

## Domestic and International Competition in Sugar Markets <sup>1</sup>

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This is part of the Sugar Policy series, which discusses policy issues facing the U.S. sweetener industry in general and Florida's sweetener industry in particular. The objective of this article is to examine domestic and international competition in sweetener markets.

Especially for developing countries, sugar is important to the economy. Most sugar-producing countries have enacted legislation to protect their domestic industries. This is also true for the United States. Although the contribution of the United States and Florida to world sugar production is almost insignificant, they are affected by world sugar events.

### Florida's Share in Domestic and International Markets

The contributions of Florida and the United States to world sugar production are almost insignificant (Table 1). In the 1998-2001 seasons, Florida and the United States have accounted for

about 1.5 percent and six percent of world sugar production, respectively. During the same time period, Florida has produced between 24 percent and 26 percent of the total U.S. cane and beet sugar production (Table 1). Despite those figures, Florida is affected by competitive domestic and international forces.

### The Domestic Competitive Environment

The sweetener market in the United States is composed of caloric, minor caloric, and noncaloric products. Sugar and corn sweeteners are in the first category. Honey and edible syrups are considered minor caloric sweeteners. Noncaloric products are defined to include saccharine, cyclamate (not in the market since 1970), and aspartame. The U.S. Department of Agriculture has estimated that, during 2000, the average American consumed approximately 65.8 pounds of sugar, 82.8 pounds of corn-derived sweeteners (61.6, 17.9, and 3.3 pounds of HFCS,

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glucose, and dextrose, respectively), and 1.5 pounds of honey and edible syrups, or a total caloric sweetener consumption of 150.1 pounds. Low-caloric sweetener consumption data are no longer available, but 20 pounds of sucrose (saccharine and aspartame) per capita were consumed in the early 1990s. Those figures would result in a total per-capita sweetener consumption of approximately 170.1 pounds. In one way or another, these products compete in the U.S. market for the consumers' dollars.

Direct competition occurs among caloric sweeteners. These products have about the same qualities, and their final markets are usually the same. High fructose corn syrup (HFCS) is a good example. Although originally introduced in 1967, it was the fructose level increase to 55 percent in 1978 that resulted in sugar's loss of the soft drink market. HFCS can be produced at considerably lower costs than sugar, giving this product a competitive advantage over sugar in domestic markets.

Indirect competition occurs between caloric and noncaloric products. Noncaloric sweeteners are basically sugar substitutes, intended to taste and act like sugar in food and beverages but without sugar's calories. The introduction of aspartame in 1981 has been in part responsible for the increase in per capita consumption of noncaloric products.

The situation found in most other developed countries may parallel the one in the United States. Vuilleumier (1989) has described the recent and future increases in production and consumption of HFCS in many areas of the world, primarily in the developed countries. The increase in consumption of noncaloric sweeteners, on the other hand, is peculiar to industrialized societies because of diet concerns. The enormous aggregate size of this artificial sweetener market in industrialized nations (e.g., the United States) has prompted considerable Research and Development activity among the major food and pharmaceutical firms. The Food and Drug Administration (FDA) has recently approved several sweetener compounds and is considering approval of others that are 2,000 times sweeter than sugar. Some of these products will likely compete with presently marketed noncaloric sweeteners (e.g., aspartame)

rather than compete with beet and cane sugar directly. Others, because of the wide variety of applications and the lack of an aftertaste, are expected to have an impact on sugar's share of the sweetener market (Alvarez and Polopolus, 1990).

## The International Competitive Environment

With minor exceptions, there is very little "free trade" in sugar in the sense that production and trade are free of government intervention.

On the production side, most sugar-producing countries have enacted legislation to protect their domestic industries. Another article in this series (SC020, The Sugar Program: Description and Debate) describes the U.S. sugar program. Programs in other countries share the same goal of securing a stable supply of sugar at favorable prices for producers to protect their domestic industries.

Protectionist policies extend to the trade side. Essentially all governments intervene in sugar trade with various policies, control devices, and/or exclusive trade agreements. These intervention policies insulate domestic sugar markets from the "free" market. It is not surprising that, under these circumstances, the domestic price of sugar does not necessarily reflect the price of sugar on the world market.

International sugar trade is conducted in private commercial channels through government-to-government arrangements and with government and commercial combinations. Considerable quantities of sugar are shipped across national boundaries under "special arrangements" (e.g., Cuba's former agreement with the U.S.S.R. and other Eastern-European countries), agreements between some of the former British Commonwealth countries and the European Community (EC), and import quotas under the U.S. sugar program.

There are other examples of direct government intervention in many countries. The real world "free" market (only 15 percent of all sugar produced) is thus a residual market or a market of left-overs from domestic needs (75 percent) and/or pre-arranged deals (10 percent). This "free market" often becomes

a dumping ground and remains relatively "thin" compared with world supply and demand.

An attempt at regulating the residual "free market" to eliminate dumping and dampen the movement of prices has been made through International Sugar Agreements. Initiated in 1953 between major exporting and importing countries, their performance has been disappointing. The efforts of more than 100 countries negotiating under the Uruguay Round of the Generalized Agreement on Tariffs and Trade (GATT), discussed in another article in this series (SC022, Sugar and the General Agreement on Tariffs and Trade), did not produce dramatic results in their efforts to reduce and eventually eliminate agricultural subsidies in the early 1990s. GATT was replaced by the World Trade Organization (WTO). Negotiations have continued. If a final agreement is implemented in the future, it will have a dramatic impact on world sugar production and trade, including Florida and the United States.

## References

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**Table 1.** Florida, U.S., and world sugar production, fiscal years (October-September) 1997-2001.

Year	1,000 tons, raw value			Share (%)		
	<i>Florida</i>	<i>United States</i>	<i>World</i>	<i>FL/U.S.</i>	<i>FL/World</i>	<i>U.S./World</i>
1997-1998	1,925	7,276	125,526	26.4	1.53	5.80
1998-1999	2,132	7,597	130,564	28.1	1.63	5.82
1999-2000	1,976	8,203	135,470	24.1	1.46	6.05
2000-2001	2,005	7,710	127,713	26.0	1.57	6.04

Source: <http://www.ers.usda.gov/data>.