Estimated Impacts of Increasing Indian Cotton Minimum Support Price in 2018/19 on the U.S. and Indian Cotton Markets

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Briefing Paper BP-04-18

Released July 2018

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The Indian government raised the Minimum Support Price (MSP) of cotton to Rs. 5,150 per quintal ($0.34/lb) from Rs. 4,020 per quintal ($0.26/lb) for medium staple cotton for the 2018-19 crop year[2]. The Minimum Support Price (MSP) is a form of market intervention by the government of India to protect farmers from price fluctuations in the market. To counter the nature of instability inherent in the prices of agricultural commodities, MSP for major agricultural products is fixed by the government at the beginning of the sowing season based on the recommendations of the Commission for Agricultural Costs and Prices (CACP). The Minimum Support Price is a guarantee price for farmers to their upcoming crop to encourage higher investment and production of agricultural commodities (Aayog, 2016). The major objectives are to ensure support price to farmers and reasonable prices to consumers.

India is the largest cotton producer in the world, as well as one of the largest exporter reaching 5 million bales (12%) at the end of 2017(USDA PSD, 2018). The substantial increase in the MSP of cotton is expected to have major impacts on the global cotton market. From 2016-17 to 2017-18, the Indian cotton MSP increased by Rs. 160 per quintal (4%) for medium staple cotton, and it has been increased by Rs. 1,130 per quintal (28%) in 2018-19. While raising the cotton MSP is expected to boost cotton production, the impact appears small resulting from the increase amount of Rs. 160 per quintal. Therefore, the effects on both Indian and world cotton markets are negligible (Liu and Hudson, 2018). The purpose of this analysis is to estimate the effects of recent Indian MSP increase on the current and future cotton markets.

Methods

[2] See Commission for Agricultural Costs and Prices (2018) for more detail on the Indian cotton Minimum Support Price changes.

The Global Fibers Model[3] at the International Center for Agricultural Competitiveness at Texas Tech University was used to provide estimates of the impacts of increased Indian cotton MSP on the Indian and U.S. cotton markets over the next 10 years. This partial equilibrium model representing the world fiber 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.

First, the model was run under the current situation (or baseline); i.e., under the projected global conditions for the next 10 years assumed for the 2017 FAPRI baseline projections where the MSP of cotton is fixed at Rs. 4020 per quintal for medium staple cotton. Next, a second scenario was performed, where India increased the MSP of cotton to Rs. 5150 per quintal for the 2018-19 crop year with all other conditions remaining the same as in the baseline. The projected outcome of the increased MSP was then compared with the baseline scenario to determine the economic impacts on India and U.S. cotton markets. The impacts of the policy change on cotton production, consumption and trade for India and the U.S. were estimated by comparing baseline projections to their respective quantities with increased Indian cotton MSP.

Estimation Results

Results are reported as percentage annual changes over the period 2018/19 – 2028/29 in terms of changes from baseline estimates. Tables 1 and 2 report the results of cotton production, consumption, trade and prices of the two scenarios for India and the U.S., respectively.

[3] See Pan and Hudson (2011) for more detail on the Global Fibers Model.

As expected, increased Indian cotton MSP will have positive impacts on the Indian cotton production. Compared to the projected baseline, simulation results showed that the MSP price change increased the cotton production by an average rate of 2.2% per year through 2028/29. As the principal raw material required by the cotton textile industry, the sharp MSP increase makes Indian raw cotton relatively expensive with respect to international prices. As a result, the Indian mill consumption dropped over the projection period with an average of 0.8% each year relative to the baseline. On the other hand, ending stocks were positively impacted by this policy; it was projected to increase by 1.8% per year through 2028/29. With the increased cotton production, it was estimated to have the largest impact on the cotton exports. Simulation results showed that the recent increase in cotton MSP would result in an average 17.9% increase in Indian cotton exports with respect to the projected baseline, and reached an average of 6 million bales over the projection period. Consequently, A-Index was projected to be lower by 1.3% from Indian cotton MSP increase in the first year, and continued to decline over the rest of the projection period with an average of 2.6% each year relative to the baseline.

In the United States, the increase in Indian cotton MSP showed positive impact on the U.S. cotton mill use and the average rate was minimal over the entire period (around 0.1% on average). The U.S. cotton production and exports were estimated to experience a downward trend over the entire period and were projected to decrease by 0.6% and 0.8% per year, respectively, through 2028/29. Over the same time period that A-Index was declining, the U.S. cotton farm price was negatively impacted and was projected to decline by 2.2% per year through the 10-year projection period. Overall, the combination of declining in the U.S. cotton production, exports and farm price led to an increase in ending stocks, higher by an average 0.9% than the baseline.

Conclusion

With the recent sharp increase in MSP, the analysis results suggest substantial impacts on the Indian cotton market and prices. Compared to the projected baseline, the MSP price change increased the cotton production by an average rate of 2.2% above the baseline, which further facilitated cotton exports by an annual average of 17.9% above the baseline through 2027/28. As a result of increased cotton exports from India, A-Index was estimated to decrease at an annual average rate of 2.6% per year through 2028/29. In addition, our simulation results indicated that the policy change would only have minor impacts on the U.S. cotton production, consumption, ending stocks and exports (all less than 1%, on average). The U.S. cotton farm price was negatively impacted and was projected to decline by an average of 2.2% per year through 2028/29.

References

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Table 1. Estimated Effects of Increased Indian cotton Minimum Support Price (MSP) on the Indian Cotton Market

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Average
Production	---------- 1,000 bales ----------											
Baseline	**28570.98**	**28951.46**	**29799.14**	**30518.76**	**31314.57**	**32004.17**	**32673.14**	**33368.92**	**33959.01**	**34571.27**	**35125.17**	**31896.05**
Increasing MSP	28651.06	29280.11	30203.22	31018.38	31912.30	32711.37	33495.24	34305.18	35023.65	35769.85	36386.24	32614.24
% change	0.28%	1.14%	1.36%	1.64%	1.91%	2.21%	2.52%	2.81%	3.14%	3.47%	3.59%	2.19%
Consumption	**25194.34**	**25590.62**	**26129.80**	**26718.47**	**27204.26**	**27546.79**	**27890.28**	**28349.96**	**28879.27**	**29151.02**	**29429.27**	**27462.19**
Increasing MSP	25063.69	25421.22	25933.39	26507.60	26984.28	27307.54	27639.90	28088.90	28612.86	28881.98	29153.34	27235.88
% change	-0.52%	-0.66%	-0.75%	-0.79%	-0.81%	-0.87%	-0.90%	-0.92%	-0.92%	-0.92%	-0.94%	-0.82%
Ending Stock	**13256.33**	**13278.64**	**11583.00**	**9951.08**	**8514.01**	**7485.86**	**6977.88**	**6864.70**	**6885.11**	**7199.55**	**7801.99**	**9072.56**
Increasing MSP	13289.88	13375.76	11703.67	10087.24	8655.75	7627.89	7127.92	7028.08	7065.72	7403.81	8031.73	9217.95
% change	0.25%	0.73%	1.04%	1.37%	1.66%	1.90%	2.15%	2.38%	2.62%	2.84%	2.94%	1.81%
Exports	**4257.58**	**4445.20**	**6929.04**	**6955.47**	**6963.97**	**6598.80**	**6398.72**	**6120.09**	**5995.58**	**5898.86**	**5847.77**	**6037.37**
Increasing MSP	4501.64	4992.25	7649.30	7814.80	7954.81	7733.54	7658.73	7504.54	7513.49	7549.62	7567.91	7130.97
% change	5.73%	12.31%	10.39%	12.35%	14.23%	17.20%	19.69%	22.62%	25.32%	27.98%	29.42%	17.93%
	---------- U.S. Cents/lb ----------											
A-Index	**92.47**	**93.66**	**94.53**	**95.27**	**96.70**	**97.79**	**98.57**	**99.30**	**100.40**	**101.22**	**101.60**	**97.41**
Increasing MSP	91.30	91.24	92.51	92.92	94.20	95.35	95.83	96.46	97.27	98.02	98.73	94.89
% change	-1.27%	-2.58%	-2.14%	-2.46%	-2.58%	-2.50%	-2.78%	-2.87%	-3.11%	-3.16%	-2.82%	-2.57%

Table 2. Estimated Effects of Increased Indian cotton Minimum Support Price (MSP) on the U.S. Cotton Market

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Average
Production	---------- 1,000 bales ----------											
Baseline	**18313.98**	**17495.46**	**17594.05**	**17957.03**	**18126.96**	**18525.13**	**18877.69**	**19165.29**	**19434.61**	**19855.55**	**20216.13**	**18687.44**
Increasing MSP	18313.98	17447.50	17485.78	17852.54	18011.86	18396.55	18747.82	19020.86	19279.80	19682.10	20031.81	18570.05
% change	0.00%	-0.27%	-0.62%	-0.58%	-0.63%	-0.69%	-0.69%	-0.75%	-0.80%	-0.87%	-0.91%	-0.63%
Consumption	**3422.84**	**3531.00**	**3484.47**	**3504.60**	**3476.35**	**3526.23**	**3530.11**	**3538.99**	**3467.49**	**3489.95**	**3509.84**	**3498.35**
Increasing MSP	3426.62	3536.70	3489.84	3509.56	3480.70	3531.10	3535.42	3544.45	3472.90	3494.77	3513.68	3503.25
% change	0.11%	0.16%	0.15%	0.14%	0.12%	0.14%	0.15%	0.15%	0.16%	0.14%	0.11%	0.14%
Ending Stock	**4060.24**	**4086.79**	**3614.59**	**3594.05**	**3564.89**	**3584.12**	**3611.91**	**3642.23**	**3662.78**	**3688.88**	**3722.42**	**3712.08**
Increasing MSP	4078.38	4124.53	3646.38	3629.13	3601.43	3618.81	3649.50	3680.27	3703.28	3729.17	3757.32	3747.11
% change	0.45%	0.92%	0.88%	0.98%	1.02%	0.97%	1.04%	1.04%	1.11%	1.09%	0.94%	0.94%
Exports	**15086.30**	**14204.59**	**14851.16**	**14744.46**	**14953.27**	**15256.89**	**15599.49**	**15877.60**	**16229.86**	**16625.85**	**16961.18**	**15490.06**
Increasing MSP	15064.38	14129.17	14739.08	14628.19	14828.25	15120.89	15457.18	15722.49	16062.23	16442.36	16772.90	15360.65
% change	-0.15%	-0.53%	-0.75%	-0.79%	-0.84%	-0.89%	-0.91%	-0.98%	-1.03%	-1.10%	-1.11%	-0.84%
	---------- U.S. Cents/lb ----------											
Farm Price	**74.09**	**75.13**	**75.95**	**76.74**	**78.17**	**79.14**	**79.89**	**80.53**	**81.72**	**82.53**	**82.91**	**78.80**
Increasing MSP	73.25	73.43	74.58	75.14	76.47	77.50	78.03	78.61	79.61	80.39	81.03	77.10
% change	-1.13%	-2.27%	-1.80%	-2.08%	-2.18%	-2.08%	-2.32%	-2.38%	-2.58%	-2.59%	-2.26%	-2.16%