
Cotton and the Developing Countries: Implications for Development

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When it comes to cotton, rich countries' trade policies negate their development policies. Subsidies paid to producers in rich countries depress world prices and cut into the livelihood of millions in developing countries, where cotton is a typical, and often dominant, smallholder crop.

Cotton's share in world trade is small, but it is an important cash crop for several poor countries at both farm and national levels. For four West African producers (Benin, Burkina Faso, Chad and Mali), for example, cotton represented 20–44 percent of total merchandise exports in 2001–03. The corresponding figures for Uzbekistan, Tajikistan, and Turkmenistan were 32, 15, and 12 percent, respectively. Cotton's contribution to the Gross Domestic Product (GDP) of these countries has been substantial, ranging from 2.4 percent (Chad) to 6.1 percent (Mali). The per capita GDP in most of these cotton-dependent countries is well below \$500 (table 1).

This note analyzes the effects of government interventions in the global cotton market.

The market setting

More than two thirds of the world's cotton is produced by developing countries. Over the last four decades production grew at an annual rate of 1.8 percent, reaching 25 million tons in 2005 (from 10.2 million tons in 1960). Most of the growth came from China and India, which tripled and doubled their production during the period. Other countries that significantly increased their shares of the world cotton market were Greece, Pakistan, and Turkey. Some new entrants also contributed to this growth. Australia, for example, which produced only 2,000 tons of cotton in 1960, averaged 650,000 tons during the late 1990s. Francophone Africa produced less than 100,000 tons in the 1960s and now produces ten times as much. The United States and the Central Asian republics of the former Soviet Union, the two dominant cotton producers during the 1960s, have maintained their output levels at about 3.5 and 1.5 million tons, respectively, effectively halving their market shares. A number of Central American countries that used to produce almost 250,000 tons of the fiber now produce virtually none.

A recent survey of costs of cotton production found that Brazil, China, and Pakistan are the lowest-cost producers, followed by Australia, Turkey, and West Africa. High-cost producers are Israel, Syria and the United States (U.S.). In line with most primary commodities, real prices for cotton have declined considerably during the last 40 years; they are currently half their 1960 levels. There is no doubt

Table 1. Cotton's importance to West African and Central Asian economies, 2001-03 Averages

	Cotton exports			Merchandise exports (US\$ millions)	Per capita GDP (2000 US\$)
	U.S.\$ millions	Percentage of merchandise exports	Percentage of GDP		
<i>West and Central Africa</i>					
Burkina Faso	105	44.6	3.3	235	245
Chad	53	29.4	2.4	182	381
Benin	126	27.7	4.5	455	289
Mali	193	22.7	6.1	849	203
Togo	42	8.9	2.7	467	251
<i>Central Asia</i>					
Uzbekistan	727	22.1	4.4	3,295	591
Tajikistan	103	14.1	7.7	729	190
Kyrgyzstan	36	7	2.2	524	295
Turkmenistan	139	4.5	3	3,065	859
Azerbaijan	22	1.2	0.3	1,906	788
Kazakhstan	86	0.8	0.3	10,412	1,534

Source: Food and Agriculture Organization (FAOSTAT) and World Bank (World Development Indicators).

that the low prices seen recently have been influenced by the support provided by major players, which we now examine.

The policy setting

Rich countries protect their cotton industries through domestic subsidies which averaged \$4 billion annually between 1997 and 2004 (table 2). Cotton subsidies in the United States have a long history dating from the commodity programs of the Great Depression. The specific provisions of these programs—including the one for cotton—change with each “Farm Bill” passed by the Congress (Farm Bills are introduced approximately every 4 to 5 years), but their chief objective has remained largely unchanged: to transfer income from taxpayers (and to a lesser extent consumers) to commodity producers.

The main channels of support to U.S. cotton producers are price-based payments, decoupled payments, crop insurance, and countercyclical payments (table 3). U.S. cotton users and exporters also receive some support.

- Price-based payments (also known as loan rate payments) are designed to compensate cotton growers for the difference between the market price and the target price when the latter exceeds the former.
- Decoupled payments (renamed direct payments in the 2002 Farm Bill) are predetermined annual payments calculated on the basis of area historically

used for cotton production. Direct payments were introduced with the 1996 Farm Bill to compensate producers for “losses” following the elimination of deficiency payments.

- Crop insurance is a subsidy to weather-related crop failures.
- Countercyclical payments were introduced in 1998 (as “emergency payments”) to compensate producers for income “lost” due to low commodity prices. They were made permanent under the 2002 Farm Bill. Payments to cotton exporters and domestic end-users (also known as export subsidies or Step-2 payments) are made when domestic prices exceed world prices, so that U.S. exporters maintain their competitiveness. Implicitly, cotton exporters receive another subsidy through the export credit guarantee program which insures importers of U.S. cotton against potential defaults.

In addition to these transfers there are numerous other publicly funded programs—among them research and extension services and subsidized irrigation.

The European Union’s (EU) budgetary expenditure on the cotton sector ranged between €740 million and €903 million in 1996–2000, implying that, on average, EU cotton producers received more than twice the world price (table 2). EU cotton producers receive support even in periods of high prices, since the budgetary allocation to the cotton sector must be disbursed. They received approximately the same level of support in 1995 and 2002, for example, although cotton prices in 1995 were twice as high as in 2002.

The European Union has made adjustments to its cotton program, among them a 1999 reform that effectively capped the budgetary expenditures allocated to the industry. A major reinstrumentation of the EU cotton program will take place in 2006. Under the Luxembourg Council’s decision of April 22, 2004 (based on a September 2003 proposal), an estimated €700 million is expected to fund two support measures,

Table 2. Estimated government assistance to cotton producers, 1997–2004

	1997	1998	1999	2000	2001	2002	2003	2004
U.S. \$ millions								
US	1,163	1,947	3,432	2,149	3,937	3,075	1,021	2,244
China	2,013	2,648	1,534	1,900	1,217	800	1,303	1,145
Greece	659	660	596	537	735	718	761	836
Spain	211	204	199	179	245	239	233	230
Turkey	—	220	199	106	59	57	22	115
Brazil	29	52	44	44	10	—	—	—
Mexico	13	15	28	23	18	7	6	49
Egypt	290	—	20	14	23	33	9	89

Notes:— No data

Source: International Cotton Advisory committee; US Department of Agriculture; European Union.

Table 3. Budgetary transfers to the U.S. cotton sector, 1995–1996 to 2002–2003

(millions of U.S. dollars)

	1995	1996	1997	1998	1999	2000	2001	2002
Coupled	3	0	28	535	1,613	563	2,507	248
PFC/DP	0	599	597	637	614	575	474	914
Emergency/CCP	0	0	0	316	613	613	524	1,264
Insurance	180	157	148	151	170	162	236	194
Step-2	34	3	390	308	422	236	196	455
TOTAL	217	759	1,163	1,947	3,432	2,149	3,937	3,075

Note: PFC = production flexibility contracts. DP = direct payments. CCP = countercyclical payments.

Source: U.S. Department of Agriculture.

with 65 percent of the support taking the form of a single decoupled payment and the remaining 35 percent taking the form of an area payment. Eligibility for the decoupled payment is limited to growers who produced cotton during the three-year period 1999–2001. The area payment will be given for a maximum area of 380,000 hectares in Greece, 85,000 hectares in Spain, and 360 hectares in Portugal and will be proportionately reduced if claims exceed the maximum area allocated to each country. To receive decoupled payments, cotton growers must keep the land in good agricultural use. To receive area payments they must plant (but not necessarily produce) cotton.

Impact of policies

Numerous models have evaluated the impact of policies on the cotton market, with considerable variation in the results. The International Cotton Advisory Committee (ICAC), for example, concluded from a study based on a short-run partial equilibrium model that in the absence of direct subsidies, average cotton prices during the 2000–01 season would have been 30 percent higher than what they actually were. The ICAC study acknowledged that while the removal of subsidies would result in lower production in the countries that use them (and hence higher prices in the short term), the impact would be partially offset by shifting production to nonsubsidizing countries in the medium to longer terms. Goreux (2003), who extended the ICAC model by replacing the base year with average subsidies for 1998–2002, estimated that in the absence of support the world price of cotton would have been between 3 and 13 percent higher during that period, depending on the value of demand and supply elasticities. Gilson and others (2004), using subsidy data for 1999 and a model similar to Goreux's, estimated that removal of subsidies by the China, the European Union, and the United States, and would increase the world price of cotton by 18 percent.

Reeves and others (2001) used a simple Computable General Equilibrium (CGE) model to find that removal of production and export subsidies by the United States

and the European Union would reduce U.S. cotton production by 20 percent and exports by 50 percent, with much higher figures for the European Union. They also estimated that if support were not in place, world cotton prices would be 10.7 percent higher compared to their 2001–02 levels. FAPRI (2002) found that under global liberalization (removal of trade barriers and domestic support in all commodity sectors), the world price for cotton would increase over the baseline scenario by an average of 12.7 percent over the 10-year period. Based largely on the Food Agricultural Policy Research Institute's (FAPRI) data and assumptions, Sumner (2003) estimated that had all U.S. cotton subsidies not been in place during the marketing years 1999–2002, the world price of cotton would have been almost 13 percent higher.

Based on a partial equilibrium model, Tokarick (2003) found that multilateral trade liberalization in all agricultural markets (including cotton) is expected to induce a 2.8 percent increase in the world price of cotton. Tokarick also calculated that global reforms will generate annual gains of \$95 million. Poonyth and others (2004) estimated that removal of cotton subsidies (as reported in the World Trade Organization (WTO) notifications) would increase the world price of cotton between 3.1 and 4.8 percent, depending on the assumed value of demand and supply elasticities. Shepherd (2004) and Pan and others (2004) found a negligible impact of subsidies on the world price of cotton.

The models reviewed here produced highly divergent results, partly reflecting the structure of the models and the assumed elasticities. But a number of other reasons are at play as well. First, there are differences in the level and structure of support. For example, some models incorporate China's support to its cotton sector

Table 4. Effect of removal of distortions in world cotton market, 2003-2004 to 2011-2012

	(percentage change over baseline)					
	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	Average ^a
World Price	15.6	13.7	13	12.2	11.7	12.7
Exports						
Africa	12.1	15.1	14	13.1	12.3	12.6
Australia	3.9	3	2.7	2.3	2.1	2.7
United States	-8.4	-6.6	-4.0	-1.5	0.9	-3.5
Uzbekistan	5.4	6.9	6.7	6.4	6.2	6
World	3.9	5.6	6.2	6.7	7.3	5.8
Production						
United States	-18.3	-7.9	-5.9	-4.1	-2.3	-6.7
European Union	-77.4	-77.7	-78.3	-78.8	-79.0	-70.5
Uzbekistan	3.1	4.7	4.6	4.4	4.2	4
Africa	4.5	7.5	7.1	6.7	6.3	6

Note: Average is taken over the 10-year period 2001-2002 to 2010-2011.

Source: Food and Agriculture Policy Research Institute (2002).

and hence model its removal; others do not. Second, there are differences in the underlying scenarios. Some models assume liberalization in all commodity markets, whereas others assume liberalization in the cotton sector only. Third, the models use different base years and hence different levels of subsidies. For example, support in the United States during 1999 was three times as high as in 1997.

Setting all differences aside, however, and taking a simple average over all models, it appears that in the absence of support the world cotton price would have been about 10 percent higher than it actually was. Applying that simple average to the cotton-producing countries of Francophone Africa, those countries lost approximately \$150 million annually in export earnings due to subsidies.

Not all models reported gainers and losers from the removal of cotton subsidies. The most complete analysis in that respect is offered by the FAPRI study. FAPRI concluded that the largest gains would go to Africa, which would increase its exports by an average of 12.6 percent (table 4). Exports from Uzbekistan and Australia would increase by 6.0 and 2.7 percent, respectively, while exports from the United States would decline by 3.5 percent. The most dramatic impact would come on the production side: the European Union's cotton output would decline by more than 70 percent.

In addition to low prices and a skewing of export shares, support by major players has triggered several noteworthy reactions:

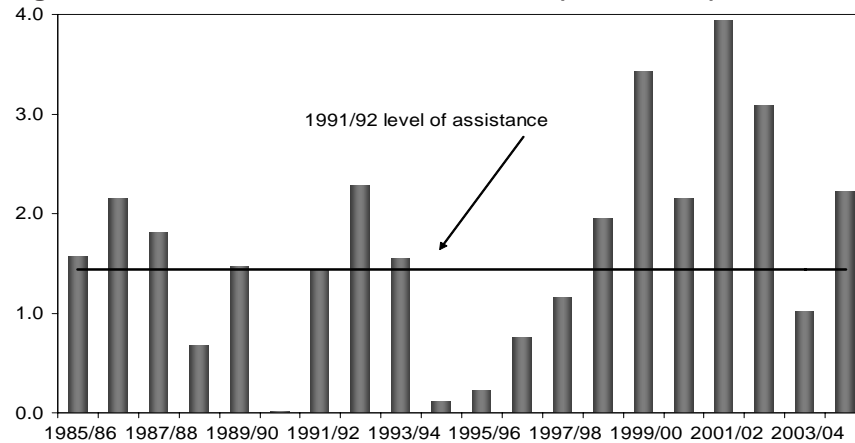
- Many cotton-producing countries have introduced “reactive support.” For example, the Arab Republic of Egypt, Brazil, India, Mexico and Turkey provided \$0.5 billion in support for their producers in 2001–02.
- Brazil initiated a WTO consultation, claiming losses to its cotton exports from subsidies by the United States. WTO recently ruled in Brazil's favor.
- Four West African cotton producers (Benin, Burkina Faso, Chad, and Mali) are pressing the WTO for accelerated removal of support for cotton (in the so-called West Africa Cotton Sector Initiative).

Implications of cotton policies

Brazil vs. the United States

On September 27, 2002, Brazil requested consultation with the United States regarding U.S. subsidies to cotton producers. On March 18, 2003, the Dispute Settlement Body of the WTO established a panel to examine the issue, and on April 26, 2004, the WTO issued an interim ruling in favor of Brazil. The final ruling (issued on September 8, 2004) concluded that “the United States is under the obligation to take appropriate steps to remove the adverse effects or...withdraw the subsidy” (WTO 2004a).

Brazil argued that U.S. cotton subsidies were inconsistent with provisions of the Agreement on Subsidies and Countervailing Measures, the Agreement on Agriculture, and the General Agreement on Tariffs and Trade and were causing

Figure 1. Assistance to US Cotton Growers (US \$ billion)

Source: US Department of Agriculture

“serious prejudice to the interests of Brazil” because of a “significant price depression and price suppression” (WTO 2002). Brazil’s claims can be summarized as follows (Schnepf 2004):

- During the four marketing years from 1999 to 2002 U.S. domestic support to cotton was in excess of the support provided in 1992, the limit year under the WTO Agreement on Subsidies and Countervailing Measures (figure 1).
- U.S. export subsidies (export credit guarantees and the so-called step-2 payments) violated the Agreement on Agriculture.
- Direct payments to U.S. producers did not qualify for exemption from reduction commitments as decoupled support, because of the associated prohibition against the planting of fruits and vegetables (i.e. direct payments should have been reported under the *Amber Box* instead of the *Green Box* category).

Using the econometric model developed by FAPRI discussed earlier, Brazil claimed that the U.S. subsidies induced a 41 percent increase in U.S. cotton exports, reducing the world price of cotton by 12.6 percent and causing an estimated injury to Brazil of more than \$600 million for 2001 alone. The United States appealed the case but the original ruling remained by and large intact. The U.S. announced that it would eliminate the export subsidies. However, it remains unclear what, if any, steps it will take regarding containing the overall level of subsidies and the inappropriate placing of direct payments in the *Amber Box*.

The ruling was issued against the background of the ongoing critical agricultural negotiations, the expiration of the peace clause, the more assertive stance taken by the G-20, and the West African sectoral initiative on cotton (see following section).

The ruling has numerous implications for the WTO and the Doha Development Agenda and for developing countries and international institutions (Baffes 2005c):

- As the first case of a developing country challenging an OECD farm subsidy program in the WTO, it may set a precedent. If further cases follow, there may be a shift in the focus of WTO activities from negotiation to litigation.
- The way to avoid a significant increase in such disputes is to make significant progress in the Doha Development Agenda. Hence, the ruling may help agencies such as the EU Commission and the U.S. Trade Representative's Office confront domestic protectionist lobbies.
- The ruling strengthens the claims of many developing countries that OECD subsidies distort global commodity markets and depress world prices.
- This dispute spotlights the importance of models analyzing the effects of subsidies on world prices and export shares, making model developers more accountable for the analysis. The ruling reveals the importance and weaknesses of current measures of support and the differences in WTO, U.S., and EU definitions of "decoupled support."

West African cotton sector initiative

On May 16, 2003, four West African cotton producing countries (Benin, Burkina Faso, Chad, and Mali) submitted a joint proposal to the WTO demanding removal of support to the cotton sector by the United States, China, and the European Union and compensation for damages until full removal of support. The West African countries were aided in this move, often referred to as the "cotton initiative," by IDEAS, a Geneva-based NGO funded by the Swiss government.

The four countries argued that subsidies cost them an estimated \$250 million in export earnings during the 2001/02 marketing season—\$1 billion when the indirect effects of these subsidies were considered (cotton prices averaged \$0.82 a kilogram in October 2001, the lowest since November 1972 with the exception of August 1986). Because the standard WTO remedies (compensation through supplementary concessions or imposition of countervailing duties) were not feasible, the proposal called for "transitional...financial compensation...to offset the injury caused by support of production and export." The compensation would be proportional to the subsidies, declining and ending as the subsidies were reduced and abolished. The proposal argued that the direct and indirect effects of support for cotton production should be taken into account when determining compensation and that "the unit amount and the total amount of subsidies should be taken into account when dividing the compensation among countries which subsidize production" (WTO 2003).

The initiative received considerable attention during the Cancun Ministerial. The director general of WTO urged ministers to consider the proposal "seriously." While numerous countries were sympathetic, there were doubts whether it would

benefit the Doha Development Agenda to treat one commodity differently from others. Furthermore, it soon became apparent that direct compensation was unlikely. The inability to deal effectively with the initiative was one reason for the failure to reach agreement in Cancun.

It was finally determined that while the trade part of the request (subsidies) fell within WTO's mandate, the development part of the request (compensation) should be handled by the multilateral institutions in coordination with the concerned governments. To that end, at a WTO-sponsored conference on March 23–24, 2004, in Cotonou, Benin, both bilateral and multilateral donors reaffirmed their willingness to deal with the development part of the cotton initiative.

On August 1, 2004, the WTO General Council reached a decision to proceed with multilateral trade negotiations, emphasizing that the theme should be addressed “ambitiously, expeditiously, and specifically” (WTO 2004b). The director general was instructed to consult with international organizations, including the Bretton Woods institutions, the Food and Agriculture Organization, and the International Trade Center, to direct existing programs and any additional resources toward development of the economies where cotton is of vital importance. Progress on the “cotton initiative” is being monitored at WTO meetings following the establishment of the sub-committee on cotton (WTO 2004c).

Policy changes

As mentioned above, the European Union reformed its cotton policy recently by replacing its price-support mechanism with two new support measures. With the new support structure expected to be in place until 2011, EU cotton producers will still receive subsidies, albeit with a less distorting effect on production and trade. The 2002 U.S. Farm Bill, on the other hand, which will be in place until 2007 guarantees U.S. cotton producers high prices until 2007. However, part of this subsidy may be removed or altered in response to the recent WTO ruling.

Several cotton-producing countries (especially in Sub-Saharan Africa) that had been taxing their cotton sectors undertook substantial policy reforms in the 1990s to increase efficiency. Although these reforms have been attributed—correctly—to conditions imposed by the World Bank and the International Monetary Fund in the context of structural adjustment programs, the reforms were the only feasible alternative in most cases. Faced with falling world cotton prices and plagued by inefficiencies, poor management, and often outright corruption, the parastatals that handled the marketing and trade of cotton had been staggering under huge debts, remaining afloat only through infusions of state capital. Some had even gone bankrupt.

Substantial reforms were undertaken during the mid-1990s by Tanzania, Uganda, Zambia, and Zimbabwe (Baffes 2001). With the exception of Tanzania (where the reform process was never completed), the reforms generated a considerable supply

response. Growers now receive a higher share of export prices and timely payments. There have been numerous reports that the quality of cotton declined after the reforms, but these reports have not been substantiated. West African cotton producers are also contemplating reforms. Central Asian cotton producers, mainly Uzbekistan, still intervene heavily in their cotton sectors; reforms are unlikely to take place soon.

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