

# **Estimating the Impacts of China's Counter Tariffs on U.S. Cotton: A U.S. – China**

## **Market Perspective**

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## **Abstract**

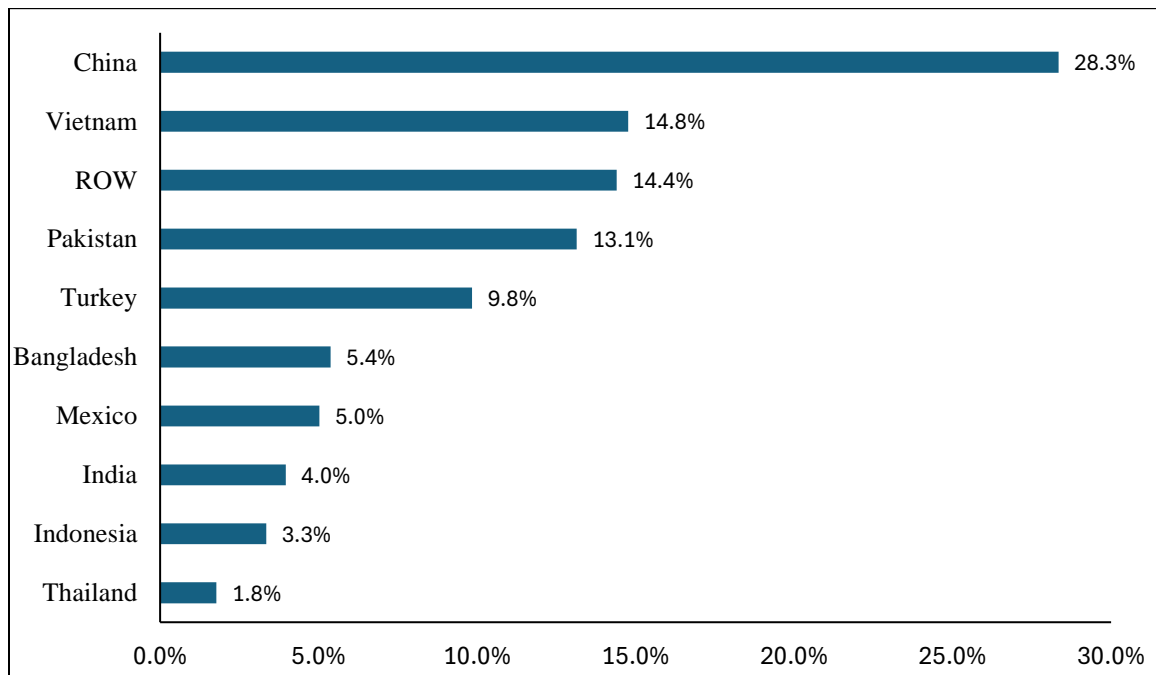
This study assesses the economic impacts of China's counter tariffs on U.S. cotton imports, implemented in response to ongoing U.S.–China trade tensions. We conducted scenario-based simulations to evaluate the potential impacts of 15% and 49% Chinese import tariffs on U.S. cotton exports, estimating their effects on cotton trade flows, prices, production, and stock levels in both the U.S. and Chinese cotton markets over a 10-year projection period. Results indicate that the tariffs significantly reduce China's imports of U.S. cotton, leading to average annual declines of 5.7% and 18.4% under the 15% and 49% tariff scenarios, respectively. The resulting decline in U.S. export demand exerts downward pressure on global cotton prices, with the Cotlook A-Index projected to fall by up to 3.6% in the first year under the high-tariff scenario, followed by an average annual decline of 1.5% relative to the baseline in the long term. In China, domestic mill demand is mainly met by drawing down state reserves, while in the U.S., lower exports lead to moderate declines in production and prices, alongside rising ending stocks.

## **Introduction**

In response to the Trump administration's proposed additional 34% tariff on all Chinese goods imported into the U.S., announced on April 2, 2025, China declared on April 4, 2025, that it would implement a reciprocal 34% tariff on all U.S. imports, including cotton, effective April 10, 2025. This new measure comes in addition to previously announced retaliatory tariffs on U.S. agricultural products, a 15% tariff on U.S. cotton implemented on March 10, 2025. As a result, U.S. cotton exports to China will face a cumulative tariff of 49% starting April 10, 2025. These escalating tariff actions

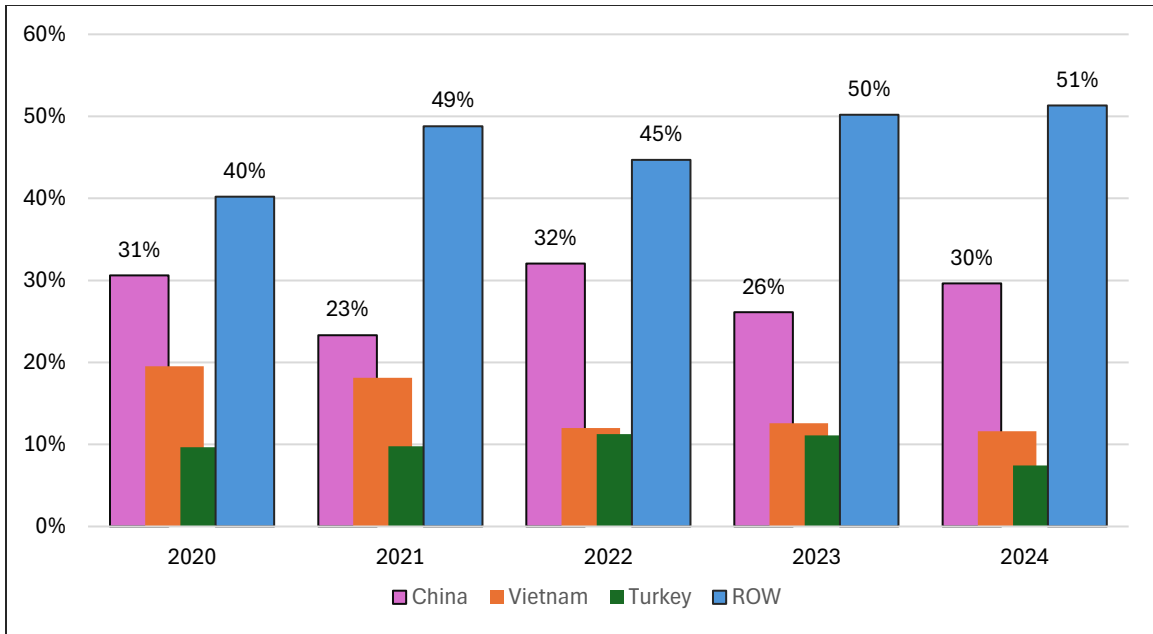
are part of the broader U.S. - China trade conflict, marked by reciprocal duties imposed by both nations on each other's goods.

Over 80 percent of U.S. cotton production is exported to international markets (USDA PSD, 2025), with China, Vietnam, and Turkey being the primary destinations (Figure 2). In 2024, China was the largest importer of U.S. cotton, accounting for exports valued at approximately US\$1.62 billion (USDA GATS, 2025). As China accounts for nearly 30 percent of total U.S. cotton exports by value since 2020 (Figure 1), the imposition of higher tariffs has raised significant concerns about their potential impact on both the U.S. and Chinese cotton markets, leading to market volatility and growing uncertainty among American cotton producers regarding future export opportunities and pricing dynamics.



**Figure 1.** Market share of major U.S. cotton importers by value, 2020 – 2024

Data source: U.S. Census Bureau Trade Data



**Figure 2.** Annual market share trends of top U.S. cotton importers by value, 2020 – 2024  
Data source: U.S. Census Bureau Trade Data

Using scenario-based simulations, we evaluate the potential market outcomes under two tariff levels – 15% and 49% – to capture both moderate and severe policy environments. The objective is to quantify the impact on U.S. cotton export volumes and prices, as well as China's domestic supply-demand balance. To accomplish this goal, this analysis used a partial equilibrium world fiber model to establish a ten-year baseline (2025/26 – 2034/35) under a set of plausible assumptions regarding macroeconomic and other variables, which allows for understanding of short- and long-term effects regarding to changes in the global trade environment. The model includes behavioral equations of supply, demand, and trade for cotton, and solves domestic and international prices of cotton endogenously. In particular, China's cotton imports are divided into imports from the United States and the rest of the world (ROW), making it possible to incorporate appropriate tariffs for cotton imports from different sources. Next, two scenarios where

China places 15 percent and 49 percent tariff on imports of U.S. cotton were developed beginning with the 2025/26 marketing year. Then the simulated results from assumed scenarios were compared to the baseline projections to evaluate potential effects of China's retaliatory tariffs. This study provides quantitative insights to inform policy discussions and industry strategies regarding retaliatory tariff effects.

## **Methods**

A partial equilibrium econometric simulation model of U.S. and other major cotton markets, known as the World Fiber Model (Pan and Hudson, 2011)<sup>2</sup>, was used to estimate the effects of potential trade environment changes on the U.S. cotton competitiveness. The world fiber model has been extensively used in the past for policy analysis, including most recently Liu and Hudson (2019); Capps, Williams and Hudson (2016); Williams et al. (2011); MacDonald et al. (2010); and Pan, Hudson and Ethridge (2010). This partial equilibrium model representing the world fibers markets incorporates supply and demand models for the United States and 23 other major producing and consuming countries and regions. It is used to perform analysis on the expected behavior of natural fiber markets to potential changes in trade, technological, economic and policy factors, and evaluate the impacts of these changes on the 24 country/regional cotton and textiles markets.

This report incorporates ICAC (2025) long-term cotton baseline projections over marketing years 2025/26 to 2034/35 to reflect cotton supply and demand changes in

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<sup>2</sup> See Technical Documentation of the World Fiber Model by Pan and Hudson (2011) for more information on parameter estimates and diagnostic statistics.

future years. The baseline simulation is normally conducted with a set of assumptions about the current general economy as well as agricultural and trade policies in major exporting and importing countries. In addition, the model is driven by a set of macroeconomic variables, such as real GDP, consumer price index (CPI), exchange rates and population growth. Projections for these macroeconomic variables as well as those for acreage, yield, prices for competing crops (e.g., corn, rice, soybean and wheat) and crude oil prices were obtained from the World and U.S. Agricultural Outlook published by Food and Agricultural Policy Research Institute (FAPRI).

The model was first run under the current situation (or baseline); i.e., under the projected global conditions for the next 10 years assumed for the 2025 FAPRI baseline projections. After that, alternative scenarios were simulated with all other conditions remaining the same as in the baseline. Finally, the projected outcomes of assumed scenarios were compared with the baseline scenario to determine the economic impacts on the international cotton market.

## **Data**

The annual data sets used in the estimation process were obtained from several different sources. Cotton data on acreage, yield, production, mill use, ending stocks and trade were collected from the Production, Supply & Demand (PS&D) database of the Foreign Agricultural Service of the U.S. Department of Agriculture (USDA). U.S. cotton regional acreage, yield and production were obtained from the National Agricultural Statistic Service (NASS), USDA. Data concerning U.S. cotton farm and mill prices were obtained from various issues of Cotton and Wool Yearbook published by the Economic

Research Service (ERS), USDA. Prices of competing crops were derived from various yearbooks for different crops published by the ERS as well. All prices and income were expressed in real terms before estimating the behavioral equations.

## **Estimation Results**

Results are reported as annual percentage changes over the period 2025/26 - 2034/35 in terms of changes from baseline estimates. Tables 1 and 2 summarize estimated results for the next 10 years of key variables related to U.S. and China's cotton markets corresponding to respective scenarios.

### ***China's Cotton Market Responses***

Our results indicate that China's retaliatory tariffs on U.S. cotton significantly reduce U.S. cotton exports to the Chinese market over the projection period. Compared to the baseline scenario, simulation results (Table 1) show that a 15% tariff leads to an average annual decline of 5.7% in U.S. cotton exports to China, while a 49% tariff results in a substantial average annual reduction of 18.4%.

The Cotton A-Index is estimated to decline by 1.1% in the first year following the implementation of a 15% tariff and is projected to continue decreasing over the remainder of the projection period, averaging 0.5% below the baseline annually. In the case of a 49% tariff, the A-Index experiences a more pronounced initial drop of 3.6% in the first year, followed by an average annual decline of 1.5% relative to the baseline throughout the projection period. However, the magnitude of the impact diminishes in subsequent years as market participants in China and other countries adjust to the new trade environment.

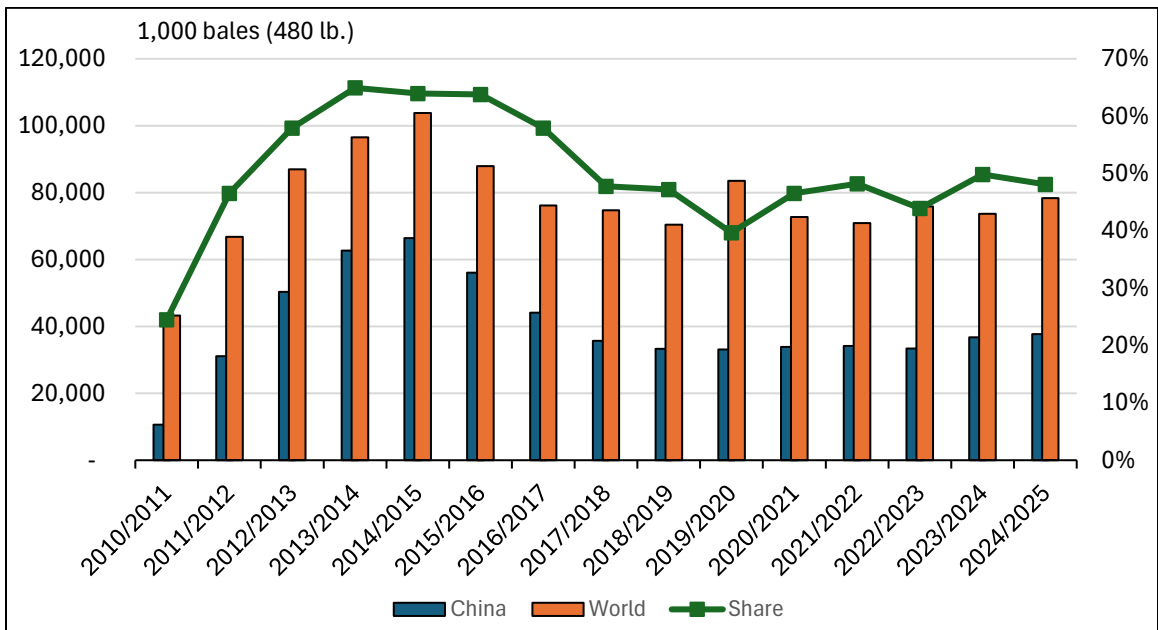
**Table 1.** Estimated effects of China’s cotton tariff on China cotton market, 2025/26 – 2034/35

	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	Average
<b>Production (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	30,093	30,212	30,252	30,227	30,448	30,674	30,966	31,217	31,365	31,802	30,726
<b>15% tariff</b>	30,091	30,191	30,233	30,210	30,432	30,658	30,951	31,204	31,352	31,789	30,711
<b>Percent change</b>	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>49% tariff</b>	30,087	30,144	30,188	30,169	30,394	30,622	30,918	31,173	31,322	31,759	30,678
<b>Percent change</b>	0.0%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	-0.2%
<b>Domestic consumption (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	38,203	38,220	38,180	38,443	38,551	38,898	39,501	39,929	40,497	40,952	39,137
<b>15% tariff</b>	38,228	38,253	38,216	38,482	38,590	38,937	39,539	39,966	40,533	40,988	39,173
<b>Percent change</b>	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>49% tariff</b>	38,282	38,328	38,299	38,568	38,678	39,024	39,623	40,049	40,615	41,070	39,254
<b>Percent change</b>	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
<b>Ending stocks (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	37,372	37,328	37,125	36,858	36,581	36,339	36,096	35,862	35,710	35,673	36,494
<b>15% tariff</b>	37,218	36,987	36,595	36,138	35,671	35,239	34,805	34,382	34,040	33,811	35,489
<b>Percent change</b>	-0.4%	-0.9%	-1.4%	-2.0%	-2.5%	-3.0%	-3.6%	-4.1%	-4.7%	-5.2%	-2.8%
<b>49% tariff</b>	36,878	36,230	35,409	34,526	33,632	32,772	31,910	31,058	30,286	29,625	33,233
<b>Percent change</b>	-1.3%	-2.9%	-4.6%	-6.3%	-8.1%	-9.8%	-11.6%	-13.4%	-15.2%	-17.0%	-9.0%
<b>Imports from U.S. (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	2,438	2,417	2,353	2,414	2,369	2,380	2,422	2,563	2,695	2,781	2,483
<b>15% tariff</b>	2,299	2,277	2,214	2,276	2,230	2,240	2,281	2,421	2,552	2,636	2,343
<b>Percent change</b>	-5.7%	-5.8%	-5.9%	-5.7%	-5.8%	-5.9%	-5.8%	-5.5%	-5.3%	-5.2%	-5.7%
<b>49% tariff</b>	1,991	1,964	1,902	1,966	1,919	1,926	1,964	2,100	2,228	2,310	2,027
<b>Percent change</b>	-18.3%	-18.8%	-19.2%	-18.6%	-19.0%	-19.0%	-18.9%	-18.0%	-17.3%	-17.0%	-18.4%
<b>Imports from ROW (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	5,615	5,639	5,458	5,617	5,535	5,676	5,939	5,980	6,345	6,387	5,819
<b>15% tariff</b>	5,627	5,646	5,464	5,622	5,539	5,680	5,942	5,982	6,347	6,389	5,824
<b>Percent change</b>	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>49% tariff</b>	5,654	5,663	5,476	5,633	5,549	5,688	5,948	5,988	6,353	6,395	5,835
<b>Percent change</b>	0.7%	0.4%	0.3%	0.3%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.3%
<b>A-Index (U.S. cents per pound)</b>											
<b>0 tariff</b>	86.5	87.1	87.8	88.5	90.3	91.1	91.5	92.2	93.3	94.5	90.3
<b>15% tariff</b>	85.5	86.5	87.3	88.1	89.9	90.8	91.3	92.0	93.1	94.2	89.9
<b>Percent change</b>	-1.1%	-0.7%	-0.5%	-0.5%	-0.4%	-0.4%	-0.3%	-0.3%	-0.2%	-0.2%	-0.5%
<b>49% tariff</b>	83.3	85.1	86.3	87.2	89.0	90.0	90.8	91.5	92.5	93.7	89.0
<b>Percent change</b>	-3.6%	-2.3%	-1.7%	-1.5%	-1.4%	-1.2%	-0.9%	-0.8%	-0.8%	-0.8%	-1.5%

To meet the demand of Chinese textile industry, it is expected that China will increase cotton imports from other major cotton producing countries. However, as suggested by our estimation results, even with a dramatic 49% tariff, it will result in a negligible 0.3% average rate above the baseline projection. Meanwhile, China’s ending stocks are estimated to continue the drawdown for the rest of the projection period to meet Chinese mills’ demand. Specifically, with 15% tariff, the ending stocks will drop by an average of 2.8% annually compared to the baseline projection, while the 49% tariff will result in an average of 9% reduction below the baseline projection.



To sustain the demand of its textile industry, China is expected to increase cotton imports from other major producing countries. However, our simulation results suggest that even under a significant 49% tariff on U.S. cotton, cotton imports from ROW would rise only marginally – by an average of only 0.3% above the baseline projection. This modest increase is reasonable given that China is the world’s largest holder of cotton stocks, accounting for approximately 50% of global reserves (Figure 3). As a result, rather than significantly increasing imports, Chinese mills are projected to rely more heavily on domestic reserves to meet consumption needs. Consequently, China’s ending stocks are expected to decline steadily over the projection period. Under the 15% tariff scenario, ending stocks are estimated to fall by an average of 2.8% annually relative to the baseline, while the 49% tariff results in a sharper average annual decline of 9%.



**Figure 3.** China and global cotton ending stocks

Data source: Foreign Agricultural Service, USDA

## U.S. Cotton Market Reponses

In the U.S. cotton market, the imposed tariffs are projected to put downward pressure on both production and exports, while contributing to a moderate accumulation of ending stocks. As shown in Table 2, the magnitude of these effects remains relatively modest under both tariff scenarios. Specifically, under the more severe 49% tariff scenario, U.S. cotton production is projected to decline by an average of 0.3% annually relative to the baseline projection, with exports showing a similar average annual decrease of 0.3%. As demand weakens, U.S. ending stocks are expected to rise slightly, increasing by an average of 0.5% over the long term.

**Table 2.** Estimated effects of China’s cotton tariff on U.S. cotton market, 2025/26 – 2034/35

	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	Average
<b>Production (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	15,395	15,455	15,513	15,537	15,679	15,871	15,981	15,985	16,095	16,255	15,777
<b>15% tariff</b>	15,395	15,429	15,489	15,519	15,664	15,857	15,968	15,976	16,087	16,247	15,763
<b>Percent change</b>	0.0%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
<b>49% tariff</b>	15,395	15,382	15,435	15,479	15,631	15,826	15,940	15,954	16,067	16,228	15,734
<b>Percent change</b>	0.0%	-0.5%	-0.5%	-0.4%	-0.3%	-0.3%	-0.3%	-0.2%	-0.2%	-0.2%	-0.3%
<b>Domestic consumption (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	1,766	1,764	1,773	1,756	1,780	1,786	1,759	1,764	1,740	1,725	1,761
<b>15% tariff</b>	1,767	1,765	1,773	1,756	1,780	1,786	1,760	1,764	1,741	1,726	1,762
<b>Percent change</b>	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>49% tariff</b>	1,769	1,767	1,775	1,757	1,780	1,786	1,760	1,765	1,742	1,727	1,763
<b>Percent change</b>	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
<b>Ending stocks (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	5,143	5,209	5,187	5,109	5,048	4,959	4,873	4,787	4,702	4,599	4,962
<b>15% tariff</b>	5,162	5,223	5,197	5,118	5,056	4,966	4,878	4,791	4,706	4,603	4,970
<b>Percent change</b>	0.4%	0.3%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
<b>49% tariff</b>	5,205	5,256	5,221	5,138	5,074	4,981	4,889	4,801	4,715	4,612	4,989
<b>Percent change</b>	1.2%	0.9%	0.6%	0.6%	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%	0.5%
<b>Exports (thousand 480 lb. bales)</b>											
<b>0 tariff</b>	13,286	13,625	13,762	13,859	13,960	14,174	14,307	14,308	14,440	14,633	14,035
<b>15% tariff</b>	13,266	13,603	13,741	13,843	13,946	14,162	14,296	14,299	14,432	14,624	14,021
<b>Percent change</b>	-0.2%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
<b>49% tariff</b>	13,221	13,564	13,695	13,805	13,914	14,133	14,272	14,277	14,412	14,604	13,990
<b>Percent change</b>	-0.5%	-0.4%	-0.5%	-0.4%	-0.3%	-0.3%	-0.2%	-0.2%	-0.2%	-0.2%	-0.3%
<b>Farm prices (U.S. cents per pound)</b>											
<b>0 tariff</b>	67.4	67.8	68.2	68.8	70.5	71.4	71.7	72.5	73.2	74.6	70.6
<b>15% tariff</b>	66.8	67.4	67.9	68.5	70.2	71.2	71.6	72.4	73.1	74.5	70.3
<b>Percent change</b>	-1.0%	-0.6%	-0.5%	-0.4%	-0.4%	-0.3%	-0.2%	-0.2%	-0.2%	-0.2%	-0.4%
<b>49% tariff</b>	65.3	66.4	67.2	67.9	69.6	70.7	71.2	72.0	72.7	74.1	69.7
<b>Percent change</b>	-3.1%	-2.1%	-1.5%	-1.3%	-1.2%	-1.0%	-0.7%	-0.7%	-0.7%	-0.7%	-1.3%

As a result of declining export demand, the U.S. cotton farm price is negatively impacted by the imposition of tariffs. Under the 49% tariff scenario, the farm price is

projected to experience a sharp initial decline of 3.1% in the 2025/26 marketing year, followed by an average annual decrease of 1.3% over the projection period relative to the baseline. Similarly, under the 15% tariff, the farm price is expected to decrease by 1.0% in 2025/26, with an average of 0.4% annually thereafter.

## **Conclusion**

This analysis evaluates the potential impacts of China's counter tariffs on U.S. cotton imports, in response to escalating U.S.-China trade tensions. Simulation results reveal that the imposition of 15% and 49% tariffs on U.S. cotton significantly reduces China's imports of U.S. cotton, leading to a notable contraction in bilateral cotton trade. In the Chinese cotton market, domestic mill demand is largely met through the drawdown of national reserves over the projection period, as China leverages its substantial stocks – reflected in the sustained reduction of ending stocks. The reduced demand from China exerts downward pressure on U.S. cotton exports and farm prices, resulting in modest declines in U.S. production. While the overall magnitude of impact is moderate due to global market adjustments, the initial shocks – particularly under the 49% tariff scenario – are more pronounced. Despite this adjustment, global cotton prices face downward pressure, with the cotton A-Index declining by 1.1% in the first year under the 15% tariff scenario and averaging 0.5% below the baseline annually. Under the 49% tariff scenario, the price impact is more pronounced, with a 3.6% decline in the first year and an average annual decrease of 1.5% over the projection period, driven by reduced U.S. export volumes and market reallocation.

## References

- Capps, Oral, Gary W. Williams, and Darren Hudson. 2016. "Cotton research and promotion program: Economic effectiveness study." Report prepared for the Cotton Board, Forecasting and Business Analytics, LLC, College Station, Texas.
- Food and Agricultural Policy Research Institute (FAPRI). 2025. U.S. Agricultural Market Outlook. FAPRI-MU Report # 01 – 25. University of Missouri.
- Liu, Bing, and Darren Hudson. 2019. "A preliminary analysis of the effects of China's cotton tariff on the Chinese and US cotton markets. " *Estey Journal of International Law and Trade Policy* 20, no. 1: 15-27.
- MacDonald, Stephen, Suwen Pan, Agapi Somwaru, and Francis Tuan. 2010. "China's role in world cotton and textile markets: Joint computable general equilibrium/partial equilibrium approach." *Applied Economics* 42(7): 875-885.
- Pan, Suwen, and Darren Hudson. 2011. *Technical Documentation of the World Fiber Model*. Lubbock, TX: Cotton Economics Research Institute, Department of Agricultural and Applied Economics, Texas Tech University.
- Pan, Suwen, Darren Hudson, and Don Ethridge. 2010. "Market structure impacts on market distortions from domestic subsidies: The U. S. cotton case." *Estey Centre Journal of International Law and Trade Policy* 11(2): 417-435.
- U.S. Department of Agriculture, Foreign Agricultural Service. 2025. "Production, Supply and Distribution Data," U.S. Department of Agriculture, Foreign Agricultural Service, Washington, DC. Internet site:

<https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery> (accessed on April 2025).

USDA GATS (U.S. Department of Agriculture. Global Agricultural Trade System).

2018. Internet site: <https://apps.fas.usda.gov/gats> (accessed on April 2025).

Williams, Gary W., Oral Jr. Capps, Darren Hudson, Suwen Pan, and John Robinson.

2011. Cotton Research and Promotion Program: Economic Effectiveness Study.

Report prepared for the Cotton Board, Forecasting and Business Analytics, LLC.

College Station, Texas.