assessed that their actual substance lies far from US officials' announcements of the initial details of the deals. Some commentators have noted that the fledgling agreements typically consist of nonbinding, aspirational language in place of concrete commitments, such as "the United States and the European Union intend to work together to address non-tariff barriers affecting trade in food and agricultural products" (Karma, 2025,

emphasis original). The current trade policy landscape thus remains pervaded by uncertainty, making it difficult to generate precise forecasts on the possible consequences for US row crop exports of ongoing trade negotiations.

Below, we describe the status of current negotiations with selected major export destinations for US row crops. While other deals have been announced and the administration claims that negotiations remain ongoing with a number of major US trading partners, we highlight the cases that we do because of the countries' large export potential and prominence as negotiating targets (India and the United Kingdom) or their sizable existing trade in row crops with the United States (Japan). However, the conclusions that we draw from these examples readily extend to the ongoing bilateral negotiations with other trade partners. For each trade partner, we list the value of US row crop exports (the combined value of cereal, oilseed, and cotton exports) as of 2024.

US–India (\$233.5 million)

India has long been viewed as a promising export opportunity for US agriculture, given its population of more than 1.5 billion and its high barriers to trade, particularly for agricultural products (Choi et al., 2025). However, the country's export potential for US agriculture has largely remained untapped: US–India row crop exports are paltry relative to the size of the two countries, with the vast majority (\$209.0 million) accounted for by cotton exports. Consequently, some of the Trump administration's earliest trade policy maneuvers focused on securing expanded market access for US farm products in the world's most populous country. Negotiating objectives of particular interest for the US row crop sector include the easing of India's trade restrictions on fuel ethanol and genetically modified (GM) corn and soybeans.

Despite these objectives and initial optimism on both sides, trade relations between the two countries have soured. In July, the administration announced new 25% duties on Indian exports over grievances relating to several of India's barriers to agricultural trade, which were soon raised to 50% because of India's continuing purchases of Russian oil. In August, US Treasury Secretary Scott Bessent described Indian negotiators as "recalcitrant," and President Trump declared that trade negotiations would remain on hold until the US grievances that inspired the tariffs were addressed. The intensifying trade tensions between the two countries suggest that a trade deal remains distant.

US–United Kingdom (\$155.9 million)

Like India, the United Kingdom has long been upheld as an export market with significant potential for US agriculture. Trade in row crops between the United States and the United Kingdom has remained

comparatively limited, as tariff and nontariff barriers, along with the United Kingdom's well-established trade relations with the European Union, inhibit US exporters' access to the British market. One of the earliest negotiating successes claimed by the Trump administration was therefore the "Economic Prosperity Deal" reached with the United Kingdom in May. President Trump proclaimed at a White House event announcing the deal that it would "dramatically increase access for American beef, ethanol, and virtually all of the products produced by our great farmers" (White House, 2025).

However, even with the tentative deal in place, market access issues for US row crop commodities remain. Restrictions on GM imports, a perennial sticking point in US–EU and US–UK trade relations, remain in place. Moreover, the agreement does not address the United Kingdom's existing barriers to imports of hormone-treated beef, which have indirect implications for demand for corn and soybeans as feed. Consequently, and as with the US–EU deal and other preliminary bilateral negotiating frameworks, most of the agreement's specifics remain to be determined. The fact that most of the particulars of the deal have yet to be finalized, namely, the tariff treatment of products besides the ones explicitly mentioned in the agreement's announcement, leaves open the question of whether the deal will yield meaningful trade benefits for the US row crop sector.

US–Japan (\$5.2 billion)

Japan is one of the largest destinations for US row crops, and a partial agreement (the US–Japan Trade Agreement, or USJTA) was inked during the first Trump administration and entered into force in 2020. The USJTA liberalized many of Japan's restrictive trade barriers facing American products such as barley, corn, and wheat, and the agreement ultimately led to 90% of US exports of food and agricultural products entering the Japanese market duty free or under preferential tariff rates. Japanese officials were surprised, then, when the country's exports were hit by 24% duties under the Trump administration's reciprocal tariff announcement in April. The ensuing trade talks between the two countries were marked by confusion and conflicting statements from both sides about specifics in the agreed-upon content of the deal under negotiation (Kihara, 2025).

A tentative agreement between the two countries was reached in July; however, as with the US–EU and US–UK agreements, most of the specifics remain to be ironed out in later negotiations. President Trump declaimed in a July social media post that "perhaps most importantly, Japan will open their Country to Trade including... Rice and certain other Agricultural Products [sic]" (Maher and Buchwald, 2025). However, Ryosei Akazawa, Japan's trade negotiator, was less exuberant in describing the agreement's implications for agricultural trade. Akazawa indicated that the share of American rice

imports within Japan's tariff-rate quota may increase under the current agricultural trade framework, while underscoring that the agreement would "not sacrifice Japanese agriculture" (Maher and Buchwald, 2025). Emblematic of the other tentative agreements negotiated by the administration, the lack of specifics and concrete commitments suggests that the deal's impacts on US row crop exports will conceivably be limited.

Conclusion

As in previous bouts of US protectionism, internationally exposed sectors such as agriculture have much to lose from reprisals by trade partners and tit-for-tat retaliatory spirals. Past trade conflicts have clearly demonstrated what is at stake, as trade partners readily target export-reliant and politically sensitive commodities such as row crops to inflict the greatest possible political and economic damage. Thus, even as the Trump administration wields tariffs as a tool for securing market access concessions from trade partners, it is essential to note the very real downsides of this approach. It is equally important to note that the ramifications of such an approach to trade negotiations extend far beyond the immediate impacts from retaliation. A volatile trade policy environment creates heightened uncertainty for

both exporters and importers, which has undeniable negative consequences for US agriculture (Gopinath, 2021). Additionally, the use of coercion and threats to achieve trade policy objectives can lead to the United States being seen as an unreliable trade partner (Luckstead and Devadoss, 2025). The consequences of such an erosion of trust are plainly evident from the steady decoupling of US–China trade relations that resulted from the first US–China trade war.

All told, the trade policy situation facing the US row crop sector, and US agriculture more broadly, remains highly fluid. Answers to the questions of whether the retaliatory responses incurred by US tariffs will widen in scope, or whether the ongoing negotiations being pursued by the Trump administration will yield substantive results, have yet to be revealed. Nonetheless, the latest batch of trade disputes has already had impactful consequences for US row crops, with exports to China falling off dramatically throughout 2025. Any new purchase commitments or arrangements to expand market access with other trade partners that will potentially be realized from pending trade deals will need to be substantial—more substantial than what the preliminary deals negotiated thus far seem poised to deliver—to make up for the export losses that have already manifested.

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Assessing the US Cotton and Textile Industry Amid Two Rounds of US–China Trade Tensions

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JEL Classifications: F10, F13, Q17

Keywords: China, Cotton, United States, Tariff, Trade War

DOI: 10.22004/ag.econ.371492

US and China Trade Actions and Specific Tariffs

Beginning in 2018, the United States introduced major tariff measures on imports, resulting in retaliatory actions from its trading partners. A central flashpoint was the Section 301 Trade Investigation under the Trade Act of 1974 against China. This investigation triggered multiple rounds of tariffs and retaliatory tariffs, culminating in a 2-year trade conflict during 2018–2019 (Liu et al., 2022). Although tension eased with the Phase One trade agreement in 2020, tariffs on US cotton and Chinese textiles disrupted supply chains and shifted sourcing strategies (Liu, Robinson, and Shurley, 2018; Muhammad, Smith, and MacDonald, 2019a,b; Liu et al., 2022).

In 2025, trade tensions resurfaced when the United States imposed a 20% “fentanyl-related” tariff on all Chinese imports under the International Emergency Economic Powers Act of 1977. In response, China imposed a 15% tariff on US cotton, among other agricultural products (USDA-FAS, 2025b). This was followed by the “Liberation Day” or “reciprocal” tariffs, in which the US imposed an additional 34% tariff on top of the fentanyl-related tariff on China. In rapid succession, reciprocal tariffs on Chinese goods were raised to 125%, with the total tariffs added to Chinese goods reaching 145% (a 20% fentanyl surcharge plus a 125% reciprocal tariff). China responded with tariffs of up to 125% on US goods. These measures remained in place until a temporary truce was established. Under the truce, Chinese textile and apparel exports to the US face an additional 30% tariff (a 20% fentanyl surcharge plus a 10% reciprocal tariff), while US cotton exports to China face an additional 25% tariff (15% fentanyl retaliatory tariff plus a 10% reciprocal retaliatory tariff).

Although the Phase One trade agreement included cotton in the temporarily tariff exclusion list to encourage

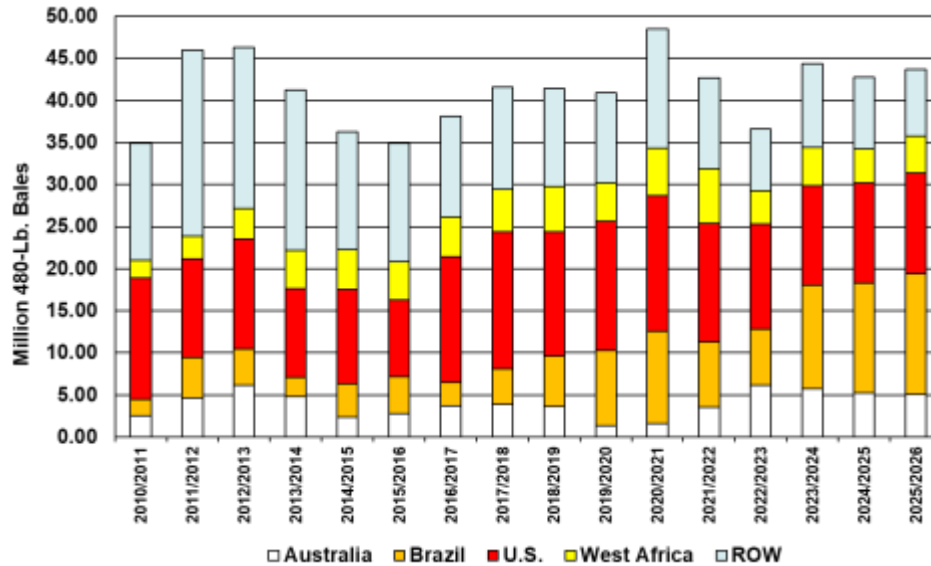
imports, persistent policy uncertainty and renewed trade frictions have prompted the Chinese textile industry to source cotton from alternative suppliers, notably Brazil (Gopinath, 2021; Sabala and Devadoss, 2021; Ridley and Devadoss, 2023). This shift has weakened the US cotton industry’s competitiveness, reduced market share, and increased global competition. This article examines the impact and implications of these tariffs for the US cotton industry so that actions can be taken to mitigate these impacts.

Global Cotton Market Impact on Imports and Exports

China remains a dominant force in the global cotton market, whose imports are regulated by a tariff-rate quota system linked to government reserve programs (Liu et al., 2022; Liu, Munisamy, Robinson, 2025). Its share of global cotton imports has ranged from 12% to 34% since 2017, reflecting shifts in reserves and quota policies. Despite being the world’s largest cotton producer in 2025 (31.5 million bales), China still imported 5.3 million bales, ranking just behind Bangladesh, Vietnam, and Pakistan.

The United States, historically the top cotton exporter (Figure 1), sent about 87% of its production abroad over the past decade (2016–2025). However, its global market share fell from 39% in 2016–2017 to 26% in 2023 before rebounding slightly to 28% in 2024–2025, due to the onset of the first round of trade dispute with China. Meanwhile, Brazil’s ability to double-crop with other crops has driven substantial growth in its cotton production and exports. The combined pressures of increasing global competition, rising input costs, and drought in the US Southern Plains have led to financial losses for many US cotton producers since 2022 (Liu, 2024a,b).

Figure 1. Top Global Cotton Exporters by Country and Year



Source: Data from the USDA-FAS Production, Supply and Distribution Database.

Brazil, benefiting from lower production costs, higher yields, and expanded infrastructure, surpassed the US as the world’s leading cotton exporter in 2023. Much of this growth is closely tied to China’s strategic diversification away from US cotton, with Chinese investment in Brazilian infrastructure improving logistics, port access, and overall competitiveness (Colussi et al., 2025). In 2024, Chinese investment in Brazil doubled to \$4.2 billion, concentrated in logistics and power (CEBC, 2025). From 2007 to 2024, China invested \$77.5 billion in Brazil’s energy, transport, and agribusiness sectors, including \$2.3 billion directly in agriculture. The larger share targeted ports, railways, energy, and mining (CEBC, 2025). This partnership and investment enable China to secure stable food and feed supplies while allowing Brazil to ship its agricultural products on time, at a lower cost, and with fewer delays.

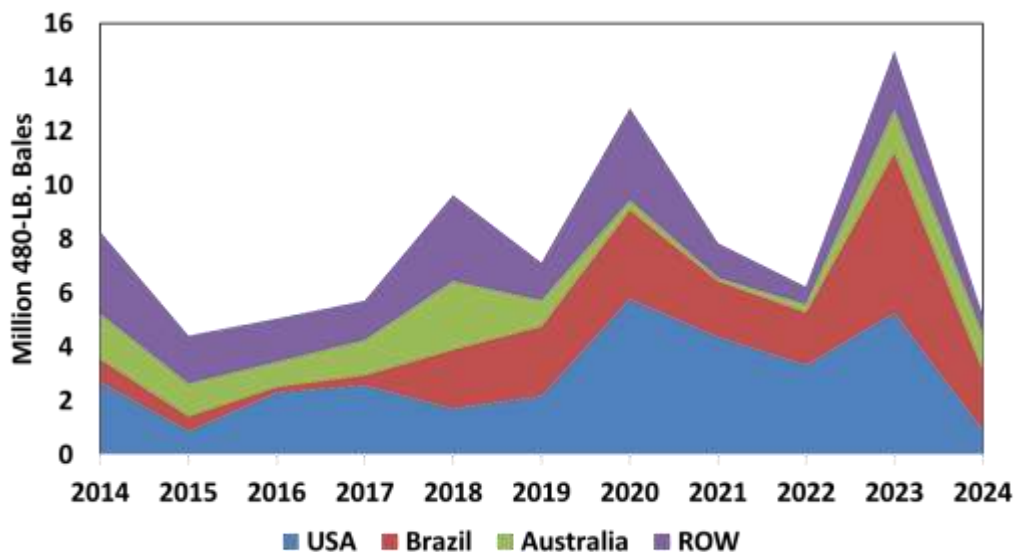
When China imposed tariffs on US cotton in retaliation for broader US tariffs on Chinese goods in 2018, US cotton became less competitive in the Chinese market. Chinese cotton importers increasingly turned to alternative suppliers, with Brazil emerging as the primary beneficiary (see Ridley and Devadoss, 2026). As a result, Brazil’s cotton exports to China grew rapidly, overtaking the US in 2019. Although US cotton exports rebounded temporarily after the Phase One trade deal in 2020, Brazilian cotton has maintained a strong foothold in the Chinese market. Trade data illustrate these dynamics.

As shown in Figure 2, US cotton exports to China fell sharply during 2018–2019, while Brazil expanded its shares. Although US cotton exports to China rebounded

after the Phase One deal, the US share of China’s cotton imports dropped from 45% in the 2017/18 marketing year to 18% in the 2018/19 marketing year, it was later able to rebound to 30% in 2019, 45% in 2020, 55% in 2021, 53% in 2022, before falling again to 35% in 2023, and 18% in 2024. At the same time, Brazil’s cotton exports to China exceeded US volumes in 2018, 2019, 2023, and 2024. Meanwhile, Chinese yarn imports from other Asian countries, especially Vietnam, surged, providing importers a way to bypass tariffs on US cotton (Muhammad, Smith, and MacDonald, 2019a,b; Muhammad, Smith, and Yu, 2021). These figures highlight China’s ability to diversify away from relying on US cotton for its textile industry.

China remains a critical market for US cotton (Figure 3). China has consistently ranked as the largest or second-largest destination for US cotton exports, often ahead of Vietnam. In 2024, China, Vietnam, Pakistan, and Turkey together accounted for 64% of total US cotton exports, with China alone receiving 30%. Since the onset of the new US administration in early 2025, and in anticipation of another round of trade tensions, China has begun shifting its sourcing of cotton away from the United States. Between January and June 2025, US cotton exports to China declined by 88% compared with the same period a year earlier (Figure 4). The 2024/25 marketing year was one of only two out of the last 17 marketing years with less than 1 million bales of total commitments of US cotton exports to China, resulting in a 17-year low for US cotton export total commitments to China (Robinson, 2025). Much of the resulting market share was redirected to other major importers, with Vietnam increasing imports of US cotton by 124%,

Figure 2. China Cotton Imports by Source



Source: Data from Trade Data Monitor, China Customs.

Turkey by 85%, Pakistan by 35%, and India by 109%. The observed decline in 2025 US cotton exports to China is much larger than that predicted by early modeling efforts (Liu and Hudson, 2025).¹

The long-term effect of US cotton has been intensified competition with Brazil, whose lower costs, and higher yields allowed it to expand profitably while US producers face rising costs and declining profitability. While some US exports were redirected to markets such as Vietnam, Bangladesh, and Turkey, the loss of China has been difficult to offset. With Brazil now firmly positioned as China's primary cotton supplier, the US cotton industry faces greater difficulty regaining market share and must adapt by reducing per unit production costs, adopting new and productive technologies, and expanding into new markets to sustain its role in global cotton trade (Liu, 2024b).

Global Trends in Textile and Clothing Imports and Exports

The United States, the world's largest importer of textiles and clothing, accounted for roughly 15% of global imports from 2017 to 2022. Along with Germany, Japan, the United Kingdom, and China, it makes up an average of 34% of global demand during the same period. China remains the top exporter, averaging 31% of the global textile and clothing exports from 2017 to 2022, followed by Bangladesh, Vietnam, Turkey, and India. However, US-China trade tensions have shifted the global textiles

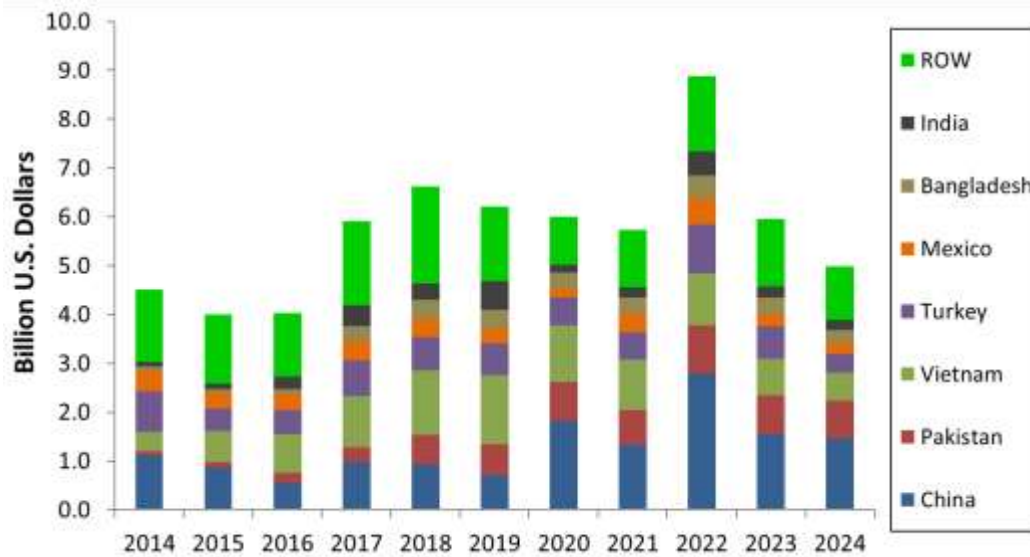
and clothing supply chain, boosting exports from Vietnam, Bangladesh, and Turkey, whose exports grew at annual rates of 7%, 8%, and 5%, respectively, from 2017 to 2022. Meanwhile, the global export value grew at 3% and China grew at 1%.

US cotton textiles and apparel imports are highly concentrated, with seven countries supplying an average of 69% of total imports from 2017 to 2022 (Figure 5). From 2017 to 2022, the total value of US textile and clothing imports increased at an annual rate of 4%. However, since the onset of the US-China trade dispute, both the market share and total value of Chinese textile and apparel exports to the United States have been in decline. Specifically, China's market share for the US market dropped from 36% in 2017 to 26% in 2022, with an average annual decline of 1% in total value.

This reduction in China's market share has been largely driven by US tariffs on Chinese textiles and apparel and by the Uyghur Forced Labor Prevention Act, which restricts the US import of textile and apparel products containing Xinjiang cotton. As a result, the United States has actively diversified its supply sources to reduce dependence on Chinese imports by sourcing from other countries, including Bangladesh, Pakistan, Vietnam, Mexico, and India. Mexico also capitalized on this opportunity, significantly increasing its textile and clothing exports to the US. At the peak in 2021, US imports of Mexican textiles and clothing reached \$7.7 billion, \$2.3 billion higher than in 2017.

¹ Additional modeling efforts are limited by the continuous shifts in U.S. trade policies.

Figure 3. Top 7 Customers of US Cotton Exports



Source: Data from USDA-FAS Global Agricultural Trade System: Cotton, Linters & Waste.

With the imposition of an additional 30% tariff on Chinese textiles and apparel, including a 20% fentanyl-related surcharge and a 10% reciprocal tariff, the United States has further weakened China's role in supplying its textile and apparel market. These tariffs imposed by the United States resulted in a nearly 20% year-on-year decline in Chinese textile and apparel exports to the US for the month of May 2026, while exports to the European Union surged by 19.6% year-on-year, and exports to Japan, South Korea, Saudi Arabia, Nigeria, and other markets also experienced varying levels of growth (China Textile Leader, 2025). The imposition of US tariffs on Chinese textiles has also created a ripple effect extending beyond finished goods trade to the upstream cotton market. Specifically, higher tariffs have reduced the competitiveness of Chinese textile exports in the US market, leading to weaker production incentives for Chinese manufacturers. As a result, demand for imported cotton has also declined.

The Impact of the US–China Trade Dispute on Global Textiles and Cotton Markets

The global cotton supply chain faces another round of uncertainty as reciprocal tariffs extend to other major textile-producing countries, including Vietnam, Bangladesh, Indonesia, India, and Pakistan, in addition to China. This creates both challenges and potential opportunities for certain nations. Although manufacturing is strategically important for national security, reviving the US textile and apparel industry is unlikely given its labor-intensity, together with high labor costs, stringent environmental regulations, and the erosion of the

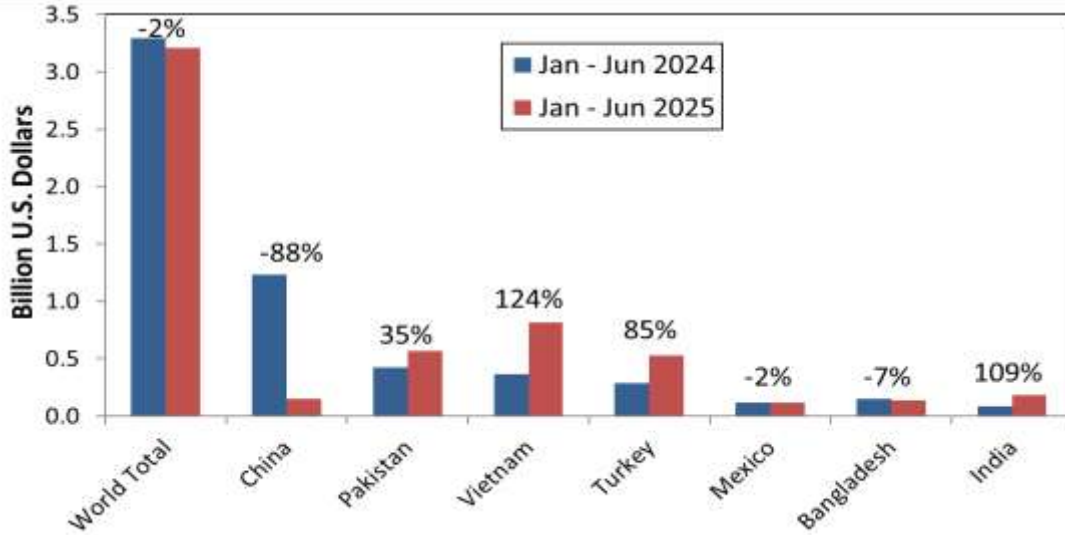
industry-skilled US workforce. Moreover, the US cotton futures market has maintained its global-price setting trends despite the trade disputes and a pandemic (Kalli et al., 2026).

Recent bilateral discussions between the United States and Mexico are also an opportunity for Mexico to further consolidate its role within a north–south integrated textile supply chain. Leveraging its geographic proximity, lower labor costs, and strong economic ties with the US, Mexico is well positioned to potentially serve as a hub for its textile and apparel industries. Beyond North America, South Asian countries—including Vietnam, Bangladesh, Indonesia, India, and Pakistan—have large, vertically integrated textile and apparel industries and have steadily increased their role in the cotton and textile trade since the first round of the trade war between the US and China. In addition, the Dominican Republic–Central America Free Trade Agreement (CAFTA-DR)—which has been in effect since 2006 and includes Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and the United States—has significantly shaped US textile and apparel trade flows (Lu, 2023). Furthermore, the Buying American Cotton Act, currently under consideration for legislation, has the potential to add value to US cotton once enacted. The legislation could strengthen the domestic textile industry and promote trade within the Western Hemisphere.

What Is Next?

The renewed US–China trade tensions in 2025 have once again underscored the vulnerability of the American cotton industry to geopolitical risks. With China

Figure 4. US Cotton Exports by Destination from January to June 2025 Compared to the Same Period in 2024



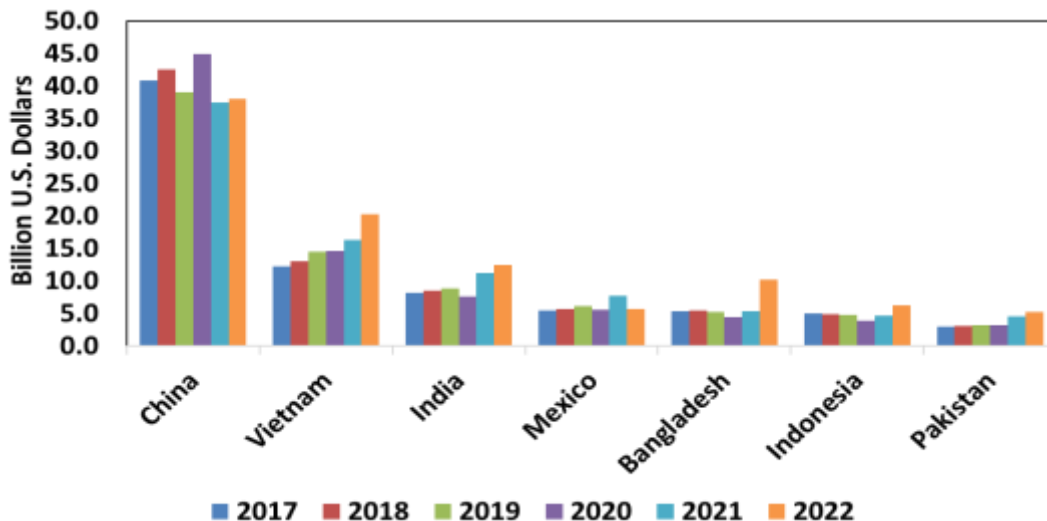
Source: Data from USDA-FAS Global Agricultural Trade System: Cotton, Linters & Waste.

reducing its reliance on US cotton and diversifying its imports toward Brazil and other suppliers, the United States must recognize that rebuilding China as a primary export destination is increasingly unlikely in the short term due to the stickiness of business relations and investments. Instead, US cotton policy should shift toward diversification and regional integration strategies that enhance resilience and mitigate exposure to disruptions in a single market.

Mexico, South Asian, CAFTA-DR countries, and other emerging markets offer realistic opportunities for market expansion and supply chain diversification. A forward-

looking cotton trade strategy will be essential for sustaining US cotton's role in the global economy. Such a strategy should be grounded in diversification, innovation, and regional cooperation. This approach can help safeguard the US cotton industry from recurring trade disruptions. It can also contribute to building a more resilient and integrated textile and apparel supply chain. By gaining a more in-depth understanding of the effects of tariffs, the US cotton industry and the global cotton industry can implement strategies to mitigate the potential impacts of proposed tariffs on cotton and cotton-related products.

Figure 5. Leading Suppliers of US Cotton Textile and Apparel Imports. Data from the World Bank, World Integrated Trade Solution



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The US Beef Industry in a Time of Trade Tensions

Andrew Muhammad, Charles Martinez, and Parker Wyatt

JEL Classifications:

Keywords: Beef, Brazil, China, Tariffs, Trade war, United States

DOI: 10.22004/ag.econ.371493

Since his inauguration in January 2025, President Trump has systematically raised tariffs on imports from nearly all major trading partners. These measures have been enacted under authorities such as the International Emergency Economic Powers Act and Section 232 of the Trade Expansion Act (Burkhart and Hammond, 2025). Tariffs can reduce trade, investment, and output by increasing costs and disrupting supply chains, often leading to long-term inefficiencies. Trade policy uncertainty further amplifies these effects by discouraging business investment and slowing economic decision-making—even in the absence of new tariffs (Luckstead and Devadoss, 2025). For the US beef sector, already grappling with supply constraints and global competition, these trade actions have added pressure to an already strained industry.

The beef sector remains a cornerstone of American agriculture, having undergone notable transformations over the past decade. Both imports and exports play a crucial role in shaping the US beef industry and agricultural trade overall. Although imports account for only 17% of US beef consumption and exports represent 10% of domestic production (USDA-FAS, 2025a), beef consistently ranks among the top 10 agricultural imports and top 5 agricultural exports in the United States (USDA-FAS, 2025b).

Figure 1 shows US beef consumption and trade from 2010 to 2024. Consumption has remained relatively stable, with modest growth, from around 26 billion pounds in 2010–2012 to almost 29 billion pounds in 2024. During this period, imports have grown significantly, rising from about 2.3 billion pounds to 4.6 billion pounds, with the fastest growth occurring in the last few years. Exports also increased overall but at a slower pace, peaking around 2018 before slightly declining. The widening gap between imports and exports in recent years suggests increasing reliance on foreign countries for US demand. It is important to note, however, that most beef imports are different from exports. The US usually imports leaner and lower-cost

cuts used for ground beef production, while exports are mostly high-value, grain-fed cuts like steaks and ribs that appeal to premium markets abroad (Brower, 2022).

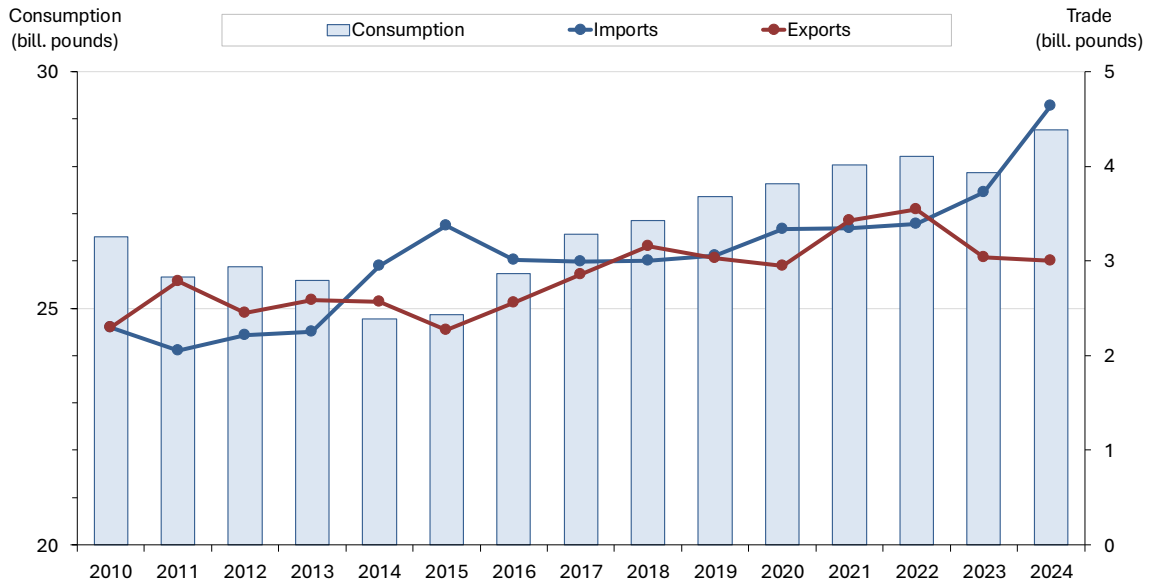
In this article, we examine recent trends in US beef production and trade, highlighting how the sector has adapted to shifting global consumption patterns and domestic supply constraints. We also assess the impact of recent tariffs and trade tensions on US beef imports from key suppliers such as Canada, Mexico, and Brazil. While these policies are often framed as protective measures for American producers, they may inadvertently raise costs for processors and consumers. On the export side, we explore the effects of current trade tensions and how major beef-producing countries like Brazil have expanded their global market share, outcompeting US beef in key international markets.

This article provides a comprehensive overview of how trade tensions, international competition, and shifting supply and demand have collectively influenced the structure and performance of the US beef industry in recent years. Understanding these shifts is essential not only for policymakers and industry stakeholders but also for consumers, whose choices and costs are increasingly shaped by international trade.

Shrinking Herds and Rising Prices

Understanding the current state of US cattle inventory and beef production is essential to evaluating trade dynamics, as domestic supply levels directly influence imports, exports, and prices. The US cattle herd has continued to shrink, marking sixth straight years of decline. According to the USDA January 2025 cattle report (USDA-NASS, 2025), the total number of cattle and calves dropped by about 1% from the previous year, bringing the herd inventory to its lowest level since 1952. This ongoing reduction is part of a broader cattle cycle that began in 2014 and has now lasted 11 years, resulting in the third-longest decline in US history.

Figure 1. US Beef Consumption and Trade, 2010–2024



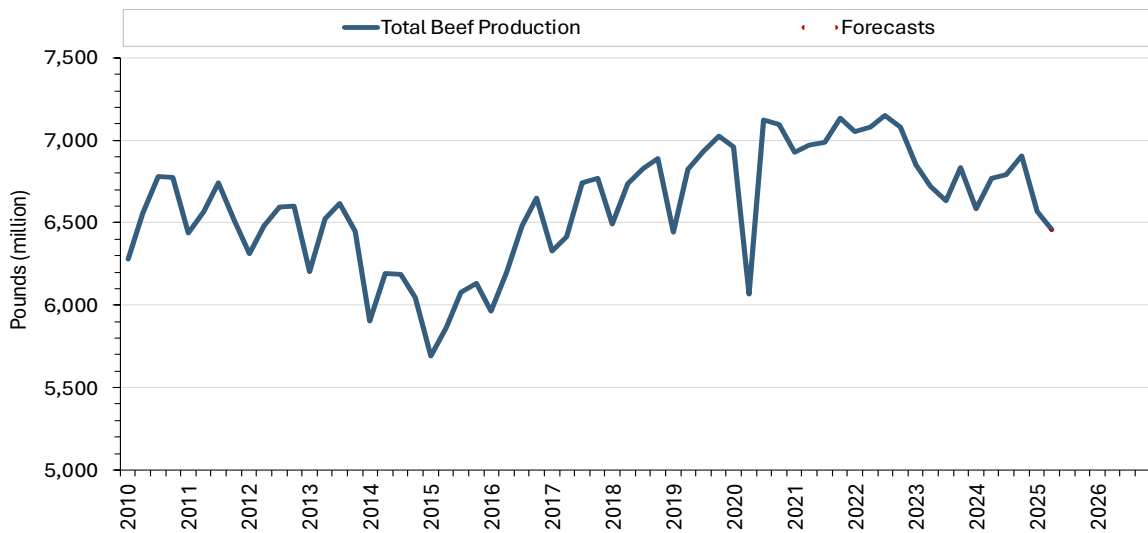
Source: USDA-FAS (2025a).

As expected, lower cattle inventories translate directly into reduced beef production. Figure 2 shows quarterly US beef production from the first quarter of 2010 through the second quarter of 2025, with forecasts extending through the third quarter of 2026 (LMIC, 2025; USDA-AMS, 2025). Production peaked in the third quarter of 2022 at 7.1 billion pounds and has since trended downward. Over the past 15 years, the average quarterly production has been approximately 6.5 billion pounds. The most recent data from the second quarter

of 2025 show production at less than 6.4 billion pounds, slightly below the long-term average.

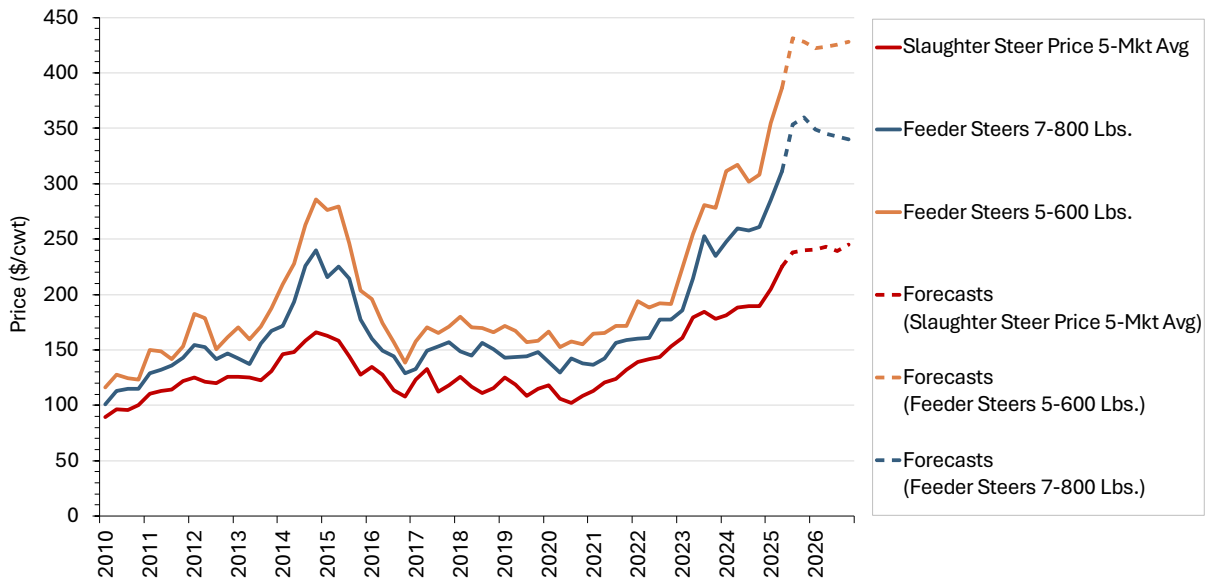
Forecasts for 2025 and 2026 suggest continued declines in production due to two key factors: heifer retention and overall herd reduction. Both contribute to fewer cattle available for slaughter, reinforcing the downward trend in beef supply. These production levels are not surprising given the persistent liquidation of the cattle herd and the structural constraints facing producers (Figure 2).

Figure 2. US Beef Production and Forecasts, 2010:Q1–2026:Q3



Source: USDA-AMS (2025), LMIC (2025).

Figure 3. US Feeder and Slaughter Steer Prices and Forecasts, 2010:Q1–2025:Q3



Source: USDA-AMS (2025), LMIC (2025).

Reduced production has led to noticeable price increases at the retail level. During the first half of 2025, the average price for all fresh beef rose from \$8.15 per pound in January to \$8.90 per pound in July (USDA-ERS, 2025). Ground beef, a highly consumed product, increased from \$5.50 to \$6.25 per pound over the same period. These price movements reflect tightening supply and signal broader inflationary pressures within the beef supply chain.

Historically, the US beef industry has relied on the live cattle trade to supplement domestic supply. Imports of feeder calves from Mexico and Canada help offset tight cattle inventories but have faced recent disruptions. In November 2024, the Animal and Plant Health Inspection Service announced restrictions on livestock imports from Mexico due to an outbreak of New World screwworm (NWS) in Mexico’s southern region. Feeder cattle typically enter the United States in the spring and fall and account for roughly 5% of total placements annually (Anderson, Maples, and Martinez, 2024). In southern states, that figure rises to approximately 18% (Anderson, 2025).

The November ban resulted in the loss of one month of feeder cattle imports in 2024 and two months in early 2025. Although the border reopened briefly in March, imports were suspended again in May due to rising NWS cases. As of this writing, the ban remains in effect, effectively nullifying a key source of supply for the US beef industry. Live cattle imports from Canada also declined, albeit slightly, in 2025 (USDA, 2025; USDA-FAS, 2025b).

The shortage of domestic and imported feeder cattle has driven prices to record highs. Figure 3 shows quarterly prices for feeder and slaughter steers from the first quarter of 2010 through the second quarter of 2025, with projections through the third quarter of 2026. Steer prices (500–600 lb) rose from around \$116 per hundredweight in the first quarter of 2010 to almost \$286 in 2014, driven by drought and tight supply. That year also marked the beginning of the current cattle cycle.

Improved prices during the early years of the cycle led to herd expansion, followed by a correction and price declines from 2017 to 2020. Since then, prices have rebounded sharply. In the second quarter of 2025, 500–600 lb steers reached a record \$386.73 per hundredweight—a 179% increase over 9 years. Similar trends are observed for 700–800 lb steers and slaughter cattle (Figure 3).

With record-high beef prices and higher costs for replacement cattle, producers are likely to continue liquidating herds rather than rebuilding. This trend is expected to sustain high cattle prices in the near term. Ultimately, factors such as weather conditions, feed costs, and consumer willingness to pay for beef will determine when herd expansion resumes.

Trade Tensions and US Beef Imports

Next, we examine US beef import trends to determine whether recent trade tensions have influenced imports. In 2024, the United States was the second-largest beef-importing country in the world (United Nations, 2025). Beef imports supplement the domestic supply, especially during periods of low cattle inventory or shortages,

Table 1. US Fresh and Chilled and Frozen Beef Imports: 2024 and 2025 Year-to-Date (January–July) Comparison

Source	Fresh and Chilled			Source	Frozen		
	Jan.–July 2024	Jan.–July 2025	%Δ		Jan.–July 2024	Jan.–July 2025	%Δ
	Value (\$ billions)				Value (\$ billions)		
World (total)	3.21	3.62	12.6	World (total)	2.45	4.05	65.5
Canada	1.36	1.41	3.9	Australia	0.74	1.20	62.6
Mexico	0.96	1.07	11.0	Brazil	0.42	0.89	112.3
Australia	0.56	0.74	31.1	New Zealand	0.69	0.82	18.4
Quantity (000 MT)			Quantity (000 MT)				
World (total)	387.56	405.14	4.5	World (total)	439.18	655.11	49.2
Canada	183.54	174.34	-5.0	Australia	126.32	178.51	41.3
Mexico	114.60	124.60	8.7	Brazil	86.51	177.50	105.2
Australia	50.08	61.56	22.9	New Zealand	121.61	123.09	1.2
Unit Value/Price (\$/kg)			Unit Value/Price (\$/kg)				
World (total)	8.29	8.93	7.7	World (total)	5.58	6.19	10.9
Canada	7.41	8.10	9.4	Australia	5.83	6.71	15.1
Mexico	8.38	8.55	2.1	Brazil	4.84	5.00	3.4
Australia	11.25	12.00	6.6	New Zealand	5.71	6.67	17.0

Note: Fresh and chilled beef is defined according to HS 0201: meat of bovine animals, fresh or chilled; frozen beef is defined according to HS 0202: meat of bovine animals, frozen.
Source: USDA-FAS (2025b).

ensuring consistent availability for consumers (Calil, 2024). Imports of lean beef trimmings are essential for producing ground beef, while feeder cattle from Mexico and Canada support feedlot operations (Brower, 2022; USDA-FAS, 2025b). Imports also help stabilize prices and buffer market disruptions such as droughts and disease outbreaks. While almost all live cattle imports are from Canada and Mexico, beef imports are more diversified (USDA-FAS, 2025b).

Table 1 presents a year-to-date comparison of US imports of fresh and chilled and frozen beef from January to July in 2024 and 2025, detailing changes in import value, quantity, and unit value (price) across major trading partners. Despite recent trade tensions, US beef imports experienced significant growth in 2025, with both fresh and chilled and frozen beef increasing in value and volume. Fresh and chilled beef imports rose by 12.6% in value and 4.5% in quantity, driven by moderate gains from Mexico and Australia. Canada remained the largest supplier in this category, though its volume slightly declined. In contrast, frozen beef imports surged by 65.5% in value and 49.2% in volume, with Brazil and Australia showing the most significant increases. Brazil’s frozen beef exports to the US more than doubled in both value and volume, reflecting its growing competitiveness in the global market.

Prices—as measured by unit values—also increased for most sources, suggesting rising demand and possible supply constraints. For example, frozen beef from New

Zealand saw a 17% increase in price, while fresh and chilled beef from Canada rose by 9.4%.

The sharp rise in frozen beef imports from countries like Brazil reflects both a response to domestic supply challenges and a shift toward more competitive international suppliers. However, recent trade tensions may begin to dampen this trend. Earlier in 2025, Mexico and Canada faced tariffs of 25% and 35%, respectively, largely due to concerns over border security and drug trafficking. Australia, New Zealand, and Brazil were impacted by the “Liberation Day” tariffs, which began at approximately 10%, while Brazil was hit with an additional 40% tariff due to the prosecution of former President Bolsonaro. Imports from Canada and Mexico may be exempt under USMCA origin provisions, and tariffs on Australia, New Zealand, and Brazil had not yet been implemented at the time of this article (Burkhart and Hammond, 2025). However, we are starting to see the impact of these policies take effect. For instance, frozen beef imports from Brazil and New Zealand in July 2025 were down 25% and 14%, respectively, compared to July 2024 (USDA-FAS, 2025b). This decline suggests that tariffs and resulting trade tensions are starting to impact beef imports.

Recent Trends in US Beef Exports

The United States is one of the largest beef-exporting countries in the world, ranked third in value behind Brazil and Australia in 2024 (United Nations, 2025). While

Table 2. US Fresh and Chilled and Frozen Beef Exports: 2024 and 2025 Year-to-Date (January–July) Comparison

Destination	Fresh and Chilled			Destination	Frozen		
	Jan.–July	Jan.–July	%Δ		Jan.–July	Jan.–July	%Δ
	2024	2025			2024	2025	
Value (\$ billions)				Value (\$ billions)			
World (total)	2.61	2.37	-9.1	World (total)	2.70	2.55	-5.4
South Korea	0.54	0.53	-1.5	South Korea	0.68	0.82	20.6
Mexico	0.52	0.52	-1.1	Japan	0.32	0.40	24.8
Japan	0.54	0.43	-20.1	China	0.70	0.38	-46.0
Canada	0.40	0.36	-9.6				
Quantity (000 MT)				Quantity (000 MT)			
World (total)	231.00	199.59	-13.6	World (total)	331.67	316.81	-4.5
South Korea	39.88	40.32	1.1	South Korea	87.36	101.12	15.8
Mexico	53.80	47.13	-12.4	Japan	62.17	74.11	19.2
Japan	60.39	47.07	-22.1	China	79.12	43.94	-44.5
Canada	36.35	31.66	-12.9				
Unit Value/Price (\$/kg)				Unit Value/Price (\$/kg)			
World (total)	11.29	11.88	5.2	World (total)	8.13	8.05	-0.9
South Korea	13.56	13.22	-2.5	South Korea	7.83	8.16	4.2
Mexico	9.74	11.00	12.9	Japan	5.20	5.44	4.7
Japan	8.89	9.12	2.5	China	8.82	8.58	-2.7
Canada	10.90	11.32	3.8				

Note: Fresh and chilled beef is defined according to HS 0201: meat of bovine animals, fresh or chilled; frozen beef is defined according to HS 0202: meat of bovine animals, frozen.

Source: USDA-FAS (2025b).

export values are comparable across the three countries—\$9.1 billion in fresh, chilled, and frozen beef exports for the United States versus \$11.7 billion for Brazil and \$9.3 billion for Australia—both Brazil and Australia export significantly more than the United States in terms of quantity. This was due to US beef prices (\$9.48/kg) being significantly higher than Brazil (\$4.58/kg) and Australia (\$6.52/kg) (United Nations, 2025). US beef is grain-finished and is considered higher value in global markets, whereas beef from countries such as Australia, New Zealand, and Brazil is mostly grass-finished, which can reduce quality and consumer appeal (Melton et al., 1982).

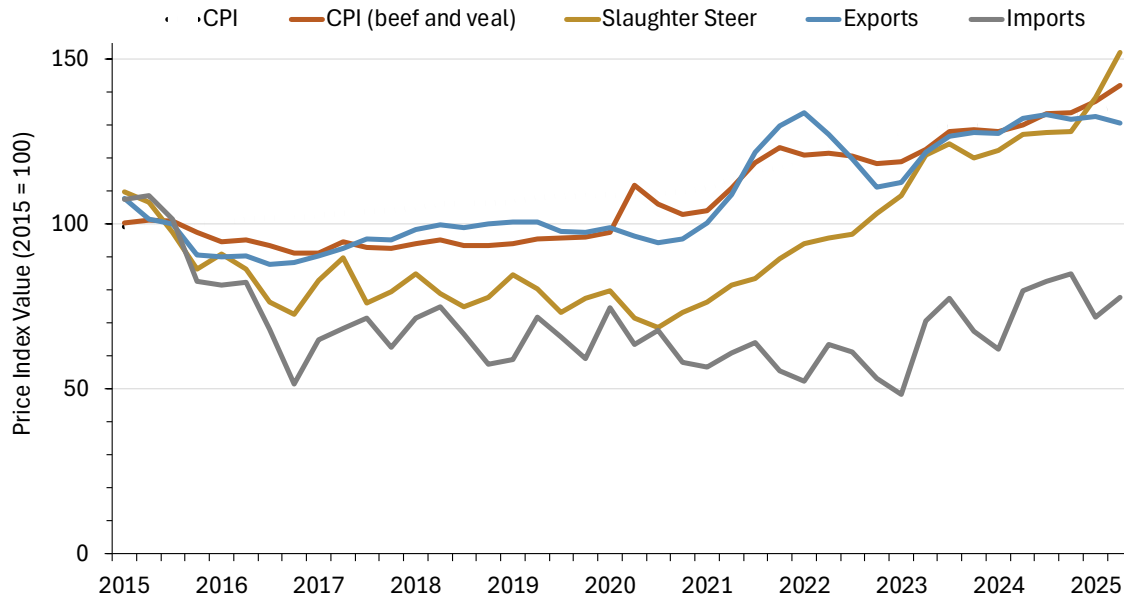
Unlike US beef imports, export trends have been more negative in 2025, particularly for fresh and chilled beef and frozen beef exports to China. This may be the result of rising global competition and shifting consumer preferences, but it could also be due to US trade policies, which have introduced uncertainty and increased costs for foreign buyers of American beef.

Table 2 presents a year-to-date comparison of US exports of fresh and chilled, and frozen beef from January to July in 2024 and 2025, detailing changes in import value, quantity, and unit value (price) across major destination countries. US beef exports declined in early 2025, with both fresh and chilled and frozen categories showing year-to-date decreases in value and

volume compared to the same period in 2024. Fresh and chilled beef exports fell by 9.1% in value and 13.6% in volume, with notable declines to Japan (–20.1% in value; –22.1% in volume) and Canada (–9.6% in value; –12.9% in volume). Frozen beef exports dropped 5.4% in value, driven largely by a sharp 46% decline in exports to China. However, some markets showed growth in value in 2025: South Korea increased its frozen beef imports by 20.6%, and Japan by 24.8%. Export prices, on the other hand, have been relatively stable compared to import prices.

The significant decline in frozen beef exports to China warrants further discussion. In response to US tariffs, China imposed retaliatory tariffs exceeding 100% earlier this year. Although those tariffs have since been reduced to around 33% (Bown, 2025), the ongoing trade tensions appear to have negatively impact US beef in the Chinese market. In addition, in March 2025, the Chinese government allowed export registrations for nearly 400 beef processing facilities to expire, effectively revoking market access for about 60% of all US facilities authorized to export to China (Marianetti, 2025). According to China customs data, total beef imports from January to July rose by 5.1% compared to the same period last year. Notably, imports from Brazil increased by 19.1%, while imports from the United States declined over the same period (Trade Data Monitor, 2025).

Figure 4. Selected Beef and Cattle Price Indexes and CPI, 2015:Q1–2025:Q2



Source: CPI, both all goods and beef and veal, Bureau of Labor Statistics; Slaughter Steer, USDA Agricultural Marketing Service; Exports and Imports, USDA, Foreign Agricultural Service.

Price Comparisons and Inflation

In this final section, we compare import and export prices, domestic beef prices, and cattle prices to overall inflation. This is important for understanding how trade dynamics and broader economic pressures are influencing costs throughout the beef supply chain. Price indexes from 2015–2025 are reported in Figure 4. Early in the period, retail beef prices (beef and veal CPI) and export prices closely tracked overall inflation (CPI), while slaughter steer prices fell below the inflation rate. Import price indexes also dipped during these years. By 2018–2019, retail beef prices stabilized near CPI, but export prices lagged slightly. The pandemic years (2020–2021) brought sharp disruptions: Retail beef prices climbed above CPI, and export prices rose even faster, driven by strong foreign demand and supply chain constraints. Notably, the most significant increase was observed in steer prices post-pandemic. In contrast, import prices remained relatively flat. From 2022 onward, consumer, export, and steer prices all outpaced CPI, reflecting persistent inflationary pressures and tightening supply in the industry.

Closing Remarks

In this article, we examined the evolving dynamics of the US beef trade, focusing on how domestic production trends, global competition, and trade policy have collectively shaped market outcomes. Recent shifts reflect broader changes in global supply and demand, the emergence of competing exporters, and trade policies dating back to President Trump’s first term. The US beef industry continues to face significant challenges, including declining cattle inventories, rising production costs, and shifting trade relationships. Imports have played a vital role in stabilizing domestic supply amid record-high prices and supply chain disruptions. However, recent trade tensions and disease-related restrictions have complicated access to key sources of imported beef, raising concerns about long-term resilience. Retaliatory tariffs and evolving trade partnerships have redirected global beef flows, with countries like China seeking alternative markets to the United States.

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Acknowledgements: We thank the editor Zhengfei Guan, guest editor Stephen Devadoss, and an anonymous reviewer for their comments and insightful suggestions, which greatly improved the quality and clarity of this paper.

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Trade and Supply Chain Impacts of Tariffs on Fresh Vegetable Imports from Mexico

Xi He, Shin Myat Naing Naing, and Stephen Devadoss

JEL Classifications: F10; F13; F14

Keywords: Fresh vegetable supply chain, Mexico, Tariffs, US vegetable imports

DOI: 10.22004/ag.econ.371494

The United States is the world's largest agricultural exporter and has enjoyed substantial agricultural trade surpluses for decades, reaching a record of about \$40 billion in 2011. However, this landscape shifted dramatically over the last decade, with the United States recording its first deficit (−\$1.3 billion) since USDA records began in 1967. The deficit then climbed to \$37 billion in 2024, and in just the first half of 2025 reached \$28.6 billion, putting it on track to hit \$55–\$60 billion for the year (USDA-FAS, 2025). This unprecedented shift is partially driven by rising imports of vegetables, which have grown rapidly from \$2.1 billion in 2000 to \$13.3 billion in 2024 (Figure 1).

Amid this widening US agricultural trade deficit and growing fresh vegetable imports, recent trade measures have introduced renewed uncertainty into North American agricultural markets. Mexico, the United States' largest agricultural trading partner and principal supplier of fresh vegetables (Naing, Devadoss, and He, 2025), plays a central role in this context. Table 1 summarizes key US trade policy developments during 2025 that affected fresh vegetable imports from Mexico and Canada. The year began with the February issuance of Executive Order 14194, which authorized a 25% tariff on most Mexican and Canadian imports (Executive Office of the President, 2025a). In early March, the administration amended the order to exempt United States–Mexico–Canada Agreement (USMCA)-compliant products, temporarily easing tensions for a large share of agricultural and perishable goods (US Customs and Border Protection, 2025).

At the same time, the long-standing tomato trade dispute between the United States and Mexico reemerged in mid-2025. The US Department of Commerce announced in April its intent to withdraw from the 2019 Tomato Suspension Agreement (TSA) and formally terminated the agreement in July, reinstating a 17.09% antidumping duty on fresh tomato imports from Mexico (US

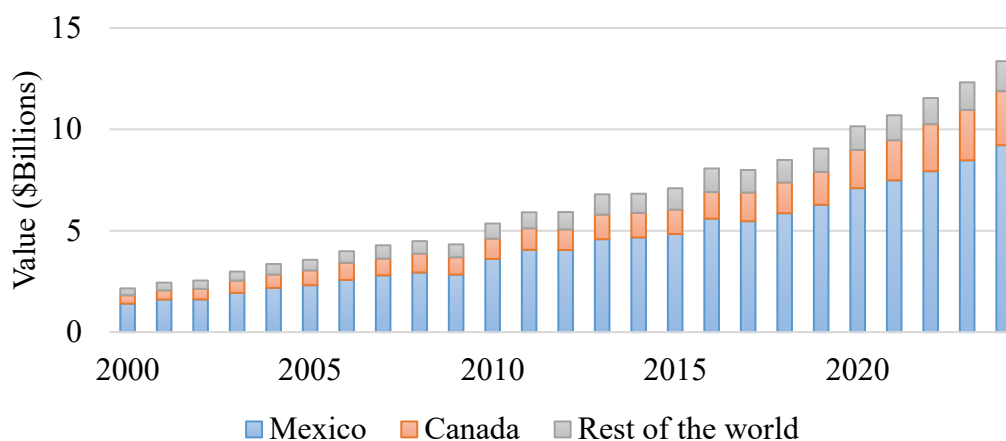
Department of Commerce, 2025a,b). This action renewed the dispute in the decades-long pattern of US–Mexico negotiations over tomato trade fairness and market access, reflecting the broader uncertainty now surrounding US fresh vegetable trade.

In light of rising concerns among US vegetable producers about import competition, growing political pressure for stricter trade enforcement, and the approaching 2026 USMCA review (Office of United States Trade Representative, 2025c), policy debates have intensified over how to balance consumer affordability, domestic farm viability, and regional market integration. In this context, we review the patterns of US fresh vegetable imports, assess the effects of a hypothetical 25% tariff on US fresh vegetable trade, and discuss the broader implications of trade policies on prices and employment along the US fresh vegetable supply chain.

US Fresh Vegetable Imports

Figure 2 illustrates the distribution of US fresh vegetable imports by source country in 2024. Mexico accounted for 69% of US fresh vegetable imports in 2024, followed by Canada at 20%, while all other countries contributed marginally. This dominance underscores both the depth of North American supply-chain integration and the limited diversification of US import sources. Such concentration increases vulnerability to supply disruptions and trade policy shocks—such as the recent withdrawal from the TSA and the imposition of tariffs on Mexican tomatoes. Canada's secondary but stable role reflects its proximity and integration under the USMCA, while smaller suppliers such as Peru, Guatemala, and China occupy niche positions in specific product categories.

Figure 1. US Fresh Vegetable Import Value, 2000–2024



Note: This figure shows US fresh vegetable imports from Mexico, Canada, and the rest of the world from 2000 to 2024. Source: USDA-FAS (2025).

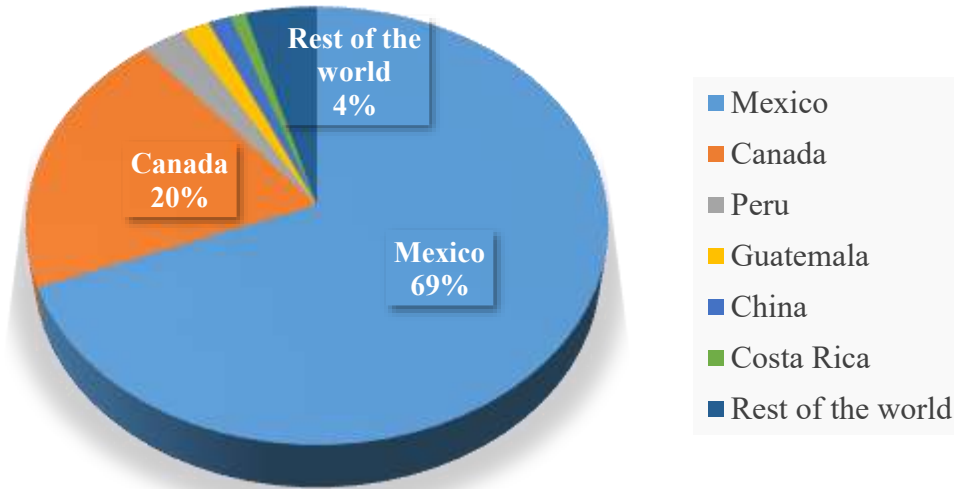
Figure 3 further illustrates how Mexico's share has expanded from roughly 65% in 2000 to nearly 69% in 2024, reinforcing its position as the overwhelmingly dominant supplier to the US market. Canada's share has remained relatively stable at about 20%, while imports from emerging Latin American suppliers have grown modestly but still represent small fractions of total imports. The declining share of the "rest of the world" category underscores the continued geographic concentration of US fresh vegetable imports within North America, particularly under the USMCA framework.

Several factors have driven the United States' growing dependence on fresh vegetable imports from Mexico. Geographic proximity, favorable climate, and complementary agroecological conditions give Mexico a strong logistical advantage, enabling the reliable and cost-effective supply of perishable products such as vegetables (Huang, Guan, and Hammami, 2022). In addition, trade liberalization under the USMCA has expanded market access for Mexican produce, while continued government support—through infrastructure investment, agricultural policy, and producer financing—has further enhanced Mexico's export capacity (Khanal, Poudel, and Gopinath, 2024).

Table 1. Major US Trade Policy Actions Relevant to Fresh Vegetable Imports from Mexico and Canada, 2025

Date	Event / Action	Relevance	Source
Feb-1-25	Executive Order 14194 issued – <i>Imposing Duties to Address the Situation at the Southern Border</i>	Authorizes a 25 % tariff on imports from Mexico effective 4 Mar 2025	Executive Office of the President (2025)
Mar-2-25	Amendment to Executive Order 14194	Exempts USMCA-compliant goods from the additional duty	White House (2025)
Mar-4-25	Tariffs take effect	25% tariff applied to Mexican and Canadian imports (including produce unless exempted)	US Customs and Border Protection (2025)
Apr-14-25	Commerce announces intent to withdraw tomato suspension agreement	Provides a 90-day notice before termination of the 2019 agreement	US Department of Commerce (2025a)
Jul-14-25	Commerce withdraws from the 2019 Tomato Suspension Agreement	Reinstates a 17.09 % antidumping duty on fresh tomato imports from Mexico	US Department of Commerce (2025b)

Figure 2. Share of US Fresh Vegetable Imports from Major Suppliers in 2024

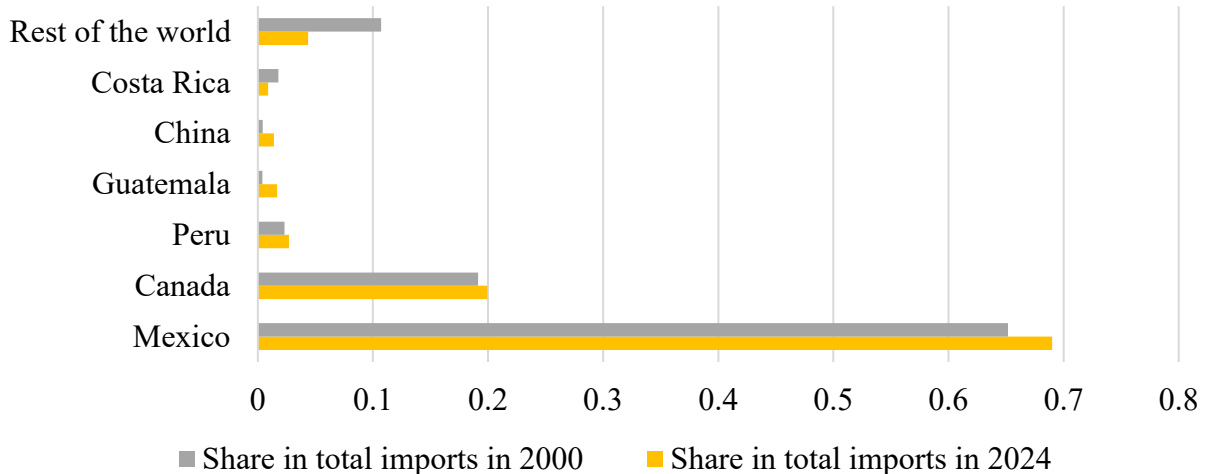


Source: USDA-FAS (2025).

Mexican vegetable imports have also increasingly shifted from complementing to competing with US production. Once primarily serving to fill seasonal gaps, these imports now frequently overlap with domestic harvest periods, particularly in labor-intensive crops such as asparagus and bell peppers. Khanal, Poudel, and Gopinath (2024) document sharp increases in imports during both the January–June and July–December harvest windows, directly coinciding with peak production in major producing states such as Florida, Georgia, and California. This growing temporal overlap has intensified competition in US markets, placing downward pressure on domestic prices and farm revenues.

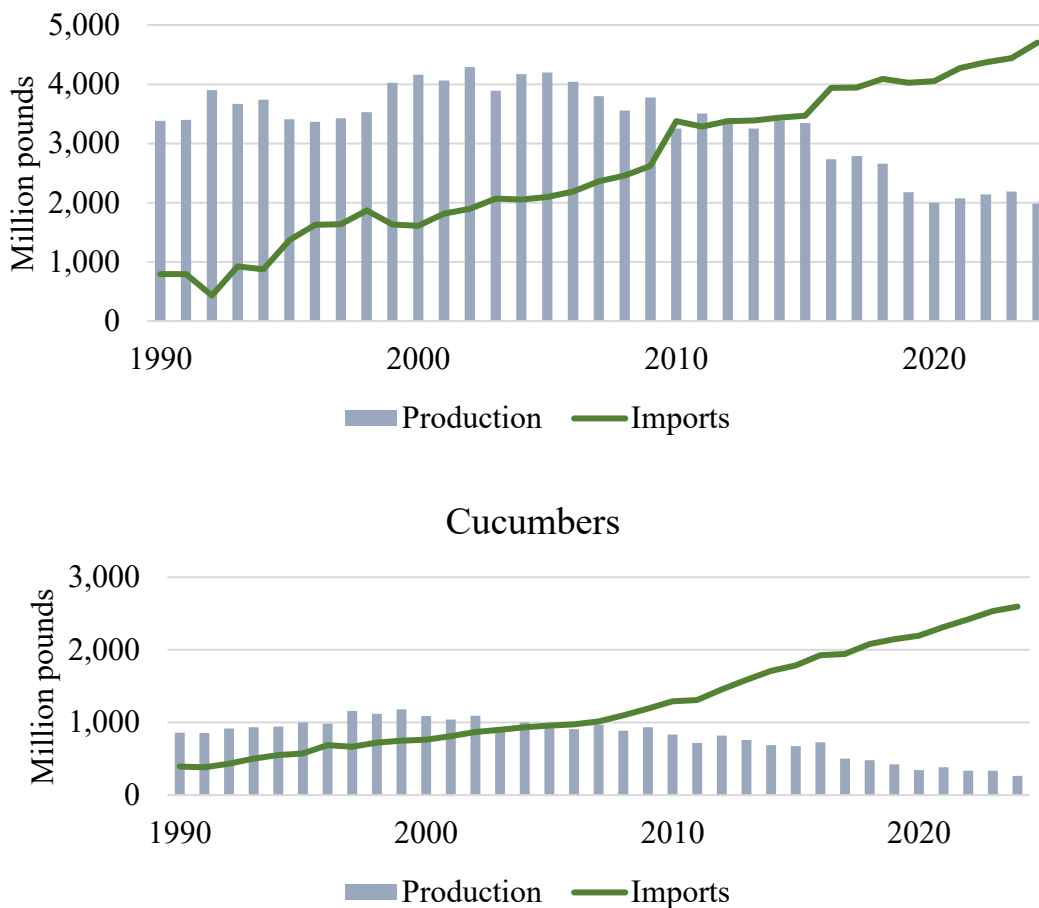
These competitive pressures have emerged alongside a broader decline in US vegetable production and a rising share of imports in total supply. In 2024, imports accounted for 36.3% of the US vegetable supply, up from 9.7% in 1990 (USDA-ERS, 2025). The magnitude of this shift varies by crop: Tomatoes, cucumbers, squash, and berries have faced the most pronounced import competition. For instance, in 1990, US tomato production was three times higher than imports, whereas by 2024, imports had doubled domestic output (Figure 4). Similarly, cucumber imports increased from roughly half of domestic production in 1990 to seven times that level in 2024.

Figure 3. Shifts in US Fresh Vegetable Import Shares by Origin, 2000 vs. 2024



Source: USDA-FAS (2025).

Figure 4. US Production and Imports of Fresh Tomatoes and Cucumbers, 1990–2024



Source: USDA-ERS (2025).

Potential Effects of a Hypothetical 25% Tariff on US Fresh Vegetable Imports

Growing concerns that the expansion of US fresh vegetable imports threatens the long-term viability of domestic production have heightened policy attention to the structure and resilience of the fresh produce sector. These concerns are particularly salient for specialty crop growers and rural communities, where import competition has eroded market shares and margins. Although fresh vegetables traded under the USMCA framework are currently exempt from the proposed 25% US tariffs on Mexican imports (US Customs and Border Protection, 2025), the upcoming 2026 USMCA review introduces uncertainty about the future scope of tariff provisions, and recent shifts in US trade policy underscore how exemptions can change rapidly in response to political and economic pressures.

To quantify these potential impacts of tariffs, we estimate a structural gravity model that relates historical variation in tariff rates to trade flows across commodities, using monthly US import data at the 10-digit Harmonized System (HS) level from 2000 to 2023 obtained from the

USDA Global Agricultural Trade System (USDA-FAS, 2025), combined with tariff data at the 6-digit HS level from UNCTAD (UN Trade and Development, 2025).

Table 2 reports the import quantities and values for the top 15 fresh vegetables imported from Mexico in 2023, along with their simulated percentage changes under a 25% tariff scenario. Column 3 indicates that in 2023, peppers, tomatoes, and cucumbers were the top three imports by value, ranging from \$800 million to \$1.5 billion, with peppers alone exceeding \$1.53 billion. Several tomato varieties—particularly plum and cherry tomatoes—also rank among the top categories, underscoring the central role of tomatoes in the US–Mexico vegetable trade. Other major imports include asparagus, onions, lettuce, and squash, each valued between \$360 million and \$446 million.

Simulation results in columns 4 and 5 indicate that a 25% tariff would lead to substantial but uneven declines across commodities. Import quantities are projected to fall by 15%–36%, while import values decline by 20%–41%. More tariff-sensitive products—such as carrots, garlic, mushrooms, and asparagus—show sharper

Table 2. Top 15 US Fresh Vegetable Imports from Mexico in 2023 and Simulated Impacts of a Hypothetical 25% Tariff

Commodity	Rank in	Import	Import Value (\$ millions)	Change in	Change in
	Terms of Import Value	Quantity (thousand metric tons)		Import Quantity	Import Value
	1	2	3	4	5
Peppers	1	1,072.13	1,539.10	-18.0%	-23.5%
Tomatoes	2	798.43	1,448.62	-15.8%	-19.9%
Cucumbers	3	878.86	805.07	-15.9%	-20.2%
Tomatoes, plum type	4	686.55	799.06	-15.9%	-20.6%
Asparagus	5	153.77	360.21	-24.6%	-20.0%
Onions	6	462.97	378.74	-19.6%	-21.8%
Lettuce	7	325.98	446.14	-17.5%	-21.0%
Squash	8	446.09	408.26	-15.8%	-20.4%
Mushrooms	9	11.87	49.36	-25.2%	-28.2%
Broccoli	10	285.32	352.21	-15.6%	-19.9%
Garlic	11	19.83	40.08	-26.9%	-41.8%
Tomatoes, cherry	12	287.97	355.79	-15.6%	-19.9%
Beans	13	82.79	134.62	-17.8%	-19.7%
Carrots	14	159.67	81.09	-36.8%	-31.3%
Cauliflower	15	53.21	85.78	-24.1%	-26.7%
Total fresh vegetables		9,197.08	12,319.64	-17.6%	-21.3%

Note: Columns 4 and 5 report the simulated percentage changes in import quantity and value under a hypothetical 25% US tariff on Mexican fresh vegetable imports, estimated using a structural gravity model.

quantity reductions exceeding 20% and value declines above 40%, reflecting higher price elasticity or limited alternative suppliers. In contrast, large-volume commodities like peppers, tomatoes, and cucumbers exhibit smaller proportional declines, suggesting more inelastic import demand.

On average, import quantities across all commodities are projected to decline by 17.6%, and import values by 21.3%—both smaller than the imposed 25% tariff. This gap suggests partial tariff absorption by Mexican exporters, indicating incomplete pass-through to US prices. Based on a 2023 import value of \$12.3 billion, the estimated tariff revenue would total approximately \$3.1 billion. However, it should be noted that actual revenue could be lower due to incomplete pass-through and potential adjustments in demand and sourcing.

Overall, these findings highlight both the scale of US dependence on Mexican fresh vegetables and the uneven vulnerability of different commodities to trade policy changes. While major imports may absorb tariffs with limited quantity adjustments, specialty and low-volume crops face a higher risk of supply disruptions and price volatility under protectionist measures.

Broader Price and Employment Impacts of Tariffs along the Fresh Vegetable Supply Chain

While Table 2 shows that a hypothetical 25% tariff on Mexican fresh vegetable imports would reduce trade volumes, its effects would extend well beyond border transactions. Reduced import flows could generate ripple effects throughout the fresh vegetable supply chain—from farms to retailers—through both direct and indirect channels (Johnson, 2020).

On the farm side, lower import volumes may raise farm-gate prices and temporarily increase revenues for some US growers. However, sustained production expansion would depend on broader structural constraints, including labor availability, climatic conditions, and production costs. As noted by Ridley and Devadoss (2021), US fresh produce growers already face tight labor markets and rising input expenses, limiting their ability to respond quickly to higher prices.

At the retail level, the degree to which tariffs translate into higher consumer prices would hinge on market competition, product substitutability, and retailers' pricing strategies (He, 2025). Crops such as tomatoes, peppers, and cucumbers—where Mexico dominates off-season

supply—are especially vulnerable to retail price increases during winter months when domestic production is limited.

Previous studies suggest that trade shocks can also affect employment across both farm and nonfarm sectors (He, 2020; Charlton et al., 2025). Employment impacts are likely to emerge along the distribution chain, particularly in border states such as Arizona and Texas—major hubs for cross-border produce logistics. Reduced import volumes could lower throughput in trucking, inspection, and cold-storage operations. Although the magnitude of these effects remains uncertain, a sustained decline in trade would likely have measurable implications for regional employment and overall supply chain resilience.

Conclusions and Discussion

The US fresh vegetable sector faces increasing challenges that heighten its exposure to both import competition and trade policy uncertainty (Johnson, 2020). Rising import volumes—particularly from Mexico—have contributed to persistent price pressures and narrower margins for domestic producers. These pressures are compounded by ongoing labor shortages and rising input costs, which limit growers' ability to expand production or compete on scale (Ridley and

Devadoss, 2021). The establishment of the Seasonal and Perishable Agricultural Products Advisory Committee by the US Trade Representative and USDA in 2023 reflects growing recognition of these structural concerns and the need to reassess the competitiveness of US producers within an increasingly integrated North American market.

Recent trade policy developments and the upcoming USMCA review in July 2026 add further uncertainty to an already complex trade environment. While such measures may provide limited relief to US growers through higher farm-gate prices, they also risk broader ripple effects—raising costs for consumers, altering supply chain relationships, and potentially inviting retaliatory responses from trade partners.

These dynamics highlight the importance of understanding how trade policies shape outcomes across the entire supply chain. Tariffs and import adjustments can redistribute benefits and costs among farmers, distributors, retailers, and consumers in ways that are not always visible in aggregate trade data. Further research linking trade flows to employment, pricing behavior, and supply-chain organization would help clarify these mechanisms and inform future policy design.

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Acknowledgements: This work was supported by the USDA National Institute of Food and Agriculture, Agricultural and Food Research Initiative Competitive Program, Agriculture Economics and Rural Communities, grant # 2023-67023-40643, and the USDA National Institute of Food and Agriculture Hatch project #7006059.

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Impacts of US Tariffs on Global Agricultural Trade Flows

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JEL Classifications: F13, F14, F51

Keywords: Agreements, Agrifood, Tariffs

DOI: 10.22004/ag.econ.371495

Since his return to the White House in January 2025, Donald Trump has, in a few short months, upended the global trading system with a series of tariff announcements that threaten trade and have created much uncertainty in global markets. Citing the persistent US trade deficit and what he considers unfair practices by other countries, the president declared April 2 “Liberation Day” and announced a sweeping new set of supplemental tariffs on imports from nearly all major US trading partners. This announcement followed a series of previous actions taken since the beginning of the administration, including 20% tariffs on Chinese imports, 25% tariffs on automobiles and auto parts, and duties on steel and aluminum (Bown, 2025).

While the broader political and economic implications of these measures have dominated initial headlines, their impact on global agricultural trade could be equally disruptive. Agriculture sits at the intersection of global value chains, international development, and national food security. It is also a sector that has historically been highly sensitive to trade policies, retaliatory tariffs, and sudden shifts in market access. As with the wave of tariffs introduced during the first Trump administration, this new regime could reshape trade flows, drive price volatility, and introduce long-term uncertainty into the global food system.

This paper examines the impact of US tariffs on agricultural trade flows, with particular emphasis on Latin America and the Caribbean (LAC), which accounted for almost 17% of total US agricultural imports in 2024 and are significant suppliers of fruits and vegetables as well as tropical products like coffee and cocoa. US agricultural exports—such as grains and oilseeds, meat and poultry, and cotton—compete directly in global markets with exports from LAC countries like Brazil and Argentina. We examine how tariffs both impede exports to the United States and potentially create new opportunities in third markets.

Scenarios and Modeling Framework

We analyzed three potential scenarios to assess the implications of the new US tariff policies (Table 1). The first scenario, North America, is based on the fact sheet released by the White House on February 1, 2025 (White House 2025). This scenario includes a 25% tariff for all imports by the United States from Canada and Mexico, except for energy products, which only receive a 10% tariff.

The second scenario, Liberation Day, reflects tariffs announced on April 2, 2025, introducing a 10% supplemental tariff on imports from nearly all US trading partners. In addition, countries with which the United States runs the largest bilateral trade deficits face higher, individualized tariffs referred to by the Trump administration as “reciprocal” tariffs—though these are imposed unilaterally rather than mutually negotiated. Significantly, the Liberation Day tariffs exempt Canada and Mexico from tariff increases.

The third scenario, China + 10%, simulates the global trade impacts of the United States and China’s retaliatory tariffs in place as of April 12. On the US side, this includes the 10% additional tariffs announced on April 2 against all trading partners but Canada and Mexico (but not the additional supplemental tariffs from April 2). In addition, this scenario includes 125% tariffs specifically targeting China. In response, China is assumed to impose a 125% supplemental tariff on US exports, representing a significant counter-retaliatory measure. No other country retaliates against the US in agrifood products, but all countries impose retaliatory measures on US exports of steel, aluminum, cars, and car parts.

We analyze the impacts of the new US tariffs using MIRAGRODEP, a multiregion, multisector computable general equilibrium model that aims to explain agricultural trade patterns (as well as those of other sectors) and show how these would change in response

Table 1. Scenario Parameters

Region/Sector	Scenario		
	North America	Liberation Day	China + 10%
Canada	25% (10% for energy products)	0% for USMCA-compliant goods	0% for USMCA-compliant goods
Mexico	25% (10% for energy products)	0% for USMCA-compliant goods	0% for USMCA-compliant goods
China	n/a	54%	125%
The rest of the world	n/a	10% + supplemental tariffs	10%
Steel and aluminum	n/a	25%	25%
Autos and auto parts	n/a	25%	25%

to changes in tariff levels (Piñeiro et al., 2025). The model is designed to capture medium-term impacts, essentially providing a snapshot of the economy before the shock and another one after the shock has taken effect. Because it does not restrict factor adjustments, reported impacts on GDP and trade may be smaller than in the short run (where production adjustments may be less responsive).

Macro Results

Across all three scenarios, GDP declines are observed globally (see Table 2), with variations depending on the country or region. The United States itself experiences negative impacts in all scenarios, with the most significant drop occurring under the Liberation Day scenario (−1.21%). This highlights the potential self-inflicted economic harm of broad, unilateral tariff hikes, even when introduced under the premise of boosting national competitiveness.

The most severe GDP losses are seen in Canada and Mexico, particularly under the North America scenario, where tariffs are likely more concentrated on close trading partners. Mexico's GDP falls by over 2%, and

Canada's decline is also substantial (−1.5%). These outcomes reflect the deep economic integration these countries have with the United States.

In the case of China and the EU, the impacts are more moderate but still clearly negative. China is hit hardest in the China +10% scenario (−0.4%), where it faces direct supplemental tariffs, while the EU sees smaller GDP losses due to indirect effects such as trade diversion and global slowdown.

For Latin America and the Caribbean (LAC), GDP shows limited upside under the North America scenario, while the other two scenarios result in economic contraction. The region's vulnerability stems from its dependence on global markets and agricultural exports, which are sensitive to shifts in trade policy and demand.

Sub-Saharan Africa (SSA) experiences similar directional impacts across the different scenarios, though with lower overall magnitudes. Although not a direct target of the tariffs, the region is indirectly affected through global economic linkages, such as commodity prices, reduced trade volumes, and tighter global financial conditions.

Table 2. Impacts of Tariffs on GDP (percentage change from baseline)

Region/Country	Scenario		
	North America	Liberation Day	China + 10%
USA	-0.23%	-1.21%	-1.14%
Canada	-1.48%	-0.21%	-0.44%
Mexico	-1.98%	-0.20%	-0.62%
EU	0.00%	-0.19%	-0.05%
China	0.01%	-0.25%	-0.41%
LAC (w/o Mexico)	0.04%	-0.18%	-0.17%
Sub-Saharan Africa	0.02%	-0.05%	-0.03%
World	-0.10%	-0.44%	-0.39%

Note: Calculations by authors based on MIRAGRODEP simulations.

Source: Piñeiro et al. (2025).

Table 3. Impact of Tariffs on Agrifood Trade (percentage change from baseline)

Trade	Region/Country	North America	Liberation Day	China + 10%
Exports	USA	-14.11%	-39.14%	-23.26%
Exports	Canada	-19.71%	12.27%	0.19%
Exports	Mexico	-24.95%	8.45%	-4.16%
Exports	EU	1.62%	-0.90%	-0.41%
Exports	China	1.55%	-2.28%	-7.55%
Exports	LAC (w/o Mexico)	1.32%	0.53%	0.40%
Exports	Sub-Saharan Africa	0.64%	0.61%	0.11%
Exports	World	-2.29%	-4.71%	-3.76%
Imports	USA	-13.22%	-24.46%	-17.41%
Imports	Canada	-23.97%	7.71%	-4.00%
Imports	Mexico	-33.95%	11.16%	-6.33%
Imports	EU	0.89%	-2.49%	-0.68%
Imports	China	1.26%	-9.02%	-8.74%
Imports	LAC (w/o Mexico)	1.45%	-2.20%	-0.81%
Imports	Sub-Saharan Africa	0.53%	-0.20%	-0.86%
Imports	World	-2.29%	-4.71%	-3.76%

Note: Calculations by authors based on MIRAGRODEP simulations.

Source: Piñeiro et al. (2025).

Finally, the global economy suffers under all three scenarios. The aggregate world GDP declines, showing the broader costs of escalating trade tensions, with the greatest impact under the Liberation Day scenario (–0.4%). While tariffs may be intended to protect domestic industries or rebalance trade relationships, they often backfire by reducing competitiveness.

Impacts on Agrifood Trade

Across the three scenarios, both imports and exports in the agrifood sector experience significant declines globally (Table 3), with variations across different countries and regions. The United States faces the most substantial negative impact on both imports and exports, with the most pronounced drop under the Liberation Day scenario (–24.5% and –39.1%, respectively). Results are broadly in line with relative results from other studies (see Bouët, Maty, and Zheng, 2024; Meltzer, 2025; Budget Lab, 2025).

Canada and Mexico see the most severe reductions in agrifood imports and exports, particularly in the North America scenario, where tariffs are more concentrated on these close trading partners. Mexico experiences a steep decline in imports, with a drop of nearly 34% in the North America scenario, and a significant reduction in exports as well (–25%). Canada's imports fall by nearly 24% under the same scenario, while its exports drop by 20%. These results reflect the deep economic integration of these countries with the United States, highlighting the interconnectedness of trade flows within the region.

For LAC (excluding Mexico), both imports and exports experience smaller impacts due to the low US share of agrifood trade in these regions. Across the different scenarios, imports in LAC (excluding Mexico) declined

from 1.5% to –2.2%, while exports fell from 1.3% to 0.4%. However, their dependence on agricultural exports makes them sensitive to changes in global trade policies and demand.

Ultimately, global trade suffers under all three scenarios, with the most pronounced drop under the Liberation Day scenario (–4.7%). These trends underscore the broader economic costs of escalating trade tensions.

Beyond the impacts on total trade, the different scenarios reveal notable trade diversion effects that alter established trade patterns (see Table 4). Such diversions can have lasting implications for regional competitiveness, integration, and economic resilience. This highlights how even short-term policy shifts can trigger long-term structural changes in trade dynamics.

Under the North America scenario, agrifood exports from Mexico and Canada to the United States decline sharply, by 52% and 65%, respectively. In response, US imports from LAC (excluding Mexico) increase, partially offsetting the reduced inflows from Canada and Mexico. Bilateral trade between Canada and Mexico rises, and Mexico redirects some of its exports toward the EU and China. However, these alternative markets do not fully compensate for the substantial loss of access to the US market.

Under the China +10% scenario, US agrifood exports experience a broad-based decline across all major regions, with the steepest contraction occurring in exports to China (99%). In response, China diversifies its sourcing strategy by significantly increasing agrifood imports from alternative suppliers, particularly Canada, and LAC (excluding Mexico).

Table 4. Agrifood Trade Diversion in Value Terms. Scenarios with Counter-Retaliatory Tariffs (percentage change from baseline)

Region/Country	Destination	North America	Liberation Day	China + 10%
USA	Canada	-66.19%	10.03%	-11.80%
USA	Mexico	-68.39%	18.31%	-8.86%
USA	EU	5.55%	-53.17%	3.07%
USA	China	4.39%	-83.83%	-98.90%
USA	LAC (w/o Mexico)	3.57%	-26.82%	-8.48%
USA	Sub-Saharan Africa	6.85%	-35.50%	-13.31%
USA	World	-14.87%	-38.81%	-23.17%
Canada	USA	-65.23%	22.45%	-11.66%
Canada	Mexico	114.77%	-41.92%	-10.57%
Canada	EU	20.29%	-7.62%	-1.59%
Canada	China	19.72%	17.82%	41.72%
Canada	LAC (w/o Mexico)	16.20%	-2.19%	5.65%
Canada	Sub-Saharan Africa	16.81%	-3.63%	6.07%
Canada	World	-20.96%	12.52%	-0.24%
Mexico	USA	-52.36%	15.05%	-8.34%
Mexico	Canada	105.41%	-14.48%	12.87%
Mexico	EU	42.17%	-13.98%	5.20%
Mexico	China	34.50%	-10.74%	9.71%
Mexico	LAC (w/o Mexico)	23.05%	-4.17%	4.82%
Mexico	Sub-Saharan Africa	3.24%	-1.26%	0.93%
Mexico	World	-26.05%	8.81%	-4.32%
LAC (w/o Mexico)	USA	11.01%	-19.88%	-12.69%
LAC (w/o Mexico)	Canada	22.07%	3.84%	5.64%
LAC (w/o Mexico)	Mexico	39.27%	-4.84%	-0.68%
LAC (w/o Mexico)	EU	-0.60%	-2.77%	-3.70%
LAC (w/o Mexico)	China	-1.55%	15.16%	21.89%
LAC (w/o Mexico)	LAC (w/o Mexico)	-1.48%	4.75%	0.37%
LAC (w/o Mexico)	Sub-Saharan Africa	-0.24%	-1.30%	-2.06%
LAC (w/o Mexico)	World	1.33%	0.66%	0.49%
World	USA	-14.04%	-24.02%	-17.41%
World	Canada	-25.10%	7.76%	-4.22%
World	Mexico	-34.62%	11.21%	-6.42%
World	EU	0.90%	-2.53%	-0.70%
World	China	1.25%	-9.04%	-8.69%
World	LAC (w/o Mexico)	1.43%	-2.22%	-0.81%
World	Sub-Saharan Africa	0.53%	-0.21%	-0.87%
World	World	-2.51%	-4.69%	-3.81%

Source: Calculations by authors based on MIRAGRODEP simulations.

Under the Liberation Day scenario, the overall trade impacts are more pronounced across all regions. However, a key distinction emerges: Since Mexico and Canada are exempt from tariffs, intra-North American trade expands. Relative to the China +10% scenario, US

exports to other global regions face more severe declines, particularly in exports destined for the EU. Notably, US exports to China exhibit a relative improvement in response to a lower tariff under the North America scenario.

Table 5. Impacts of a 125% China Tariff on US Soybeans on Global Soybean Trade (Percentage change from baseline)

Exporters	China	EU	Mexico	World
Argentina	35.40%	-30.49%	-53.10%	20.38%
Brazil	29.11%	-33.44%	-55.39%	16.20%
Canada	72.35%	-11.18%	-40.69%	16.22%
United States	-99.12%	75.87%	23.39%	-38.57%

Note: Calculations by authors based on MIRAGRODEP simulations.
Source: Piñeiro et al. (2025).

To understand better how tariffs distort trade flows, consider the case of oilseeds. China plays a pivotal role in global oilseed markets, particularly as the dominant importer of soybeans. In the 2023/2024 marketing year, China imported 112 million metric tons of soybeans, 62% of the global soybean trade, driven by its need for soybean meal for animal feed and soybean oil for food use. Since 2000, China’s soybean import demand has expanded at an extraordinary average annual rate of 9.2%, vastly outpacing global growth. This voracious demand has structured the global soybean supply chain, with Brazil and the United States emerging as the two largest exporters to China, accounting for a combined 92% of China’s imports. However, shifts in trade policy, such as the proposed 125% tariff on US soybeans under the China +10% scenario, could radically disrupt existing flows and prices in the global oilseed market.

Under this scenario, US soybean exports to China would become prohibitively expensive, likely falling to near zero (see Table 5). Brazil, already China’s largest supplier, would further consolidate its position, with Argentina and other South American exporters also increasing shipments. Despite this adjustment, China’s total oilseed imports are projected to decline by 8.2% due to supply constraints and higher prices. The United States,

meanwhile, would face an estimated 39% drop in oilseed exports overall, as new buyers in secondary markets (Europe and Mexico) only partially compensate for lost Chinese demand. Global oilseed trade would contract by 4.2%, revealing the scale of the distortion caused by tariff-induced trade redirection.

Conclusions

Together, the three scenarios underscore the complexity and far-reaching consequences of large-scale trade disruptions in global agricultural markets. While each scenario reveals distinct patterns of impact—whether highly concentrated regional losses in North America, strategic global realignments triggered by US–China tensions, or widespread fragmentation under wide-ranging US tariff policies—all highlight the vulnerability of interdependent trade systems to protectionist shocks. These findings emphasize the importance of market diversification, investment in resilient supply chains, and the maintenance of open and predictable trade environments. In an era of rising geopolitical uncertainty, evidence-based trade policy and strategic cooperation will be critical to minimizing economic harm, ensuring food security, and preserving the stability of global agrifood trade networks.

For More Information

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Acknowledgements: This work is part of the CGIAR Science Program on Policy Innovations. We thank all funders who supported this research through their contributions to the CGIAR Trust Fund.