

Perspectives on Cotton Global Trade Reforms

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Abstract

World cotton prices fell to nearly unprecedented levels during the 2001/02 marketing year, causing distress to cotton producers and exporters worldwide. In a number of developing countries highly dependent on cotton for export earnings or where cotton is the primary cash crop, this distress was particularly acute. Global trade barriers to cotton are widespread, leading to some concern about the relationship between these trade barriers and global welfare. In particular, with the Doha Development Agenda's negotiations underway, discussion about the impact of trade barriers on the cotton sectors of developing countries has become more intense. A static computable general equilibrium (CGE) model finds that removing cotton tariffs and other trade barriers to cotton by all countries increases global welfare but only slightly. Global welfare improves with liberalization, and the welfare of developing countries in aggregate also improves. However, while some developing countries demonstrably benefit, not all developing countries see welfare gains. In addition to welfare, removing all global cotton trade barriers increases world trade in cotton.

Introduction

World commodity prices have been relatively low since the late 1990's, but while prices of some major field crops recovered in 2002, the price of cotton remained well below recent averages (Figure 1). At the beginning of the 2002/03 marketing year, the world price of cotton was 33 percent below its 1990-94 average. In contrast, soybean prices were only 4 percent lower, while corn prices were 5 percent above their 1990-94 average and wheat prices were 24 percent higher (MacDonald and Meyer, 2002). Trade barriers to cotton are widespread and their removal would be expected to improve global welfare.

This study uses an 18 commodity, 40 country/region global computable general equilibrium model to assess world impacts of reducing global trade barriers to cotton and their effects on global welfare and trade. The model is static in its specification and uses the GTAP database, version 5.2. Aggregation was designed to account for major cotton producing countries—such as the United States and China—as well as major cotton producing regions—such as the European Union and sub-Saharan Africa.

Background

From the late 1990's to 2001, commodity markets were affected by the macroeconomic environment, particularly by the strong U.S. dollar, and a slowing world economy. According to the International Monetary Fund, world economic growth averaged 3.9 percent annually during 1994-97 but slowed with the Asian financial crisis and declined to 2.2 percent in 2001. On the other hand, as global commodity stocks shrank in 2002, prices of most major field crops recovered. Cotton prices, however, lagged the rebound for other commodities.

The impact of falling cotton prices was felt particularly acutely in a number of sub-Saharan African and Central Asian countries. A number of countries depend on cotton for a significant share of their export earnings, with Burkina Faso the most dependent in this sense, with cotton exports averaging almost 60 percent of its total exports during 1997-99. Chad, Mali, Benin, and Uzbekistan all had cotton accounting for at least 40 percent of export earnings. While cotton's share of exports is lower for other West African producers, in many cases cotton is one of the primary cash crops for farmers, giving it a large role in these countries' agricultural sectors (Levin, 2000 and Badiane et al 2002). During the 2001/02 marketing year, the vulnerability of low-income African countries became a concern, with advocacy groups such as OXFAM publicizing the plight of cotton farmers in these countries (Oxfam, 2002).

Global Trade Barriers for Cotton

Applied tariffs on cotton are often low, given cotton's role as an input for textile and apparel production. According to UNCTAD's TRAINS database, global applied cotton tariffs weighted by imports averaged only 2 percent. Bound tariffs are higher, with an import-weighted average of 21 percent (AMAD database). In recent years various countries, Brazil and India for example, have raised their cotton import tariffs, suggesting that the applied tariffs in UNCTAD's database might not be appropriate for a longer-run analysis. The GTAP database embodies levels of protection higher than simple applied tariffs, taking into account other trade barriers (such as sanitary and phyto-sanitary measures) and giving a better measure of cotton trade policy. The average global level of import protection for cotton in the GTAP database is 8.0 percent.

This study assumes global export subsidies are negligible. In the GTAP database export subsidies are negligible, in part because it captures the policies in 1997 as the base year. China began subsidizing cotton exports in 1998/99, and none of the countries with subsidy reduction obligations have used subsidies in recent years. Only 4 WTO members have export subsidy reduction obligations under the URAA (Brazil, Colombia, Israel, and South Africa) and none have subsidized since 1995. China subsidized cotton exports in the years before it joined the WTO, sometimes explicitly, and other times in the form of tax rebates and reductions targeted at Xinjiang, the province supplying virtually all of

China's cotton exports. As part of China's WTO accession, it agreed to eliminate all export subsidies for a wide range of commodities, including cotton.

Previous Research

Previous research on the impact of trade liberalization on the global cotton sector has been limited. Westcott and Price (2001) used USDA's FAPSIM model in an analysis of the impact of removing the U.S. marketing loan programs for all commodities. However, this study did not account for trade liberalization and did not estimate welfare effects.

The International Monetary Fund (IMF, 2002) used a computable general equilibrium model to simulate the impact of removing distortions for all commodities. This study, and a more recent version of the same analysis by Tokarick (2003), found negative welfare effects for some developing countries. Food-importing developing countries had welfare reductions in some cases although globally welfare improved by \$100 billion, or 0.3 percent. However, these studies did not account for trade liberalization and included other policies and commodities.

Likewise, USDA's Market and Trade Economics Division (MTED, 2001) used a CGE framework to examine the impact of removing all global policy distortions in agriculture, and found global welfare improved by about 0.2 percent, slightly less than the IMF and Tokarick.

The ICAC (2002) focused on cotton, but did not examine trade liberalization at all. Like Westcott and Price, the ICAC did not include welfare analysis.

Methodology

In this study the liberalization of world cotton markets is simulated in a CGE framework with the assumption that all tariffs are set zero and all non-tariff barriers are removed. All export subsidies are removed, but, as noted earlier, export subsidies in the GTAP database 5.2 are negligible. The model includes 18 commodities and 40 countries/regions. The model is static in its specification and uses the GTAP database, version 5.2.

Results

Removing all global import barriers to cotton trade raises global welfare (measured by Equivalent Variation, see ERS, 2001 for discussion). Global welfare increases by 0.03 percent, with welfare improving in both developed and less developed countries (Table 1). Welfare improves more for less developed countries than for developed countries, rising 0.05 percent. World cotton trade rises 9 percent, although there is little effect on other commodities.

Table 1. Changes Due to Cotton Trade Liberalization:

	Percent
Global Welfare	0.03
Developed Country Welfare	0.03
Less Developed Country Welfare	0.05
World Cotton Trade	9.08

Examining the welfare changes for specific countries provides some insight into the sources of welfare gains and losses (Table 2). Generally speaking, exporting countries enjoy welfare gains.

The world's largest exporter is the United States, but cotton trade is a very small part of the economy; therefore, its welfare gain is slight, 0.04 percent. The largest welfare gains are achieved by developing country cotton exporters. The Former Soviet Union is an aggregation of importing Russia and exporting Central Asian countries like Uzbekistan (the GTAP database does not disaggregate these regions), and is the world's second largest exporter. The Former Soviet Union's welfare increases by more than the United States. West Africa is the third largest exporter in the world, and the one most economically dependent on cotton exports.

Welfare gains in West and Southern Africa range from 2 to 3 percent, far exceeding changes experienced in any other region. This is consistent with the expectations of many analysts, but indicates the dangers of generalization. This analysis strongly suggests that many sub-Saharan African countries would experience substantial economic gains if world cotton markets were liberalized, and these are some of the world's poorest countries. However, many other countries, including developing countries, would actually suffer setbacks due to liberalization according to this analysis, and in aggregate the gains to developing countries would be small, about 0.05percent.

Table 2. Welfare Changes Due to Cotton Trade Liberalization

	Percent
Central America	-0.11
USA	0.04
EU	0.03
Southeast Asia	0.19
China	-1.37
India	0.13
Former Soviet Union	0.22
Peru	-0.36
West Africa	1.87
Southern Africa	3.31

China's welfare declines, as does welfare in a number of Latin American countries. Two examples, Peru and Central America are included in the table. Japan and Korea also

suffer very slight declines in welfare. This is a very heterogeneous group of countries, and generalizations about sources of welfare losses are difficult to draw, but it is worth noting that not all developing countries benefit. In most cases, it probably reflects distortions in other sectors of their economies that impede realization of the gains from global liberalization. As has been widely noted (e.g. IMF 2002) developing countries have many trade barriers among themselves, and a variety of preferential trading relationships. This further complicates generalizations about the impact of cotton trade liberalization. While global trade increases by a non-trivial amount, and welfare increases slightly, there are cases among both importing and exporting countries where welfare declines.

Conclusions

While some observers have suggested that barriers to cotton trade have large welfare implications, other analyses, including this study, suggest otherwise. Liberalizing world cotton trade has only small welfare effects, and not all developing countries benefit. However, global trade increases by a non-trivial amount, and certain developing countries experience more pronounced welfare gains.

References

American Embassy, Beijing, *Cotton: Annual Report*. Various years.

Badiane, O., Ghura, D., Goreux, L., and Masson, P., "Cotton Sector Strategies in West and Central Africa," World Bank Policy Research Working Paper 2867. July 2002.

Economic Research Service, Market and Trade Economics Division, *The Road Ahead: Agricultural Policy Reform in the WTO—Summary Report*, Agricultural Economic Report No. 797, U.S. Department of Agriculture, Economic Research Service. January 2001.

International Cotton Advisory Committee, *Production and Trade Policies Affecting the Cotton Industry*. July 2002.

International Monetary Fund, "How Do Industrial Country Agricultural Policies Affect Developing Countries?," *World Economic Outlook*. September 2002.

Levin, A., "Francophone West Africa Cotton Update," *2000 Proceedings Beltwide Cotton Conferences*, National Cotton Council. 2002.

MacDonald, S. and Meyer, L., "Price Recovery Elusive for Cotton," *Agricultural Outlook*, U.S. Department of Agriculture, Economic Research Service. November 2002.

MacDonald, S. "The New Agricultural Trade Negotiations: Background and Issues for the U.S. Cotton Sector," *Cotton and Wool Situation and Outlook Yearbook*, CWS-2000, U.S. Department of Agriculture, Economic Research Service. November 2000.

Meyer, L., and MacDonald, S., *Cotton: Background and Issues for Farm Legislation*, CWS-0601-01, U.S. Department of Agriculture, Economic Research Service. July 2001.

Oxfam, *Cultivating Poverty*, Oxfam Briefing Paper 30. 2002.

Tokarick, S., “Measuring the Impact of Distortions in Agricultural Trade in Partial and General Equilibrium,” Eastern Economics Association meetings. February 2003.

Westcott, P. and Price, M., *Analysis of the U.S. Commodity Loan Program with Marketing Loan Provisions*, ERS Agricultural Economic Report No. 801, U.S. Department of Agriculture, Economic Research Service. April 2001.

Figure 1. World Cotton Price, 1963-2002

