TEXTILE ECONOMIC ADJUSTMENT ASSISTANCE: WILL IT AFFECT COTTON MARKETS?

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Abstract

This study analyzes the impact of the Textile Economic Adjustment Assistance (TEAA) program in the 2008 farm bill on U.S. and global cotton production and trade. Using the Global Fiber Model at the Cotton Economics Research Institute, we found that the TEAA is expected to marginally increase U.S. domestic mill use of cotton, but have negligible effects on global cotton trade or global cotton price.

Introduction

In September 2002, Brazil and other countries filed a petition with the World Trade Organization (WTO) alleging that export and domestic subsidies in the US significantly reduced world cotton prices. The WTO panel ruled against the US and a later appellate body also ruled against the US (see Hudson et al. for a more complete description of the WTO case). Of particular focus was the so-called "Step-2" program. Step-2 was composed of two key parts—a subsidy equal to the difference between world price and US price for shippers exporting cotton, and an equal subsidy to domestic textile producers for consumption of US cotton. The Step-2 program was eliminated in accordance with the WTO ruling. At that time, US textile mills lost access to competitively priced US cotton.

However, the 2008 farm bill provides for a transitory subsidy, called the Textile Economic Adjustment Assistance (TEAA) program. According to the legislation:

> Beginning August 1, 2008, through July 31, 2012, the Secretary is required to make a payment to domestic users of 4 cents per pound for all upland cotton consumed; beginning August 1 2012, the rate is adjusted to 3 cents per pound.
>
> Recipients must agree to invest the proceeds in plant and equipment, similar to requirements for Trade Adjustment Assistance.

A key feature of the TEAA is that it provides a subsidy for all cotton consumed, not just US cotton. This circumvents the "import substitution" problem with Step-2 that was intended to create demand for US cotton in lieu of foreign cotton. The TEAA, by contrast, provides a general subsidy to the US textile industry, and, therefore, should be WTO compliant.

We do not, however, have reliable information about the potential impacts of TEAA on the US cotton industry. The primary objective of this analysis is to determine the impact of the TEAA on US and global cotton prices, production, and trade.

Methods

We use a partial equilibrium, structural econometric model of the US and global cotton markets housed at the Cotton Economics Research Institute at Texas Tech University. The general structure of the model is found in Figure 1 (Pan et al. 2004).

As shown in figure 1, representative country models include supply, demand and market equilibrium for cotton and man-made fibers. In the model, representative country's cotton is modeled as a sector in a global comprehensive

supply and demand framework. Major components of the model include cotton supply and demand sectors, price linkage equations, manmade fiber production, and a textile output equation.

Area planted to cotton is modeled in a two-stage framework. The first stage determines gross cropping area. The second stage uses economic variables (expected net returns) to determine cropping patterns (area allocation) for cotton and major substitute crops. The partial equilibrium model allows each of these countries to be simulated simultaneously, with separate cropping pattern and yield equations. Cotton consumption is also modeled in two stages: total domestic fiber consumption and cotton's share of the fiber consumption. After two decades of rapid development, China has emerged as the world's largest producer of chemical fiber. Since 1997, consumption of chemical fiber has grown rapidly and has overtaken that of cotton. The share of cotton in total yarn production has declined from 86 percent in 1982 to about 60 percent in recent years. In this model, the weighted fiber price (cotton, wool and polyester) and GDP per capita determine the total fiber consumption, and the price ratio of cotton and other fibers is used to determine the shares of cotton and manmade fiber. Prices for both polyester (as a representative for manmade fibers) and the world cotton price (A-index) are endogenous and determined by world net trade. China's domestic cotton price and U.S. farm price are also determined by the domestic production, consumption, net trade, and ending stocks.

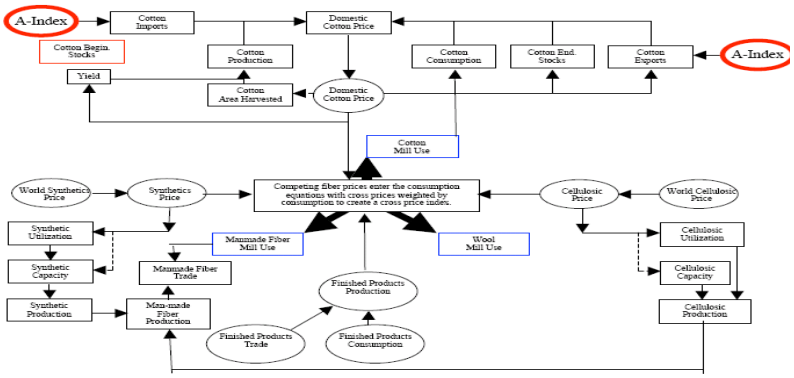

Figure 1. Representative Country of the World Fiber Model

The advantage of this modeling procedure is that it uses the most recent data on which to base analysis rather than relying on previously estimated elasticities. At the same time, model results allow simulation of alternative scenarios such as needed here.

The analysis was divided into two key components—baseline and policy simulation. In the first step, we utilize the structural model to develop a baseline under current policies and market conditions (the "baseline") for the 2008/09 – 2012/13 period (for this analysis, we assumed that all producers elect to enroll in the counter-cyclical payment (CCP) program instead of the average crop revenue election (ACRE) because research suggests that CCP provides greater payments to cotton farms than ACRE; see Pan et al. 2008 for details). Next, the TEAA was incorporated into the model and the rest of the world was allowed to adjust to the resulting price signals. The results of the TEAA simulation and the baseline were compared on the basis of price, production, consumption, and trade to determine the impacts of the TEAA relative to the current policy.

Simulation Results

The simulation results are shown in Tables 1 (US domestic market) and 2 (international market). Results indicate that the TEAA does, in fact, increase US domestic mill use between 0.31 and 0.52% over the period of analysis (with an average increase of 0.44%). The TEAA does not reverse the decline in US mill use, but does slow the decline somewhat (8.85% decline over the period without TEAA compared with 8.72% decline with TEAA).

Most of the increase in mill use comes at the expense of exports and stocks. On average, the implementation of TEAA leads to a 0.12% decline in US cotton exports. At the same time, the TEAA is expected to lead to an average 0.09% decline in US cotton stocks. The TEAA is expected to lead to a slight increase in US farm price (0.24%, on

average), but have almost no impact on US cotton production (0.02% average increase in production over the period).

Table 1. Effects of Textile Economic Adjustment Assistance on US Cotton Market

		2008/09	2009/10	2010/11	2011/12	2012/13	average
Farm price	Baseline	50.60	51.67	57.22	60.52	60.46	56.09
(cents/lb)	TEAA	50.70	51.80	57.36	60.69	60.60	56.23
	Percent	0.20%	0.25%	0.25%	0.28%	0.23%	0.24%
Mill Use	Baseline	4224.81	4329.56	4067.08	4016.00	3850.89	4097.67
(000 bales)	TEAA	4237.82	4348.36	4087.92	4037.02	3868.15	4115.85
	Percent	0.31%	0.43%	0.51%	0.52%	0.45%	0.44%
Export	Baseline	13189.17	11357.83	11594.12	11427.14	11467.94	11807.24
(000 bales)	TEAA	13178.70	11344.17	11580.62	11410.23	11451.78	11793.10
	Percent	-0.08%	-0.12%	-0.12%	-0.15%	-0.14%	-0.12%
Ending stock	Baseline	6223.01	4993.18	4330.76	4158.34	4137.48	4768.56
(000 bales)	TEAA	6219.91	4988.96	4326.07	4152.76	4132.84	4764.11
	Percent	-0.05%	-0.08%	-0.11%	-0.13%	-0.11%	-0.09%
Production	Baseline	13579.94	14409.06	14940.99	15207.01	15233.10	14674.02
(000 bales)	TEAA	13579.94	14412.87	14947.61	15209.93	15234.86	14676.91
	Percent	0.00%	0.03%	0.04%	0.02%	0.01%	0.02%

Table 2. Effects of Textile Economic Adjustment Assistance on World Cotton Market

		2008/09	2009/10	2010/11	2011/12	2012/13	average
A-index	Baseline	60.88	62.57	69.07	70.04	70.23	66.56
(cents/lb)	TEAA	60.91	62.59	69.08	70.06	70.23	66.57
	Percent	0.06%	0.04%	0.02%	0.02%	-0.01%	0.02%
Mill Use	Baseline	117791.92	119110.90	119308.44	121168.28	125462.20	120568.35
(000 bales)	TEAA	117797.56	119122.01	119320.59	121175.98	125462.17	120575.66
	Percent	0.005%	0.009%	0.010%	0.006%	0.000%	0.01%
Trade	Baseline	35850.05	37189.74	39525.70	41629.83	43462.25	39531.51
(000 bales)	TEAA	35845.31	37182.55	39517.27	41618.58	43450.34	39522.81
	Percent	-0.01%	-0.02%	-0.02%	-0.03%	-0.03%	-0.02%
Ending stock	Baseline	57619.47	49987.79	49598.59	49539.17	48837.21	51116.45
(000 bales)	TEAA	57613.14	49980.06	49591.78	49532.45	48836.12	51110.71
	Percent	-0.01%	-0.02%	-0.01%	-0.01%	0.00%	-0.01%
Production	Baseline	112916.86	111484.11	118924.13	121113.73	124765.09	117840.78
(000 bales)	TEAA	112916.86	111493.82	118937.19	121121.52	124770.69	117847.88
	Percent	0.000%	0.009%	0.011%	0.006%	0.004%	0.006%

The relatively minor effects of the TEAA in the US domestic market translate into even smaller effects in international markets. Both trade and ending stocks are expected to decline over the period. Unlike the Step 2 program, the TEAA is expected to increase world price slightly (0.02%, on average).

Summary and Conclusions

We analyze the potential impact of the Textile Economic Adjustment Assistance (TEAA) program on the US and global cotton markets using the global fibers model at Texas Tech University. While the results indicate that the TEAA has the anticipate impact of increase US mill use of cotton, the overall impacts are small in percentage terms. The TEAA does slow the decline in US mill use and increase farm prices. In global markets, the TEAA increases world price, but, again, the overall impact is quite small.

Thus, this analysis suggests that the TEAA only has a small impact on US and global cotton markets. But, the TEAA can unambiguously be concluded not to decrease price or have adverse impacts on foreign cotton growers.

References

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