

The Agreement on Textiles and Clothing: Impact on U.S. Cotton

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Abstract: During the past 40 years, world textile trade has been in large part governed by the Multifiber Arrangement (MFA) and its predecessor agreements. Starting in 2005, in accordance with World Trade Organization (WTO) obligations, these restrictions must end, and the import restrictions developing countries have imposed largely must end as well. A dynamic computable general equilibrium (CGE) model finds that trade reform improves welfare in every region of the world, and causes world textile, apparel, and cotton production to rise. In the long run, world textile and apparel prices fall, while the world price of cotton rises. U.S. production declines for cotton as well as for textiles and apparel, although U.S. cotton exports rise.

Keywords: Cotton, textiles, apparel, trade, policy, quotas, Multifiber Arrangement, WTO

The Uruguay Round's Agreement on Textiles and Clothing (ATC) mandates the end of the quotas established under the MFA and also the reciprocal termination of the restrictions imposed by developing countries on their imports of textiles and clothing. By 2005, restrictions that do not meet General Agreement on Tariffs and Textiles (GATT) standards are supposed to be phased out, and the strengthened dispute-settlement mechanism the Uruguay Round introduced to the World Trade Organization increases the likelihood that the agreed liberalization will in fact occur.

Methodology

The study is conducted in an intertemporal general equilibrium framework. The detailed description of the model can be found in Diao and Somwaru (2000, 2001). The data are from the GTAP *database* version 5, pre-release 3 (GTAP, 2001), including data about trade flows, production, and consumption in each country/region in 1997. The original data set includes 66 countries/regions and 57 aggregate sectors. For this study, we aggregate the data into 13 countries/regions (listed below) and 7 sectors, including cotton, other crops, livestock, processed food, textiles, apparel, and an aggregated manufacturing and services sector.

The MFA phaseout and other changes in trade policy can be expected to affect textile and apparel (T&A) trade directly. Changes in a country's T&A exports can also affect the country's domestic economy as well as the world economy through input-output, supply-demand, and price linkages.

The study tries to capture such linkages among economic activities, and hence to evaluate the general equilibrium impact of the MFA phaseout on the world economy. The intertemporal specification of the model captures the benefits not only due to resource re-allocation but also the dynamic gains due to growth in investment and capital flows.

In the study, we first try to distinguish the exporting countries by whether or not trade is restrained under the MFA. Specifically, among the countries/regions whose exports are restrained by the MFA, we include: (1) China, (2) India, (3) the region of the other South and Southeast Asian countries, (4) the Middle East, (5) the region of former Soviet Union countries, and (6) the region of the Latin American countries (excluding Mexico and the Caribbean countries). We also include (7) the region of North African and East European countries and (8) the region of other African countries, representing the developing countries free from restraint in exporting to the European Union (EU); and (9) the region of Mexico and Caribbean countries, representing the countries free from restraint in the North American markets.

The study also includes the following industrial countries as major importers and exporters in the world, including two restraining regions: (10) North America (U.S. and Canada), (11) the EU, and two non-restraining regions: (12) Australia and New Zealand, and (13) Japan, Taiwan, Hong Kong, and Korea. As Taiwan, Hong Kong, and Korea currently have unused quotas in their apparel exports, we treat them as developed countries in the model.

This study abstracts from the question of whether importing or exporting countries capture the rents from MFA quotas,

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and assumes these rents are dissipated by rent-seeking behavior and inefficiency. That is, the MFA does not create either a price gap between domestic and border prices or quota rents for the restraining countries. Instead, the restraints cause difficulty for some developing countries to export their textile and apparel products to the restraining countries (North America and the EU in the model), and hence lower the efficiency of their exports. In a post MFA world, exports of textile and apparel products become relatively easy for the developing countries (included in countries/regions 1 through 6), and hence exports grow.

We simulate the possible effect of MFA phaseout by improving the efficiency of textile and apparel exports from the countries/regions restrained by MFA (countries/regions 1 through 6). Technically, we exogenously increase the efficiency coefficient in the export function by 0.3 percent annually. Moreover, we assume other trade barriers (represented by tariff equivalent rates) on textile and apparel imports are reduced by 30–40 percent in all countries (including developing countries restrained by MFA), and the reduced tariff equivalent rates are close to each country's average tariff rate for other manufacturing imports. Integrating trade barrier reductions in the developing countries into the simulation means the simulation includes the reciprocal trade reform the ATC introduced with the MFA phaseout. Finally, based on an extension of Frankel and Romer's (1999) work we analyzed the relationship between T&A trade and national income of 91 countries over 37 years. Based on our econometric analysis, we exogenously increase the growth of T&A trade in the simulation.

Freer Trade Brings More Trade

World T&A trade increases in the model due to the MFA phaseout and other reforms under the ATC, increased efficiency, and increased growth in the T&A sectors. Compared with the base, world T&A trade increases by 5–16 percent annually in the simulated time period of 25 years. Consistent with the trend in the historical data and the higher protection generally in place for apparel compared with textiles, the model results show that world apparel trade will increase twice as fast as textile trade in the post-MFA world.

It is no surprise that the increase in world trade is mainly due to more apparel exports from developing countries, as their exports become more efficient in the model. As liberalization improves trade opportunities, exports from countries formerly restricted by the MFA grow, but exports decline from regional trading partners that received preferential access from the U.S. and the EU before the MFA phaseout. By the end of the simulation period, the volume of China's apparel exports rises 37 percent due to liberalization, India's 36 percent, and the rest of Asia's 42 percent. Mexico and the Caribbean suffer an 8-percent decline as the value of their North American Free Trade Agreement (NAFTA) and

Caribbean Basin Initiative preferences decline, and Eastern Europe and North Africa's apparel export volume falls 6 percent as competition in the EU increases.

Welfare Gains: Some Gain More Than Others

From the world's perspective, a more liberalized textile and apparel sector implies more efficient allocation of resources along with the "dynamic," long-term effects from increased savings and investment, resulting in higher global welfare. We use the well-accepted equivalent variation (often referred to as the willingness to pay) to measure the social welfare gains or losses in the post-MFA world. In a static analysis, the welfare effects are often measured by using the status-quo (pre-reform) prices as the base, and addresses the question: what income would be equivalent to the change brought about by, for example, liberalizing world T&A trade (Varian, 1984). We borrow this concept in our dynamic analysis: in other words, we evaluate the welfare effects within each time period and the entire time path by summing the discounted value of this measure over time.

As expected, most countries whose textile and apparel exports are restrained by the MFA show post-MFA gains (table B-1). Global welfare increases by \$103 billion in the short run (5 years) and by \$204 billion in the long run (25 years). In percentage terms, the long-run global increase in welfare is not large, 0.9 percent. However, due to the difference in production and trade structure among countries, changes in global T&A trade policy can affect the rest of economy differentially in different countries. For this reason, the welfare gains can be different among countries that benefit directly from the MFA phaseout. For example, textile and apparel exports increase the most in the region of Other Asian countries. However, from a welfare point of view, China gains the most of any exporter both in absolute value and in percent of total consumers' expenditures. One reason is that the T&A sector contributed more to GDP in China than in the other countries.

The benefits of trade liberalization are clearly not confined to exporters. The Former Soviet Union (FSU) has welfare gains comparable to China's in the long run, despite being a significant T&A importer and having a very low GDP share for T&A. After the United States, the FSU has the largest ratio of net T&A imports to consumption in the base period. With its large T&A deficit, and relatively low degree of protection (compared with developing Asian T&A exporters), the FSU is well placed to enjoy the benefits of increased efficiency in other countries as the MFA restraints are eliminated. Not surprisingly, the largest increase in apparel consumption of any region is in the FSU, a 12-percent increase in the value of consumer demand.

The regions achieving the smallest welfare gains are the preferential trading partners of the U.S. and the EU. Mexico and the Caribbean and Eastern Europe and North Africa are

Table B-1--Welfare effect in the simulation

	Year 5		Year 10		Year 15		Year 20	
	Billion \$	Percent	Billion \$	Percent	Billion \$	Percent	Billion \$	Percent
Developing countries:								
(1) China	19.50	3.76	21.96	4.24	22.95	4.43	23.67	4.57
(2) India	7.30	2.39	8.39	2.75	9.30	3.05	10.79	3.53
(3) Other Asia	7.53	1.34	8.43	1.50	9.13	1.62	10.22	1.81
(4) Middle East	9.24	1.65	10.52	1.88	11.62	2.08	13.43	2.40
(5) Former Soviet Union	15.33	3.32	17.48	3.79	19.01	4.12	20.88	4.52
(6) Other Latin America	17.71	1.44	20.47	1.66	22.93	1.86	26.88	2.18
(7) Eastern Europe	4.45	1.06	5.34	1.27	6.02	1.43	6.93	1.65
(8) Africa	9.01	1.69	10.06	1.89	10.96	2.06	12.39	2.33
(9) Mexico and Caribbean	1.93	0.50	2.33	0.60	2.70	0.69	3.29	0.84
Industrial countries:								
(10) North America	0.86	0.01	4.24	0.06	7.22	0.10	11.53	0.16
(11) EU	5.60	0.08	9.98	0.14	13.87	0.20	19.39	0.28
(12) Australia and New Zealand	0.33	0.09	0.56	0.16	0.77	0.21	1.08	0.30
(13) Japan, Korea and Taiwan	4.33	0.12	7.11	0.20	9.56	0.27	13.11	0.37

Source: Economic Research Service, USDA.

the only developing regions where T&A output declines (table B-2) as trade reform under the ATC erases the benefit of their current preferential access to the largest import markets. Nonetheless, ATC reform raises welfare in these regions substantially more than it raises welfare in any developed region. In the long run, Mexico's welfare improves by 1 percent and Eastern Europe's by nearly 2 percent. A mix of larger output gains in non-T&A sectors, apparel consumption responses surpassing developed countries, and apparel consumption shares surpassing developed countries led to welfare increases several times as large as those in any developed region.

Production Effects

Globally, the value of textile and apparel production is higher after liberalization, each 2.5 percent higher than the

Table B-2—Percent changes, T&A output, year 25 (long-run)

	Textiles	Apparel
Developing countries:		
China	8.96	16.32
India	7.97	14.78
Other Asia	11.69	19.13
Middle East	9.91	14.75
Former Soviet Union	6.35	6.82
Other Latin America	4.21	4.99
East Europe	-2.61	-4.14
Other Africa	0.14	1.67
Mexico and Caribbean	-2.33	-5.08
Industrial countries:		
U.S. and Canada	-2.14	-1.75
European Union	-2.09	-1.86
Australia and New Zealand	-3.82	-2.31
Japan, Korea and Taiwan	2.36	-0.48

Source: Economic Research Service, USDA.

base year by year 25 of the simulation. The value of cotton production is 3.5 percent higher. However, prices for textiles and apparel are lower in the simulation, and cotton prices higher, so that in quantity terms global textile and apparel production rises at least twice as much as cotton production in the long run.

With fewer trade barriers, efficiency increases and the real price of apparel falls 4 percent in the long run. Textile prices fall by a smaller amount—2 percent in the long run—since pre-reform barriers are lower for textiles than apparel. Cotton prices rise globally by about 2 percent.

While world cotton production is relatively unchanged (about 2 percent higher), various regions have larger or smaller output, with the largest decline occurring in the United States. The volume of U.S. cotton production falls 1 percent by the end of the simulation, about half as much as the decline in U.S. textile production. The largest increases in cotton production occur in China and Other Asia. The only non-U.S. region where cotton output declines is the EU. The largest increase in cotton production is in China, up 9 percent in the long run, followed by a 6-percent increase in the Middle East.

ATC Reduces U.S. Output

With reduced import protection under the ATC, and with increased export efficiency in countries previously constrained by the MFA, the U.S. T&A trade deficit registers a substantial increase with reform. Consumption of apparel increases by about 7 percent as world prices fall and incomes rise, but the U.S. textile industry contracts by 2 percent as textile imports rise and the U.S. apparel industry shrinks.

With the decline in output, the U.S. textile industry's demand for cotton decreases, helping reduce U.S. cotton

production 1 percent. This decline contrasts with an increase foreseen in U.S. cotton production due to the Uruguay Round Agreements (URA) in at least one earlier study using partial equilibrium analysis (USDA, 1994). Two important differences between the assumptions of this study and the earlier USDA study are that, 1) this study includes China in the WTO for the purposes of T&A trade, and that, 2) other, non-T&A aspects of the URA are not incorporated in this study. An important set of policies not included here are changes in agriculture under the URA not implemented as of 1997. In addition, any changes in China's agricultural policy that might be associated with its WTO accession are not incorporated. This study was an attempt to isolate the impact of the MFA and other T&A trade barriers, not an attempt to do a complete URA or China accession analysis.

U.S. welfare increases due to ATC reform in this study despite the declines in textile, apparel, and cotton production as these declines are more than offset by gains in other sectors of the economy. In agriculture, the output of other crops and livestock increases due to the indirect effects of the ATC reforms, and U.S. GDP increases as the rest of the economy's growth more than offsets the reduction of textile and apparel value-added. U.S. welfare is also improved by increased access to lower-priced apparel.

Conclusions

Liberalization of world T&A trade would enhance global welfare slightly, and prove particularly beneficial to developing countries, with China and the FSU achieving the largest gains. Some apparel exporting regions that now have preferential access to developed country markets would suffer a reduction in T&A output as a result of expanded access for countries like China and India, but would see increased welfare despite the setbacks in this sector. While Mexico and Eastern Europe would see a smaller increase in welfare than any developing region, their welfare is still estimated to

improve more than in any developed region. World production of textiles, apparel, and cotton would rise, but prices of textiles and apparel would fall. The United States would benefit the least of any region from liberalization under the ATC, but would see welfare improve slightly despite lower output of textiles, apparel, and cotton.

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