

# **Agricultural Trade and the Doha Round: Lessons from Commodity Studies**

John C. Beghin and Ataman Aksoy

**Briefing Paper 03-BP 42**  
July 2003

**Center for Agricultural and Rural Development  
Iowa State University  
Ames, Iowa 50011-1070  
[www.card.iastate.edu](http://www.card.iastate.edu)**

*John Beghin is the Marlin Cole Professor of Economics at Iowa State University. He is head of the Trade and Agricultural Policy Division at the Center for Agricultural and Rural Development, and co-director of the Food and Agricultural Policy Research Institute at Iowa State. He was a visiting researcher at the Institut National de Recherche Agronomique, Paris-Grignon when this paper was written. He may be contacted by e-mail at [beghin@iastate.edu](mailto:beghin@iastate.edu), or by telephone at 515-294-5811.*

*Ataman Aksoy is a senior economic advisor at The World Bank. He may be reached by e-mail at [maksoy@worldbank.org](mailto:maksoy@worldbank.org) or by telephone at 202-473-9720.*

*The views expressed should not be attributed to the institutions with which the authors are affiliated. The authors thank J. Baffes, J-C. Bureau, U. Dadush, N. Diop, B. Hoekman, D. Mitchell, J. Nash, and D. van der Mensbrugge for comments on earlier drafts and discussions. This paper was prepared for presentation at the World Bank's Annual Bank Conference on Development Economics-Europe, Paris, May 15-16, 2003.*

The Center for Agricultural and Rural Development (CARD) is a public policy research center founded in 1958 in the College of Agriculture at Iowa State University. CARD conducts economic analysis for agricultural, food, and environmental policy. This publication is available on the CARD website: [www.card.iastate.edu](http://www.card.iastate.edu). Permission is granted to reproduce this information with appropriate attribution to the authors, CARD, and Iowa State University.

Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, sex, marital status, disability, or status as a U.S. Vietnam Era Veteran. Any persons having inquiries concerning this may contact the Director of Equal Opportunity and Diversity, 1350 Beardshear Hall, 515-294-7612.

## Executive Summary

While global analytical approaches to agricultural trade liberalization yield large gains for most economies, there are substantial variations in the policy regimes across commodities. To clarify the multiplicity of distortions and impacts, the World Bank's Trade Department undertook a series of commodity studies. The studies highlight the important challenges faced by negotiating countries in the Doha Round of the World Trade Organization (WTO) trade negotiations. The studies provide a sharper look at the North-South dimensions of the agricultural trade debate, with the North's trade barriers, domestic support, and tariff escalation. They also underscore the South-South challenges on border protection and the reduced rural income opportunities for the lowest-income countries due to policies in higher-income countries that depress world prices. Agricultural trade liberalization would induce significant price increases for most commodities. The studies identify the detrimental effects of multilateral trade liberalization for some countries because of lost preferential trade agreements and higher prices on net consumers of commodities. Given the complexity of specific issues in agriculture, as well as the North-South and South-South dimensions of distortions, a global solution would be required to liberalize these markets. Rather than being self-contained, agricultural trade negotiations should involve concessions on other sectors and issues (services and intellectual property rights for example) to identify overall reform packages palatable to all parties.

**Keywords:** agricultural policy, commodities, Doha Round, trade negotiations, WTO.

## **AGRICULTURAL TRADE AND THE DOHA ROUND: LESSONS FROM COMMODITY STUDIES**

### **Introduction**

Agricultural support policies maintained by many OECD (Organization for Economic Cooperation and Development) countries impose considerable costs to taxpayers. There are three major types of instruments used to protect agriculture: trade protection that ensures that domestic producer prices exceed international prices (so-called market price support), which accounts for about 62 percent of total protection in the OECD; direct production-related subsidies; and general support that is not directly linked to production, for example, research, training, marketing support, and infrastructure. The average annual support to agriculture in OECD member countries reached \$330 billion during the 1999-2001 period, or 1.3 percent of OECD member GDP. As a result, prices received by OECD farmers were on average 31 percent above world prices (measured at the border). (The average given here dissimulates a large variation among OECD member countries and across commodities.)

Agricultural trade regimes are much more complex than those that apply to the manufacturing sector. In many industrial countries, including the European Union and the United States, almost half the tariff lines are specific, and many lines change with product prices and seasons. Almost 24 percent of domestic production in OECD countries is protected by tariff rate quotas (TRQs), which cannot easily be converted into tariff equivalents. The tariff peaks are extremely high, and tariffs escalate when countries give processed products even more protection; many of these cases are not included in the measures of support mentioned previously. Policymakers in many developing countries also use the major instruments to ensure high protection. Other countries use the instruments in different combinations and for different products; the interests of countries vary by product categories.

While many OECD consumers and taxpayers lose because of high agricultural prices and the need to finance subsidies, it is less well known that the incidence of the costs—and the distribution of the benefits—of these policies is regressive. The poor in Japan, Korea, and the European Union spend a larger share of their income on food than do the rich. Smaller (and mostly poorer) farmers tend to obtain a disproportionately small share of the support. In Europe, the top 25 percent of farmers in terms of size get about 75 percent of the total support (OECD 2003). The top 4 percent of farms receive 21 percent of the support (ABARE 2000). In France, Denmark, and the Netherlands, the average income of farm households is more than 50 percent above the average income of other households. The list of U.S. recipients of agricultural subsidies in 2001 includes David Rockefeller and Ted Turner.

The total welfare cost of agricultural policies is even greater because of the policies' distortionary nature. One dimension of that cost is one of the focal points of this paper—the negative spillover effects of OECD agricultural policies on developing countries. Much analysis has been devoted to assessing the magnitude of the aggregate or global gains that would result from agricultural trade liberalization. The consensus is that this would yield large gains for most economies. Developing countries have a comparative advantage in producing many of the agricultural products that are protected in OECD countries and would expand their agriculture with trade liberalization.

To obtain a better understanding of the multiplicity of policy distortions and potential impacts across and within developing countries of deep agricultural trade policy reforms, The World Bank commissioned a number of detailed studies that focus on specific commodities. The work is continuing. This paper reports a number of the preliminary findings emerging from completed studies on cotton, dairy, groundnuts, rice, and sugar.<sup>1</sup> These specific commodities were chosen because they are important for different sets of developing countries and illustrate the diversity of interests that exist. Thus, African countries have a strong interest in groundnuts and cotton; Asian countries are major (potential) players in rice; Cairns group members and India have strong interests in dairy; and a number of Latin American, African, and Asian economies have an interest in sugar.

The studies shed light on the magnitude of intervention in the North for some products (e.g., sugar), the importance of reducing border protection in the South (e.g., for groundnuts), and, more generally, the impact of agricultural policies on rural incomes in the least-developed countries (LDCs) (e.g., for cotton and groundnuts in Africa). The studies also assess the potential detrimental effects of global trade liberalization for some developing countries. Losses may be incurred because of preference erosion (e.g., in the case of sugar) or because of higher global prices for net importers of certain commodities (e.g., rice in some LDCs). Finally, the studies provide information on the potential distributional effects of global policy reforms both across and within countries and illustrate that the interests and countries affected are very different depending on the crop.

The commodity studies complement and refine aggregate assessments of trade liberalization that are carried out using global simulation models.<sup>2</sup> These global models are essential to gauging aggregate welfare and trade effects of agricultural policies but are constrained by the lack of detailed, up-to-date policy coverage and product disaggregation. By contrast, the commodity studies take into account the latest policy developments in these markets, such as the new U.S. farm bill, Europe's common agricultural policy (CAP) reform, and the implementation of preferential and regional trade agreements (Everything But Arms [EBA] and the North America Free Trade Agreement [NAFTA]). The level of product disaggregation (single commodity versus aggregate crops) also helps to clearly identify potential winners and losers in liberalized markets.

The studies also allow more detailed consideration of the unexpected consequences of protection, including the emergence of substitute products and the distortion of downstream product-using markets. Further, they provide firmer grounds to derive practical policy recommendations within the context of global reform efforts. The studies are forward looking and capture important emerging trends that will reshape these markets and provide new opportunities and challenges to developing countries beyond the timeframe of the Doha Round of the World Trade Organization (WTO).

We first present key emerging patterns and findings that are common across several of the commodities analyzed. We then highlight a number of commodity-specific findings that are pertinent to the Doha negotiations. We end with some concluding comments that focus on the policy challenges facing the WTO trade negotiations. We

summarize major findings, organized by commodity, in Table 1. The individual studies are referenced at the end of the paper and are available from the authors upon request.<sup>3</sup>

### **Emerging Common Findings**

Most of the analyzed commodity markets are artificially thin; that is, they are characterized by small trade volumes and a small number of agents in the market, leading to high variability of price and trade flows. There are two major reasons for this lack of market depth that are relevant to policy. First and foremost, large trade distortions impede trade flows, depress world prices, and discourage market entry. Border barriers are high in most of the markets studied, except cotton, in both developed (the United States, the European Union, Japan, Canada, Switzerland, and Norway) and developing countries, where many middle-income countries have implemented significant protection. For example, the global trade-weighted average tariff for all types of rice is 43 percent, and it reaches 217 percent for Japonica rice!<sup>4</sup> As can be seen from Table 1, trade barriers are high in many of the markets studied.

Export subsidies (e.g., E.U. dairy subsidies), when present, have a similar qualitative effect, helping to depress world prices and inhibit entry by inducing pro-cyclical surplus production by noncompetitive and often large producers. In practice, the effects of export subsidies have been smaller than those of tariffs and TRQ schemes (such as in the cases of dairy and sugar), partly because of export subsidy disciplines introduced in the 1990s as the result of the Uruguay Round Agreement on Agriculture (URAA). Many domestic subsidies in OECD countries (e.g., U.S. cotton subsidies) are also countercyclical in nature. Moreover, they are often large. For example, the United States provided \$3.7 billion of subsidies in 2001/02 to American cotton growers, while the European Union (Greece and Spain) provided \$0.7 billion to European growers. These subsidies account for a significant share of the value of global cotton production, which stood at \$20 billion in 2001.

The commodity studies confirm the conclusions of aggregate global models by predicting that agricultural trade liberalization will induce significant world price increases: 10 to 20 percent for cotton, 15 to 20 percent in groundnut markets, 20 to 40

**TABLE 1. Summary of key findings of commodity studies**

Commodity	Major Sources of Distortions	World Average Tariff	Domestic Support	World Price Effects of Distortion Removal
Cotton	U.S. and E.U. domestic subsidies, Small trade distortions. Sporadic support in China. Indirect tax via Agreement on Textiles and Clothing. "Reactive" support in India, Brazil, Turkey, Mexico, Egypt caused by low prices.	5.2% (average MFN 1995-98 HS52). <i>Source:</i> Hoekman, Ng, and Olarreaga 2002.	\$5.3 billion worldwide 2001/02 (direct income and price support). <i>Source:</i> Baffes 2003.	Increase of 10-20%.
Dairy and Products	TRQs with high out-of-quota tariffs, export subsidies, domestic subsidies in Quad <sup>b</sup> . TRQ and domestic support in Korea. Trade barriers in China and India.	29.4% (average MFN 1995-98 HS04). <i>Source:</i> Hoekman, Ng, and Olarreaga 2002.	\$39.4 billion (2001 PSE for OECD countries). <i>Source:</i> OECD 2002. \$11.56 billion (average 1995-1998). <i>Source:</i> WTO 2000.	Increase of 20-40% for milk, cheese, milk powder, casein, dry-whey.
Groundnuts and Products	Trade distortions in China and India. Redundant tariffs in U.S. Former U.S. peanut program but much reduced distortion with 2002 farm bill.	12.7 % groundnuts; 11.3% (groundnut oil) 5.8% (cakes). <i>Source:</i> Diop, Beghin, and Sewadeh 2003.	\$0.3 billion (2002 U.S. AMS). <i>Source:</i> Diop, Beghin, and Sewadeh 2003. \$0.35 billion (average 1995-1997). <i>Source:</i> WTO 2002.	Increase of 15-20% for groundnuts, groundnut oil and cake.
Rice	Tariff escalation by milling stage in E.U. and LCA <sup>b</sup> . Prohibitive tariffs in Japan, Korea, E.U. Tariffs in Indonesia, India, and many net importing countries outside Middle East. High tariffs on short/medium-grain rice, lower tariff on high-quality long-grain.	43% for all rice types; 217% for Japonica rice; 21% for indica rice. <i>Source:</i> Wailes 2003.	\$20.75 billion (average 1995, 1998). <i>Source:</i> WTO 2000. \$24.34 billion (2001 PSE), <i>Source:</i> OECD 2002.	Increase of 33% on average, but up to 90% for short/medium-grain rice.
Sugar	High domestic and trade policies in E.U., U.S., Japan. Trade distortions in Turkey and many countries. "Reactive" support by competitive producers caused by low prices.	26.6% (average MFN 1995-1998 HS17). <i>Source:</i> Hoekman, Ng, and Olarreaga 2002.	\$5.3 billion (average 1995-1998). <i>Source:</i> WTO 2000. \$5.2 billion (2001 PSE). <i>Source:</i> OECD 2002.	Increase of 20-40 percent depending on modeling approach.

**TABLE 1. Extended**

<b>Commodity</b>	<b>Estimated Welfare Loss<sup>a</sup></b>	<b>Winners</b>	<b>Losers</b>	<b>Notable Specifics</b>
Cotton	NA	Producers in West Africa (Mali, Benin, Chad, Burkina Faso, Togo) and Central Asia (Uzbekistan, Tajikistan, and Turkmenistan), and Australia.	U.S. and E.U. producers; Textile producers	Mature market, competition from synthetic fibers, Africa producers overcoming supply constraints; significant reform unlikely.
Dairy and Products	\$3.14 billion	Producers from Cairns groups less Canada; consumers in Quad;	Quad and Korean producers; net importing countries in Middle East and North Africa	Dynamic market with high growth potential. New trade in casein, whey, and components. Entrenched protectionist interest.
Groundnuts and Products	\$0.56 billion	Producers in West Africa, Argentina, South America, and the U.S.	China and India producers; E.U. and U.S. consumers	Mature markets, potential for rural income in LDCs. Quality issues in Africa. Feasible reforms.
Rice	\$6 billion	Producers in China, Vietnam, Thailand; Millers in Thailand, Vietnam, and the U.S. Low-quality long-grain rice consumers in Indonesia, Bangladesh, and Philippines.	Producers in Japan and Korea. Net importers of short/medium-grain rice and its consumers, especially in Asia and Middle East.	Entrenched protectionism in Japan and Korea. Unlikely reform. Mature market but most important food grain. Thin world market.
Sugar	\$4.7 billion	Producers in Brazil, Thailand, LCA, and Australia; Consumers/users in U.S., Japan, and E.U.	Producers in U.S., E.U., Japan.	Partial compensation of lost quota rent by world price increase; Unraveling protection in the US and the E.U. with NAFTA, EBA, and URAA commitments

<sup>a</sup> Welfare loss is equal to the world sum of producer surplus, consumer surplus, and tax revenues in each country, resulting from the price change.

<sup>b</sup> Quad includes Canada, the European Union, Japan, and the United States; high-income Asia includes Japan, Korea, Taiwan; Oceania includes Australia and New Zealand; LCA includes Latin and Central America.

percent in sugar and dairy, and up to 90 percent in the medium/short-grain rice market. These world-price increases are larger than those predicted by many global models, which take into account the impacts on other product markets as well as factoring market effects. Moreover, global price impacts may translate into smaller price changes in domestic markets because of imperfect pass-through due to lack of market integration in some countries (e.g., in the case of groundnuts in Africa). The existence of substitute products for most of the commodities studied—synthetic fibers for cotton, other protein sources for dairy, other oilseeds for groundnuts, intergrain competition for grains and rice, and other sweeteners for sugar—will moderate the expected price impacts. The price of these substitutes often has been distorted by either ever-creeping protectionism, as in the case of sugar and sweeteners, or because of policy goals common to substitutes, as in China’s policy to protect domestic value-added creation in oilseed sectors. With multilateral trade liberalization involving all products, the relative world prices of substitutes may not change as dramatically as suggested by the stand-alone commodity studies.

Price increases of the order predicted in the studies would greatly improve the incomes of producers of these commodities in developing countries. For example, cotton producers in Africa would increase their gross revenue from production by about 19 percent with respect to the current distorted situation if all cotton distortions were removed. World price increases would have the additional advantage of obviating the need for reactive protection of domestic markets by countries that are competitive suppliers, as is the case for sugar (Thailand and Brazil) rice (United States), and groundnuts (United States). More importantly, it would pave the way for more general liberalization of agricultural trade policies in developing countries. With higher and less volatile world prices, the provisions for anticyclical support of the type pursued by a number of countries—for example, as envisaged under the 2002 U.S. farm bill—would become less needed and, indeed, less likely to be triggered.

Of course, it is important to note that developing-country producers face more problems than the artificial depression of world prices due to trade barriers and subsidies. Many also suffer from supply-side constraints, such as inconsistent quality and infrastructure problems. These preclude a systematic presence on world markets (which

helps to explain why West African suppliers are not significant players in the global groundnut market). In many cases, additional development assistance will be needed to take full advantage of higher world prices and generate an expansion in rural incomes. Ensuring that higher global prices are passed through to farmers is also important. The experience of the cotton industry in East and West Africa shows that an appropriate policy environment combined with assistance can produce a significant supply response.

### **Relative Importance of Trade and Domestic Distortions**

The studies identify both domestic subsidies and trade distortions as factors that affect world markets and thus developing country consumers and producers. A common theme is that, in many cases, trade distortions (border barriers) are more important (distorting), with the notable exception of cotton. These findings from the commodity studies on the relative importance of the distorting impact of trade and domestic support policies corroborate the findings of Hoekman, Ng, and Olarreaga (2002), using a different approach. This suggests that priority should be given to reducing border barriers.

One reason for this finding is that border protection is more widespread (it is the primary instrument used by developing countries, where subsidies are relatively uncommon) and the level of tariffs often is very high, as previously noted. Tariffs may even be virtually prohibitive, directly blocking trade flows except those allowed under TRQ regimes (as is the case for dairy, rice, and sugar), thereby distorting markets with inefficient domestic production and penalizing consumers. The removal of tariffs on groundnut products accounts for virtually all of the expected increase in world prices (15-20 percent) and welfare (\$0.56 billion). By contrast, the U.S. peanut program, the major domestic support policy that distorts groundnut markets, affects world prices by less than 1 percent.

A second reason trade distortions are more important and should be a priority for reforms is that they underpin domestic support policies. This is the case for dairy in the Quad (United States, European Union, Japan, and Canada), rice in high-income Asia (Japan, Korea, and Taiwan), and sugar in the United States and the European Union. Domestic support programs linked to production would not be feasible (or fiscally sustainable) without trade barriers. Trade liberalization will act as a disciplining device for policies that support domestic production. The groundnut and sugar studies illustrate

this vividly. Recent policy developments under NAFTA (in the case of the United States) and the EBA initiative (in the case of the European Union), combined with commitments on market access and export subsidies under the WTO, imply that current support policies will become unsustainable. Trade barriers were an essential pillar of the U.S. peanut program to generously subsidize American growers. However, NAFTA-based removal of trade restrictions forced the United States to reform its policy. Out-of-quota peanuts from Mexico started to enter the U.S. market because the United States has been phasing out out-of-quota tariffs on agricultural commodities. Hence the tight restrictions on imports were unraveling and compromising the very survival of the program. Similar developments are taking place for sugar in the United States (again because of NAFTA) and are expected for sugar in the European Union once the barriers to imports of sugar are abolished for LDCs—as required under EBA by July 1, 2009.

Domestic support and protection policies are found to have substantial negative impacts on producers in developing countries. Thus, cotton policies in the United States, and to a lesser extent in the European Union, have displaced competitive suppliers in Africa and generated rural income losses that are comparable to the official development assistance (ODA) Africa received. For example, cotton farmers in West and Central Africa would increase their revenues by about \$250 million if U.S. cotton subsidies were abolished, which compares to total ODA of \$1.9 billion in 1999 received by the region, of which 15 to 25 percent typically goes to agricultural assistance.

Tariff escalation is widespread in the analyzed markets. Significant trade barriers in both the South and North discourage value-added production in developing economies that could be competitive on world markets (e.g., groundnut oil imports in India and China, processed rice imports in the European Union, and processed dairy imports in many countries). This tariff escalation is also present in many preferential trade agreements, which confines poor developing countries to commodity markets instead of promoting valued-added industries (e.g., the ACP [African, Caribbean, and Pacific] preferential agreements discouraging food processing). These findings support the more general pattern of tariff escalation that has been identified in the literature.

### **Welfare Effects—Significant, with Large Transfers**

Aggregate welfare effects of trade liberalization appear significant and confirm the analysis accomplished with global models. To illustrate, moving to free trade in sugar markets would result in estimated welfare gains (the world sum of producer, consumer surpluses, and tax revenues) of \$4.7 billion, 38 percent higher world sugar prices, and increased sugar trade of about 20 percent. Brazil alone would gain about \$1.6 billion (\$2.6 billion to producers minus \$1 billion to consumers). The commodity studies tend to underestimate welfare gains because efficiency gains are induced in other markets linked to these commodity markets but are not modeled explicitly.

Countrywide net welfare effects (the sum of consumer and producers surpluses and incidence on taxpayers) are significant in countries with distorted markets but are small relative to the size of transfers from consumers/taxpayers to producers in protected markets. For example, in Japan following full trade liberalization, profits in dairy production would decrease by 60 percent (or \$3.1 billion), consumers' welfare would increase by 18 percent (\$3.7 billion), and net welfare would increase by roughly 2 percent (\$0.5 billion).

The welfare effects of protection on competitive exporting countries are significant, especially given the small size of many developing economies taxed by current policies in OECD and middle-income developing countries. For example, groundnut producers in Senegal, Gambia, Nigeria, South Africa, and Malawi would gain about \$124 million in producer profits, a significant impact for these small economies, if China, India, and other countries liberalized their groundnut product markets.

### **Winners and Losers**

Agricultural trade liberalization would have winners and losers, both across and within countries (see Table 1). The studies conclude that reform mostly would reduce rural poverty in developing economies, both because the South in aggregate has a strong comparative advantage in agriculture and because the agricultural sector is important for income generation in these countries, particularly in LDCs (e.g., groundnuts in Africa, and cotton production in central Asia and Africa).

Resource reallocation within agriculture can be significant, giving rise to winners and losers within developing countries. For example, in China and India, production of

groundnut products would likely contract, but rice production and exports would expand in China, while dairy production and exports would expand in India. The liberalization of value-added activities is found to be crucial in terms of expanding employment and income opportunities beyond the farmgate. These conclusions illustrate the importance of a multi-commodity approach to reform, as gains and losses will differ by market. They also illustrate the importance of social safety nets and complementary policies.

Consumers in highly protected markets will benefit greatly from trade liberalization, as domestic (tariff inclusive) prices fall and product choice expands (e.g., this would be the case for Asian consumers of rice and dairy). With higher import unit costs, consumers in poor net-food importing countries would face higher prices if these markets were not protected prior to liberalization. In practice, these concerns have been exaggerated. For example, dairy consumption in North Africa and the Middle East would be little affected by trade liberalization because of prevailing trade barriers offsetting the potential consumer benefit of depressed world prices. With trade liberalization, world prices would rise but import tariffs would be removed. The net impact on dairy consumer prices would be negligible in this region and actually slightly positive for the Middle East as a whole (Cox and Zhu 2003). However, rice imports in the Middle East would be more affected, as lower rice tariffs prevail in this region. In the latter region, consumer prices (border prices plus tariff) would rise because the removal of small tariffs would not offset the increase in the border price.

Multilateral trade liberalization erodes benefits from preferential bilateral trade agreements and casts low-cost producers (e.g. sugar producers in Brazil and Thailand) against less-efficient producers from LDCs. How these reforms occur will have important consequences for developing countries—a South-South dimension. The best approach is coordinated global liberalization of policies. This provides the largest price increases to offset some of the lost rents. For example, world sugar price increases alone would offset about half of the lost quota rents, or \$0.45 billion, for countries that have preferential access. The analysis shows that the loss in rents would be much less than is commonly expected, because for many of the beneficiaries of preferences their high production costs eat up much of the potential benefits from their preferential access to the high-price markets. Further, the cost to the European Union and the United States of providing \$1 of

preferential access is estimated to be more than \$5, a very inefficient way to provide development assistance. Global liberalization of these primary markets should be accompanied by further effective opening of value-added markets, along with some targeted assistance to overcome the supply constraints.

### **Specific Findings from the Commodity Studies**

In addition to the foregoing broad themes that are suggested by the commodity studies, not surprisingly there are also a variety of specific findings that emerge.

#### **Cotton**

Cotton production provides an important source of rural income and exports in Africa and Central Asia. For example, in 1998/99, cotton accounted for more than 30 percent of merchandise exports in Burkina Faso, Benin, Chad, Mali, and Togo. In Uzbekistan, Tajikistan, and Turkmenistan, the corresponding figure was 32, 15, and 12 percent. A number of East African cotton producers undertook reforms during the 1990s; the higher prices generated a supply response, a remarkable achievement in an environment of declining world prices. Cotton support policies reduce world prices by some 10 percent, cutting the incomes of poor farmers in West Africa and Central and South Asia. Cotton has important poverty ramifications in these countries, as it is a cash crop. In Benin, where cotton accounts for 40 percent of exports and 7 percent of GDP, a 1-percentage-point increase in the world price of cotton would raise per capita income by one-half a percentage point and reduce the incidence of poverty by 1.5 percentage points.

The major challenge in the context of cotton is to reduce support policies, in the United States in particular. As mentioned, subsidies to cotton growers in the United States totaled \$3.7 billion during the 2001/02 season. The 2002 farm bill envisages continued transfers to cotton producers—and historically, farm bills have given more than they promise, not less. One positive factor on the policy front is that the Agreement on Textiles and Clothing (the Multifibre Arrangement's successor) implicitly taxes cotton products. Thus, the scheduled elimination of textile quotas at the end of 2004 should benefit cotton producers.

## **Dairy**

The world dairy sector exhibits the worst case of distortions of all the markets examined in the studies, with a complex system of domestic and international trade barriers, including surplus disposal, especially in the Quad countries and Korea. The Quad countries and Oceania dominate the export market. The latter is a competitive exporter with few distortions. Dairy interest groups in the Quad are entrenched, and prospects for policy reforms appear dim, especially in the European Union and Japan. Domestic price discrimination schemes in the European Union, United States, and Canada rely heavily on the ability to close borders, suggesting that the emphasis in the Doha negotiations should be on commitments to lower border protection.

Notwithstanding the highly distorted nature of the global market, dairy is a dynamic sector with much growth potential. Dairy consumption in Asia has been expanding dramatically along with income growth, urbanization, and westernization of diets. Dairy is also experiencing innovations in food processing, with new value-added opportunities in dairy-based ingredients, such as dry whey and lactose, for which trade barriers are low. Similar innovations have expanded trade opportunities for traditional milk products such as milk powder and butter oil, which are transformed into final products after importation to circumvent protection on finished products. Concentration and vertical integration in industrialized countries are also important sources of economies in procurement, processing, and logistics and foreign direct investment.

## **Groundnuts**

The groundnut market is divided into a market for edible groundnuts (confectionery processed butter and paste, an ingredient in candy items), and crushed groundnuts yielding oil and cakes used in livestock feed. African producers have potential in this sector but face challenges to becoming dependable exporters of confectionery products because of export volume volatility, inefficient processing, and uneven quality.

The policy dimension of international groundnut markets is essentially a South-South challenge. India and China constitute large, protected groundnut product markets, and low-cost producers in Argentina and sub-Saharan Africa are potential gainers from global reforms. India and China are found to have the largest distorting effects on world

prices for groundnuts, groundnut oil, and groundnut meal. Their current apparent competitiveness is artificial; free trade would make them net importers (Diop, Beghin, and Sewadeh 2003).

With trade liberalization, the bulk of world welfare gains in this market would occur with groundnuts rather than with derivative products. However, the additional liberalization of the value-added markets (groundnut oil and meal) would lead to larger welfare gains and rural income for African countries (\$72 million of aggregate welfare and \$124 million of farm profits). Consumers in OECD countries would pay higher prices for these products but with little implication for poverty effects. Consumers in India and Southern China, who partially pay the price of heavy and inefficient government intervention in the sector, would be better off.

The major challenge in successful negotiations to open groundnut product markets is to overcome entrenched protected interests in India and China. Except for the United States, the North has limited potential mercantilist interests at stake in these markets and should not be an impediment to agreement to reform. Moreover, U.S. producers would benefit from the higher world prices that would prevail under free trade, helping to offset to some extent any reduction in U.S. tariffs.

## **Rice**

Rice is the most important food grain in the world. Production and consumption are concentrated in Asia (China, India, and Indonesia). On average, consumers in low-income, food-deficit countries get 28 percent of their caloric intake from rice. The rice market is a mature market, with static demand in the North and demand in developing economies growing because of demographic factors rather than because of income growth. Prospects for growth in trade therefore rely on policy reforms.

Tariff and related border protection is very high, averaging about 40 percent globally and rising to 200 percent in some markets. Total support in Japan is a staggering 700 percent of production (at world prices). Tariff escalation is practiced systematically for rice (from paddy to milled rice) in many countries including the European Union, where the tariff on milled rice is prohibitive, except for small preferential import quotas granted to a few countries. Tariff escalation is also prevalent in Central and South America. For example, tariff on milled rice imports into the

European Union is 80 percent, compared to “only” 46 percent for brown rice. In Mexico, paddy rice enters with a 10 percent tariff, while brown and milled rice enter with a 20 percent tariff. This pattern of protection depresses world prices for milled high-quality long-grain rice relative to brown and rough rice prices and places economic hardship on the milling sectors of high-quality long-grain exporting nations such as Thailand, Vietnam, and the United States.

Following trade liberalization, rice net consumers would be negatively affected by the resulting world price increase if the new consumer price rises with the reform. This would happen whenever the current ad-valorem tariffs are lower than the potential world price increase. Many LDCs face such a prospect. Among them, African countries, other than Nigeria, Côte d’Ivoire, and Senegal, have lower consumption of rice (7 percent of average caloric intake) and would be less affected by the price increases.

## **Sugar**

The sugar market is one of the most distorted in the world. The European Union, the United States, and Japan all impose major protections, with totals equaling some \$6.4 billion per year, about the same as the value of total developing-country exports. On average, domestic producers receive more than triple the world price for their output. Among middle-income countries, Mexico, Turkey, and Poland also provide significant support to their producers.

The European Union and the United States will have to reform their sugar programs because of internal market changes and international commitments already made under EBA, NAFTA, and the URAA. Their protectionism is unraveling—another case of the opening of borders forcing domestic policy discipline. Needed reforms could be carried out in conjunction with scheduled reviews of the CAP in 2006 and the expiring of the U.S. farm bill in 2007. Japan remains a bastion of protectionism, with tariffs, price surcharges, and trade management by parastatal agencies.

Current preferential and regional agreements often prevent low-cost producers from entering the internal markets covered by the agreements. Multilateral negotiations present an opportunity to rationalize the proliferation of preferential agreements by explicitly providing access to these competitive exporters by phasing in multilateral liberalization and allocating increased market access on a competitive basis. Further, quota allocations

are concentrated in a few countries, which are generally not the poorest but are high-cost relative to other countries (e.g., Mauritius has 38 percent of E.U. quotas). Thailand, a very low-cost producer, is limited to a 15,000-ton quota of sugar to the United States, whereas the Philippines has a quota about 10 times larger, which often goes underfilled.

### **Concluding Remarks**

The seemingly simple commodity markets discussed in this paper exhibit a complex political economy, both domestically and in the context of international negotiations. All the markets studied present heterogeneous interests, pitting producers and processors in the North against their counterparts in the South and generating different interests within the North and the South as well. Identifying superior policy options is not difficult, but the feasibility of reforms depends on the power of vested interests and the ability of governments to identify trade-offs and possible packages (linkages) that will allow them to continue to pursue multiple goals (such as food security, income transfers, and expansion of domestic value-added production) in a more efficient manner (Messerlin 2002).

It is a well-known principle of WTO negotiations that a narrow sectoral approach is unlikely to be fruitful. The commodity studies summarized here illustrate why. They also illustrate that potential trade-offs exist even within agriculture, as interests differ across commodities, even though other dimensions of the negotiation undoubtedly will be needed to obtain an overall agreement that benefits all countries. Perhaps most significant is that the studies reveal the importance of microanalysis in identifying both the key policy instruments that currently distort competition and the likely winners and losers from global reforms. The latter is critical in order to appropriately sequence reforms and put in place complementary policies, including adjustment assistance.

## Endnotes

1. The World Bank's Trade Department is also analyzing fruits and vegetables, fisheries and seafood, food processing, and wheat.
2. See Anderson et al. 2000; Beghin, Roland-Holst, and van der Mensbrugghe 2003; Hoekman, Ng, and Olarreaga 2002; Burfisher 2001; Dessus, Fukasaku, and Safadi 1999; and The World Bank 2001.
3. See Baffes 2003; Cox 2003; Cox and Zhu 2003; Diop, Beghin, and Sewadeh 2003; Mitchell 2003; and Wailes 2003.
4. Not all commodity markets are thin and price sensitive, especially markets that are less distorted, such as wheat. Estimates of price effects of liberalization in these markets are between 5 and 10 percent (FAPRI 2002).

## References

- Australian Bureau of Agricultural and Resource Economics (ABARE). 2000. "US and EU Agricultural Support: Who Does It Benefit?" *ABARE Current Issues* No. 2, October, pp. 1-6.
- Anderson, K., J. Francois, T. Hertel, B. Hoekman, and W. Martin. 2000. "Potential Gains from Trade Reform in the New Millennium." Paper presented at the Third Annual Conference on Global Economic Analysis, held at Monash University, Victoria, Australia. June.
- Baffes, J. 2003. "Cotton Market Setting, Policies, Issues, and Facts." Mimeo. The World Bank. Washington, D.C. March.
- Beghin, J., D. Roland-Holst, and D. van der Mensbrugge. 2003. "How Will Agricultural Trade Reforms in High-Income Countries Affect the Trading Relationships of Developing Countries?" In *Agriculture, Trade, and Poverty: Making Policy Analysis Count*. Paris: OECD Publications, pp. 39-57.
- Burfisher, M.E., ed. 2001. *Agricultural Policy Reform in the WTO –The Road Ahead*. AER 802, Market and Trade Economics Division, Economic Research Service, U.S. Department of Agriculture. Washington, D.C. May.
- Cox, T. 2003. "Global Trade and Protection Regimes in the World Dairy Sector: Background." Mimeo. University of Wisconsin. April.
- Cox, T., and Y. Zhu. 2003. "Assessing Potential World Dairy Policy Reforms: Interregional Impacts on Developed versus Developing Countries." Mimeo. University of Wisconsin. April.
- Dessus, S., K. Fukasaku, and R. Safadi. 1999. "Multilateral Tariff Liberalization and the Developing Countries." OECD Development Centre Policy Brief No 18. OECD, Paris.
- Diop, N., J. Beghin, and M. Sewadeh. 2003. "Groundnut Policies, Global Trade Dynamics and the Impact of Trade Liberalization." Mimeo. The World Bank, Washington, D.C. March.
- Food and Agricultural Policy Research Institute (FAPRI). 2002. "The Doha Round of the World Trade Organization: Liberalization of Agricultural Markets and Its Impact on Developing Economies." Paper presented at the International Agriculture Trade Research Consortium winter meetings, San Diego, December.
- Hoekman, B., F. Ng, and M. Olarreaga. 2002. "Reducing Agricultural Tariffs versus Domestic Support: What's More Important for Developing Countries?" Policy Research Working Paper 2918, The World Bank, Washington, D.C. Revised September.
- Mitchell, D. 2003. "Sugar Policies: Opportunity for Change." Mimeo. The World Bank, Washington, D.C. March.
- Messerlin, P.A. 2002. "Agriculture in the Doha Round." Paper presented at the World Bank's Wilton Park Conference on Prospects for the New Trade Round, London, UK, July 8-11. WTO Working Paper No. 3009.

Organization for Economic Cooperation and Development (OECD). 2002. *Agricultural Policies in OECD Countries: Monitoring and Evaluation 2002*. Paris: OECD Publications, June.

———. 2003. “Farm Household Incomes in OECD Countries.” Paris. January.

Wailes, E.J. 2003. “Global Trade and Protection Regimes in Rice Trade.” Mimeo. University of Arkansas. April.

World Bank. 2001. *Global Economic Prospects and the Developing Countries 2002*. Washington, D.C. October.

World Trade Organization, Committee on Agriculture (WTO). 2000. Special Session. “Domestic Support.” Document G/AG/NG/S/1. April.