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U.S. COTTON MARKETS**

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A circular graphic featuring a cotton boll in the foreground and a globe in the background, both rendered in a soft, semi-transparent style.

**Cotton Economics
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Domestic subsidies for cotton and other commodities have been a major topic of interest, especially during the Doha Round of the World Trade Organization trade negotiations. Many developing countries have insisted that domestic subsidies in countries like the United States represent significant trade barriers because they lower world price below their cost of production. India, Brazil, and other developing countries intimate that unless these domestic subsidies are lowered, they are unwilling to provide any more market access concessions in trade negotiations.

However, these countries utilize domestic subsidy programs as well (see Hudson et al., 2009 for a complete description of foreign subsidies). India, for example, uses a minimum support price (MSP) program, which is similar to the U.S. Commodity Credit Corporation non-recourse loan program. The Government of India (GOI) annually sets the MSP for each growth region, which represents the price at which the government will purchase seed cotton from farmers. The Cotton Corporation of India (CCI) is then responsible for executing the MSP program.

Generally, the MSPs are based on the expected cost of production and are not linked to the market price of cotton (lint). The market price for seed cotton is typically above the MSP, but in September 2008, the GOI announced a significant increase in the MSP of seed cotton, with the increase ranging from 26 – 48% depending on the variety (FAS, 2008). Based on Adams (2009), that level of MSP equates to about \$0.72/lb (lint equivalent) for the most commonly produced varieties of cotton. Compared with international prices of \$0.55 to \$0.58/lb, the MSP is above international prices and therefore may have a direct

impact on production and trade flows. In fact, in 2008, the CCI was authorized to purchase as much as 11.7 million bales from the Indian crop in order to maintain the MSP.

The purpose of this paper is to examine the impacts of the increase in the Indian MSP on global and U.S. cotton markets in terms of both price and cotton trade. We utilized a partial equilibrium structural econometric model of the world fiber market developed by the Cotton Economics Research Institute at Texas Tech University (Pan et al.). The structural model first establishes a baseline forecast of the world cotton market along with individual countries and production regions under the *status quo* of agricultural policy as it exists today and based on macroeconomic assumptions developed by *Global Insight*. Next, a new projection of world cotton markets was developed under the increased MSP for India with all other policies and macroeconomic assumptions remaining as in the baseline.

Specifically, we assumed that the seed cotton MSP is set at 27,500 rupees/metric ton, with a gin turnout rate of 35% to develop projections of lint cotton production and trade. These values were assumed to be held constant over the next five years (the forecast period).

Based on these simulations, we developed projections of impacts of the MSP increase on world cotton production, consumption, price, and trade.

The impacts of the increase in the MSP on the world cotton market are shown in Table 1. The top set of numbers represent the world cotton price (A-Index) with no increase in the MSP above pre-2008 levels (the “No MSP Increase” scenario) as well as the projected world price under the increased MSP (the “MSP Increase” scenario). Finally, the percentage difference between the two prices shows the relative impact of the MSP increase. For example, in 2009/10, the projected A-Index without an increase in the MSP was 66.41 cents/lb, while the projected A-Index after the increase in the MSP was 62.32

cents/lb, or a decrease in world price of 6.16%. This implies that the increase in the MSP is projected to lower world cotton price by 6.16% in 2009/10 with all other things being equal.

Over time, the impact of the increase in the MSP decreases as other countries adjust production to lower prices. But, the average impact of the increase in the MSP is about 2 cents/lb or 2.80%. Interestingly, this magnitude of change in price resulting from the increase of the MSP is approximately equal to the impact estimated for the entire U.S. cotton program (see Pan et al. for details on the U.S. program estimates). Thus, the increase in the MSP in India is anticipated to have a relevant impact on world cotton price. In India, the increase in the MSP is expected to lower India's domestic price by an average 2.59% over the five year period (Table 2). These lower domestic prices do not substantially affect domestic mill use, but do increase net exports by an average 11.11%. At the same time, cotton area is expected to increase an average 1.56% and cotton production increase an average 2.88% over the forecast period.

The increase in the MSP in India is expected to decrease farm price in the U.S. by an average 2.48% over the forecast period (Table 3), and result in relatively small decreases in acreage, production, mill use and exports, and increase ending stocks by a small amount. The likely net effect of the MSP on the U.S. is to increase the amount of government payments by an approximate average \$190 million per year to the cotton sector to offset declining farm prices.

References

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Table 1. Estimated Effects of India MSP Increase on World Cotton Market

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | Average |
|----------------------|------------------------------|----------------|----------------|----------------|----------------|----------------|
| A-index | ----- Cents/lb ----- | | | | | |
| without MSP increase | 66.41 | 66.94 | 69.92 | 71.12 | 71.87 | 69.25 |
| with MSP increase | 62.32 | 65.35 | 68.22 | 69.80 | 70.99 | 67.34 |
| % Change | -6.16% | -2.36% | -2.42% | -1.86% | -1.22% | -2.80% |
| Area | ----- 000 Acres ----- | | | | | |
| without MSP increase | 75955.36 | 76656.97 | 76998.14 | 78210.95 | 79302.00 | 77424.69 |
| with MSP increase | 76224.63 | 76702.38 | 77144.60 | 78385.35 | 79467.46 | 77584.88 |
| % Change | 0.35% | 0.06% | 0.19% | 0.22% | 0.21% | 0.21% |
| Production | ----- 000 Bales ----- | | | | | |
| without MSP increase | 109493.88 | 112100.97 | 113883.76 | 118003.07 | 121848.48 | 115066.03 |
| with MSP increase | 110347.20 | 112225.56 | 114138.24 | 118233.93 | 122046.41 | 115398.27 |
| % Change | 0.78% | 0.11% | 0.22% | 0.20% | 0.16% | 0.29% |
| Mill Use | ----- 000 Bales ----- | | | | | |
| without MSP increase | 109963.38 | 110215.57 | 115614.61 | 119708.76 | 120857.21 | 115271.91 |
| with MSP increase | 110481.31 | 115871.24 | 119985.30 | 121129.13 | 124884.69 | 118470.33 |
| % Change | 0.47% | 5.13% | 3.78% | 1.19% | 3.33% | 2.78% |
| Net Trade | ----- 000 Bales ----- | | | | | |
| without MSP increase | 33289.39 | 35207.22 | 36777.74 | 38011.29 | 39478.40 | 36552.81 |
| with MSP increase | 33553.86 | 35461.65 | 37054.14 | 38300.38 | 39770.46 | 36828.10 |
| % Change | 0.79% | 0.72% | 0.75% | 0.76% | 0.74% | 0.75% |

Table 2. Estimated Effects of India MSP Increase on India Cotton Market

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | Average |
|----------------------|-------------------------------|----------|----------|----------|----------|----------|
| Market Price | ----- Cents/lb ----- | | | | | |
| without MSP increase | 63.43 | 64.06 | 66.72 | 68.47 | 70.70 | 66.68 |
| with MSP increase | 59.82 | 62.66 | 65.23 | 67.29 | 69.90 | 64.98 |
| % Change | -5.69% | -2.18% | -2.24% | -1.72% | -1.13% | -2.59% |
| Area | ----- 000 Acres ----- | | | | | |
| without MSP increase | 22563.74 | 22608.20 | 22708.88 | 22863.44 | 23000.28 | 22748.91 |
| with MSP increase | 22820.67 | 22942.05 | 23101.67 | 23266.34 | 23386.79 | 23103.51 |
| % Change | 1.14% | 1.48% | 1.73% | 1.76% | 1.68% | 1.56% |
| Yield | ----- Bales/Acre ----- | | | | | |
| without MSP increase | 0.97 | 1.00 | 1.03 | 1.05 | 1.09 | 1.03 |
| with MSP increase | 1.00 | 1.01 | 1.04 | 1.06 | 1.09 | 1.04 |
| % Change | 2.65% | 1.33% | 1.20% | 0.79% | 0.54% | 1.30% |
| Production | ----- 000 Bales ----- | | | | | |
| without MSP increase | 21877.19 | 22508.23 | 23277.87 | 24076.37 | 24995.97 | 23347.13 |
| with MSP increase | 22712.23 | 23145.12 | 23964.10 | 24694.50 | 25554.37 | 24014.07 |
| % Change | 3.82% | 2.83% | 2.95% | 2.57% | 2.23% | 2.88% |
| Mill Use | ----- 000 Bales ----- | | | | | |
| without MSP increase | 17278.34 | 17706.77 | 18468.41 | 19217.96 | 20023.89 | 18539.07 |
| with MSP increase | 17340.04 | 17760.18 | 18520.86 | 19265.51 | 20063.82 | 18590.08 |
| % Change | 0.36% | 0.30% | 0.28% | 0.25% | 0.20% | 0.28% |
| Net Export | ----- 000 Bales ----- | | | | | |
| without MSP increase | 5088.74 | 5299.04 | 5355.86 | 5393.97 | 5536.35 | 5334.79 |
| with MSP increase | 5747.01 | 5865.61 | 5978.81 | 5967.80 | 6069.47 | 5925.74 |
| % Change | 12.94% | 10.69% | 11.63% | 10.64% | 9.63% | 11.11% |
| Ending Stock | ----- 000 Bales ----- | | | | | |
| without MSP increase | 9104.70 | 8607.12 | 8060.71 | 7525.16 | 6960.90 | 8051.72 |
| with MSP increase | 9219.77 | 8739.10 | 8203.52 | 7664.71 | 7085.79 | 8182.58 |
| % Change | 1.26% | 1.53% | 1.77% | 1.85% | 1.79% | 1.64% |

Table 3. Estimated Effects of India MSP Increase on U.S. Cotton Market

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | Average |
|----------------------|------------------------|----------|----------|----------|----------|----------|
| Farm Price | ----- Cents/lb ----- | | | | | |
| without MSP increase | 52.22 | 51.86 | 53.46 | 54.72 | 55.07 | 53.47 |
| with MSP increase | 49.52 | 50.71 | 52.39 | 53.77 | 54.38 | 52.16 |
| % Change | -5.17% | -2.22% | -2.00% | -1.75% | -1.24% | -2.48% |
| Area | ----- 000 Acres ----- | | | | | |
| without MSP increase | 7842.17 | 8053.56 | 8049.27 | 8020.72 | 8010.55 | 7995.25 |
| with MSP increase | 7854.51 | 7986.03 | 8019.23 | 8016.42 | 8006.84 | 7976.61 |
| % Change | 0.16% | -0.84% | -0.37% | -0.05% | -0.05% | -0.23% |
| Yield | ----- Bales/Acre ----- | | | | | |
| without MSP increase | 1.79 | 1.81 | 1.82 | 1.84 | 1.85 | 1.82 |
| with MSP increase | 1.79 | 1.81 | 1.82 | 1.83 | 1.85 | 1.82 |
| % Change | -0.03% | 0.14% | -0.18% | -0.12% | -0.03% | -0.04% |
| Production | ----- 000 Bales ----- | | | | | |
| without MSP increase | 14042.57 | 14566.72 | 14663.53 | 14721.61 | 14819.51 | 14562.79 |
| with MSP increase | 14060.85 | 14465.02 | 14582.39 | 14696.57 | 14808.12 | 14522.59 |
| % Change | 0.13% | -0.70% | -0.55% | -0.17% | -0.08% | -0.27% |
| Mill Use | ----- 000 Bales ----- | | | | | |
| without MSP increase | 3896.91 | 3703.24 | 3579.97 | 3553.41 | 3461.99 | 3639.11 |
| with MSP increase | 3896.63 | 3701.95 | 3578.86 | 3552.82 | 3462.29 | 3638.51 |
| % Change | -0.01% | -0.03% | -0.03% | -0.02% | 0.01% | -0.02% |
| Export | ----- 000 Bales ----- | | | | | |
| without MSP increase | 10644.57 | 11024.68 | 11267.07 | 11339.24 | 11492.12 | 11153.54 |
| with MSP increase | 10580.22 | 10964.87 | 11194.55 | 11319.67 | 11489.37 | 11109.74 |
| % Change | -0.60% | -0.54% | -0.64% | -0.17% | -0.02% | -0.40% |
| Ending Stock | ----- 000 Bales ----- | | | | | |
| without MSP increase | 6488.77 | 6377.82 | 6245.19 | 6125.80 | 6042.60 | 6256.03 |
| with MSP increase | 6572.56 | 6421.33 | 6281.66 | 6157.58 | 6065.46 | 6299.72 |
| % Change | 1.29% | 0.68% | 0.58% | 0.52% | 0.38% | 0.69% |