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## Sugar Policies: Opportunity for Change

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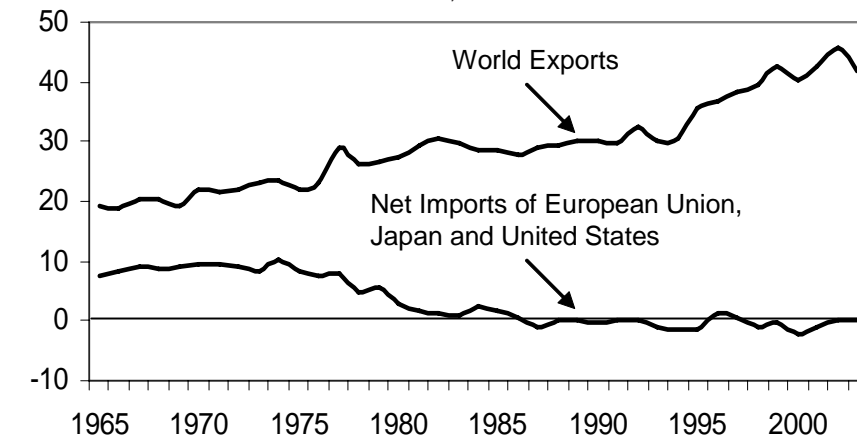
The source of about 7 percent of the world's calorie supplies, sugar is an important commodity in many countries, accounting for 10 percent or more of total export earnings of 12 developing countries during 1995–2000.<sup>1</sup> However, its importance as a source of export earnings has declined over time, partly because imports by Organization for Economic Co-operation and Development (OECD) countries have declined. In the 1970s, the European Union, Japan, and the United States accounted for half of the world's total sugar imports. Since then, U.S. sugar imports have declined from more than 5 million tons per year to slightly more than 1 million tons per year. The European Union, once a net importer of about 2.5 million tons, is now a net exporter of about 5 million tons. Japan decreased sugar imports from 2.5 to 1.5 million tons between 1970 and 2000. Thus, three of the largest sugar importers in the 1970s have now become self-sufficient (figure 1), slowing the growth of world trade and exports from developing countries.<sup>2</sup>

These countries reduced imports not because of gains in productive efficiencies or a strong comparative advantage in sugar production but because of high protection. Producers in these countries receive more than double the world market price thanks to government guarantees, import controls, and production quotas—a combination of policies that has encouraged production of sugar and sugar substitutes, reduced consumption and imports, and deprived lower-cost producers (many in developing countries) of export opportunities. Total government support to producers in the European Union, Japan, and the United States averaged \$6.4 billion in 2004 according to OECD estimates. In comparison, total sugar exports from developing countries were about the same in recent years.

The clout of the U.S. sugar industry was recently demonstrated when it opposed and almost prevented the passage of the Central American-Dominican Republic Free Trade Agreement (CAFTA-DR) because the agreement increased the sugar quotas of these countries (*Wall Street Journal*, July 28, 2005). The U.S. sugar industry had earlier prevented sugar from being included in the Australia–U.S. free trade agreement, even though sugar is an important export for Australia. The *Washington Post* reported (February 9, 2004) that the powerful U.S. sugar lobby and affiliated individuals and political action committees had donated \$20.2 million to both U.S. political parties since 1990. Pressures for change are building, however, and the opportunity for sugar policy reform is better now than in several decades.

### Figure 1. Inefficient producers in the North are crowding out efficient producers in the South

World sugar exports and net imports of the European Union, Japan and the United States, 1965-2003



Source: Based on FAO data.

### Background

Sugar occurs naturally in most foods, but it is economically extracted from only a few crops—among them sugar beets, sugar cane, and corn. Common sugar, or *sucrose*, is extracted in identical and nearly pure form from sugar cane and sugar beets. *Dextrose* is a sugar derived synthetically from starch (most commonly corn), and *fructose* is a very sweet sugar derived from dextrose. High-fructose corn syrup (HFCS), produced by the enzymatic conversion of a portion of the dextrose in corn syrup to fructose, is used as a sugar substitute in soft drinks. The fact that identical or nearly identical sugars can be produced from different crops provides producers and consumers with a wide range of substitution possibilities. But it also means that sugar policies are often complex, as the different industries vie for government support. For example, the European Union and Japan have legislated quotas on HFCS production in order to limit competition with sugar.

HFCS is a nearly perfect sugar substitute in uses such as soft drinks. It and other corn syrups now account for 40 percent of caloric sweeteners in Japan, and roughly half of U.S. caloric sweetener consumption (figure 2). Discovered in the late 1960s, the technique for commercial production of high-fructose corn syrup was made profitable by high sugar prices in the protected Japanese and U.S. markets. Today, economies of scale, improvements in production techniques, and large

installed production capacity (financed under high prices) have made corn syrups competitive with sugar from cane and less costly than sugar from beets.

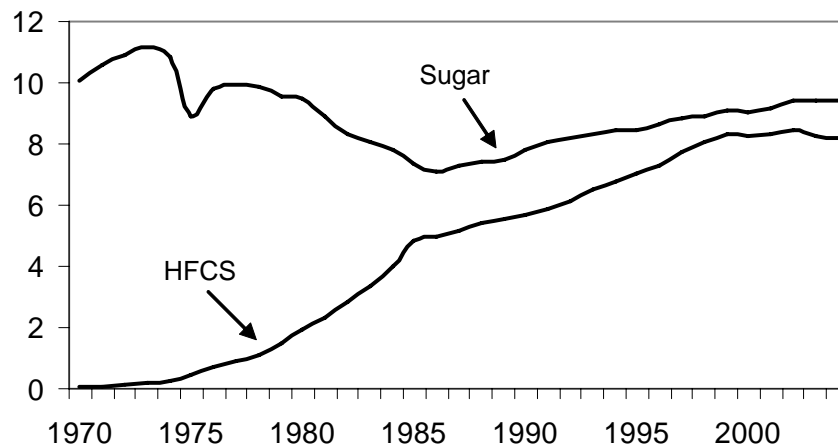
Costs of production favor producing sugar from cane. Major exporters can produce refined (white) sugar from cane at an average cost of about 13 cents per pound, compared to 26 cents per pound from sugar beets (table 1). The higher cost of production from sugar beets is one of the reasons why protection is high in northern hemisphere countries, which produce sugar mostly from sugar beets. HFCS requires large investments in plant and equipment and a low-cost source of starch. Because producers in the United States, a major producer of corn, have already made such investments, HFCS production costs in the United States are competitive with sugar produced from sugar cane.

### Policy changes are inevitable

The European Union proposed major reforms to its sugar regime following a ruling by the World Trade Organization (WTO) Appellate Body on April 28, 2005. That ruling upheld an earlier ruling in a case brought by Australia, Brazil, and Thailand, which charged that the European Union was subsidizing its sugar exports beyond the limits permitted in the Uruguay Round Agreement on Agriculture. The WTO Appellate Body dismissed the EU appeal in full, confirming that all EU sugar exports are subsidized, either directly or indirectly. The European Union, after declaring that it would abide

**Figure 2. Sugar supersizing in the U.S.**

U.S. consumption of sugar and high-fructose corn syrup, 1970–2004  
Million tons



Source: Based on USDA data.

**Table 1. Average costs of producing cane sugar, beet sugar, and high-fructose corn syrup by categories of producers, and actual sugar prices, 1997/98–2001/02**

Category	1997–1998	1998–1999	1999–2000	2000–2001	2001–2002
	U.S. cents per pound <sup>a</sup>				
Raw cane sugar					
Low cost producers <sup>b</sup>	8.25	8.11	6.84	7.95	6.59
Major exporters <sup>c</sup>	10.55	9.66	8.70	9.51	8.38
Cane sugar, white equiv.					
Low cost producers <sup>b</sup>	11.92	11.77	10.39	11.60	10.11
Major exporters <sup>c</sup>	14.41	13.45	12.41	13.28	12.06
Beet sugar, refined					
Low cost producers <sup>d</sup>	22.44	24.07	23.12	23.56	24.23
Major exporters <sup>e</sup>	25.44	27.02	25.51	24.2	26.19
High-fructose corn syrup <sup>f</sup>					
Major producers <sup>g</sup>	12.62	11.41	11.62	12.87	12.62
Actual Market Prices					
Raw cane sugar <sup>h</sup>	10.76	7.18	6.20	9.81	7.21

a. Measured in nominal U.S. cents per pound, ex-mill, factory basis.

b. Average of six producing regions (Australia, Brazil (Center/South), Guatemala, Malawi, Zambia, and Zimbabwe).

c. Average of seven countries (Australia, Brazil, Colombia, Cuba, Guatemala, South Africa, and Thailand).

d. Average of seven countries (Belgium, Canada, Chile, France, Turkey, United Kingdom, and United States).

e. Average of four countries (Belgium, France, Germany, and Turkey).

f. HFCS-55, dry weight.

g. Average of 22 countries (Argentina, Belgium, Bulgaria, Arab Republic of Egypt, Canada, China, Finland, France, Germany, Greece, Hungary, Italy, Japan, Mexico, Netherlands, Poland, Slovakia, South Korea, Spain, Taiwan (China), Turkey, United Kingdom, and United States).

h. Raw cane sugar price is U.S. cents per pound, July–June average of monthly prices, f.o.b. Caribbean ports.

Source: LMC International as reported in Sugar and Sweeteners Outlook, Economic Research Service, USDA, September 2004. Actual market prices are from World Bank.

by the ruling, tabled a reform proposal on June 22, with a target of getting an agreement before the WTO meeting in Hong Kong in December 2005.

The reform proposed by the European Commission calls for an internal price cut of 39 percent over two years beginning in 2006–07. EU sugar beet producers are to be compensated for 60 percent of the price cut through the Single Farm Payment, which would be linked to environmental and land management standards. The existing A and B quotas are to be merged into a single production quota, and intervention prices are to become a reference price. A private storage system will be introduced as a safety net in case the market price falls below the reference prices.

The European Commission also proposed an assistance scheme for the ACP (Africa, Caribbean, Pacific) countries that includes a broad range of support options that can be tailored to each country.

With successful conclusion of the Doha Round of multilateral trade negotiations expected to require reform on sugar, the proposed reform of the EU sugar regime has had the effect of isolating the United States. The United States has not announced a sugar reform package, but it will face strong internal and external pressures for reform in the next several years. The external pressures will include political pressures in the Doha Round and market pressures stemming from international agreements such as North American Free Trade Agreement (NAFTA) and CAFTA-DR. The U.S. sugar program accounts for a disproportionately large share of the Aggregate Measure of Support (AMS), which is expected to be cut as part of a Doha Round agreement. This will lead to internal pressures for reform as other commodity groups fight to protect their own support programs.

Market pressures will come primarily from Mexico, which will be allowed unlimited duty-free access in 2009 under NAFTA. This could lead to a surge of imports, a build-up of U.S. government stocks, and large budget outlays unless the United States reduces its internal sugar price supports. The next U.S. farm bill, scheduled for 2007, is the most likely occasion for policy reform.

Japan faces less internal pressure for reform, but it provides higher protection to its sugar producers than the European Union and United States. It should be pressured to reform its sugar policy by developing country exporters.

### **The benefits of reform are substantial**

Protection in the world sugar market is imposed by developed countries at great cost to themselves and those developing countries with the economic potential to expand exports.

The welfare benefits of sugar policy reform are substantial—and the gains greatest from multilateral reform. According to recent studies of the global sugar and sweetener markets, the global welfare gains from removing all trade distortions are estimated to be as much as \$4.7 billion per year. In countries with the highest protection (Japan, Western Europe, the United States, Indonesia, and Eastern Europe, in descending order) net imports would increase by an estimated 15 million tons per year as production falls and consumption rises. World sugar prices would increase by as much as 40 percent, while prices in countries that heavily protect their markets would decline to the benefit of consumers. The greatest price declines would occur in Japan, where sugar prices would fall 65 percent, followed by a 40 percent decline in Western Europe, and a 25 percent decline in the United States. Brazilian producers stand to gain the most from liberalization: around \$2.6 billion per year. Partially offsetting that gain is a loss of \$1 billion to Brazilian consumers, who would pay higher prices after liberalization—leaving a net gain of \$1.6 billion for Brazil.

If existing policies in the European Union and United States are adjusted to accommodate higher imports under the ACP, Europe's Everything But Arms (EBA) agreement, NAFTA, and other agreements, many low-cost producers, including Brazil, would lose because they do not currently have large quotas and are not among the ACP, EBA, or NAFTA countries. A better alternative is to push for full liberalization of the world sugar market in order to allow efficient producers to expand production and exports, and consumers in protected markets to benefit from lower prices. Full liberalization may also make policy change more palatable because no country would be singled out for reform. It also has the advantage of offering somewhat higher world prices to soften the adjustment for producers in protected markets.

**But not all countries stand to gain from reform**

A number of countries have preferential access to the EU or U.S. sugar markets through the ACP/EU Sugar Protocol and the U.S. sugar import program (table 2). These countries receive the high internal price on quota exports. Their preferential access is valued at about \$800 million per year compared to world market prices—less than it appears, because many of these producers have high production costs and would not produce at world market prices, and because world price increases after full liberalization would partially offset the loss of high prices in preferential markets. The net loss to these exporting countries from full liberalization is estimated to total \$450 million per year.

**Table 2. Countries with large quotas in the EU and U.S. sugar markets**

EU quota holders			U.S. quota holders		
Country	Sugar quota 2003/04	Share of exports from sugar	Country	Sugar quota 2003/04	Share of exports from sugar
Mauritius	491,031	17.3	Dominican	185,335	9.5
Fiji	165,348	20.7	Brazil	152,691	3.3
Guyana	159,410	28.0	Philippines	142,160	0.1
Jamaica	118,696	5.4	Australia	87,402	1.5
Swaziland	117,845	11.9	Guatemala	50,546	7.8
Barbados	50,312	9.5	Argentina	45,281	0.2
Belize	40,349	19.2	Peru	43,175	0.2
Trinidad & Tobago	43,751	0.9	Panama	30,538	2.0
Zimbabwe	30,225	3.2	El Salvador	27,379	2.1
Malawi	20,824	6.0	Colombia	25,273	1.6

Source: European Commission 2004 and USDA 2003.

Low-cost producers with small EU or U.S. quotas relative to their total exports would benefit from policy reform because they would gain more from increased exports and the rise in world market prices than they would lose from eroded preferences. These countries include Australia, which has a U.S. quota of 87,000 thousand tons and total exports of more than 4 million tons; Brazil, with a U.S. quota of 152,000 tons and total exports of more than 17 million tons; and Thailand, with an EU quota of 14,000 tons and exports of 3-4 million tons.

Countries with no quota to the EU and U.S. markets, such as Arab Republic of Egypt and Sudan, would benefit from both higher exports and higher world prices. Other compensations for the loss of quotas may also be available, including broad-based economic supports such as the Economic Partnership Agreements now being negotiated by the European Union.

### **Employment in sugar industries**

Estimates of employment in developing countries' sugar industries have been developed from various reports, surveys, and industry statements (table 3), although no systematic accounting is available. Such estimates show considerable cross-country consistency among high- and low-cost producers. Brazil, Guyana, and South Africa are among the lowest-cost producers; their rates of raw sugar production per industry employee are estimated to range from 16.3 to 19.9 tons per year. Moderately high-cost producers, such as Fiji and Mauritius, produce about 8 tons of raw sugar per industry employee. Jamaica, a very high-cost producer with production costs estimated at about 24 U.S. cents per pound, produces about 5.5 tons of raw sugar per industry employee. Based on these estimates, an additional million tons of sugar production from a low-cost sugar producing developing country would generate about 55,500 direct employment jobs. If the production came from a high-cost producer, the same million tons of production would generate about 128,000 direct employment jobs. (Additional indirect employment would also be generated in transportation and related industries, but no attempt has been made to estimate these jobs.)

Based on these estimates of productivity, full liberalization could generate between 832,500 and 1,920,000 jobs in developing countries by raising imports of developing-country sugar into highly-protected markets by 15 million tons. The net global employment effect would be less because some jobs would be lost in the highly protected markets. In the United States, for example, an estimated 6,000 sugar beet growers produce half of the country's sugar. Many of these jobs would be lost. However, new jobs would be created to accommodate processing of raw cane sugar imported to replace the decline in sugar produced from beets.

**Table 3. Raw sugar produced per sugar industry employee, selected developing countries, 1999–2001**

Country	Direct employment (growers and factory)	Tons of raw sugar produced average	Tons of raw sugar produced per employee
<b>Low-cost producers</b>			
Brazil	1,100,000	19,485,000	17.7
Guyana	18,000	293,072	16.3
South Africa	130,000	2,589,667	19.9
<b>High-cost producers</b>			
Fiji	40,500	336,333	8.3
Jamaica	38,000	208,351	5.5
Mauritius	65,000	529,299	8.1
<b>Other producers</b>			
Malawi	17,000	200,667	11.8
Mexico	300,000	5,069,233	16.9

*Notes and Sources:* Production is the three-year average of raw sugar production during 1999–2001 from FAOSTAT. Employment data are from various sources and include total direct employment in sugar factories and the number of growers. Employment data for Brazil are from OECD (1999); Fiji and Guyana data are from F.O.Lights; data for Jamaica are from the Jamaican Sugar Authority; Kenya data are from the Kenya Sugar Board; Malawi data are from the Malawi Ministry of Commerce and Industry; Mauritius data are from F.O.Lights; Mexico; and South Africa data are from OECD (1999).

### Conclusions

The chances for global reform of sugar policy are better than they have been for several decades. The European Union has already proposed major reforms to its sugar regime following a ruling by the WTO Appellate Body on April 28, 2005. That ruling, upholding an earlier ruling in a case brought by Australia, Brazil, and Thailand, confirmed that all EU sugar exports are subsidized, either directly or indirectly. The EU's proposal in response calls for a 39 percent cut in internal prices and other measures to increase the market orientation of the sugar sector. The United States has not yet proposed reform to its sugar program, but there are strong external and internal market pressures for reform.

The current round of multilateral trade negotiations offer an excellent opportunity for developing countries to push for reform, which would create jobs and raise foreign exchange earnings, while also benefiting consumers in highly-protected markets who pay several times the world market price for sugar.

In anticipation of reform, countries with high protection will need to devise policies to compensate countries for the loss of quotas and producers for the loss of protection. Such compensation should be designed so that it does not continue to support sugar production but rather supports sugar producers during an adjustment

period. This type of adjustment was used in the United States for peanut producers facing the threat of increased imports due to WTO and NAFTA agreements. In the 2002 U.S. farm bill, the loan rate for edible peanuts was cut by half (compared to the rate prevailing in the mid-1990s), production quotas were eliminated, and direct cash payments were made to producers. The payments consisted of deficiency payments (paid when prices fell below the new loan rates), decoupled direct payments, and counter-cyclical payments. Quota holders were compensated through direct payments for their loss of quota rights. A similar program is needed for sugar.

Unwinding the system of protection and support will require new policies in some developing countries. Some high-cost producers may be able to raise productivity, but others will have to contract. Policies that encourage investments to increase productivity and assist in the shift of resources to other, more internationally competitive activities, may be in order. Development assistance can play a supportive role in all of these areas.

#### Note

1. The 12 countries and the average share of export earnings derived from sugar during 1995–2000 were: Gambia (91 percent), Reunion (63 percent), Cuba (41 percent), Saint Kitts and Nevis (37 percent), Fiji (25 percent), Belize (25 percent), Guyana (24 percent), Mauritius (21 percent), Swaziland (17 percent), Dominican Republic (14 percent), Guadeloupe (12 percent), Barbados (11 percent).
2. Donald Mitchell is Lead Economist in the Development Prospects Group of The World Bank. This note is based on “Sugar Policies: Opportunity for Change, World Bank Policy Research Working Paper 3222, February 2004.

#### Further Reading

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