United States
Department of
Agriculture

**Economic
Research
Service**

**Commodity
Economics
Division**

AGES 9006

Sugar

Background for 1990 Farm Legislation

Robert D. Barry
Luigi Angelo
Peter J. Buzzanell
Fred Gray

It's Easy To Order Another Copy!

Just dial 1-800-999-6779. Toll free.

Ask for *Sugar: Background for 1990 Farm Legislation* (AGES 9006).

The cost is $11.00 per copy. For non-U.S. addresses (including Canada), add 25 percent. Charge your purchase to your VISA or MasterCard, or we can bill you. Or send a check or purchase order (made payable to ERS-NASS) to:

ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608.

We'll fill your order via 1st class mail.

Can You Use an Electronic Database?

An electronic database containing the data in this report is available. The database is in the form of Lotus 1-2-3 (Release 2) worksheet files on MS-DOS and PC-DOS compatible, 5.25-inch DDSD diskettes.

Write to the above address and ask for the *Sugar and Sweeteners Yearbook* database (order #89019, $25). Non-U.S. addresses (including Canada), add 25 percent. **Or use our toll-free number, 1-800-999-6779.**

For further information on this database, write Peter Buzzanell, Room 1208, 1301 New York Avenue, NW, Washington, DC 20005-4788 or phone 1-202-786-1888.

Sugar: Background for 1990 Farm Legislation. By Robert D. Barry, Luigi Angelo, Peter J. Buzzanell, and Fred Gray. Commodity Economics Division, Economic Research Service, U.S. Department of Agriculture. Staff Report No. AGES 9006.

Abstract

The sugar support program and rapid adoption of high fructose corn syrup (HFCS) played important roles in transforming the U.S. sugar industry in the 1980's. While sugar output and productivity increased, consumption of sugar fell dramatically as HFCS displaced sugar in many uses, particularly beverages. After a decade of steady decline, sugar consumption in 1987 began rising at a slow rate. U.S. imports of sugar for consumption fell from an average of over 4 million short tons in 1979-81, to about 1 million tons in 1988. U.S. sugar import quotas have been binding since May 1982, to keep prices at levels required by the sugar program. Regional sugar balances have altered in the 1980's, and beet sugar now provides about 45 percent of U.S. sugar use, up from about 30 percent. The world sugar market changed much in the past decade, moderating the price cycle and extending the period of persistently low prices.

Keywords: sugar, costs and returns, imports, quotas, HFCS, low-calorie sweeteners, program effects, world sugar

Foreword

Congress will soon consider new farm legislation to replace the expiring Food Security Act of 1985. In preparation for these deliberations, the Department of Agriculture and many groups throughout the Nation are studying preceding legislation to see what lessons can be learned that are applicable to the 1990's. This report updates **Sugar: Background for 1985 Farm Legislation,** (AIB-478) by Frederic L. Hoff, Robert D. Barry, Luigi Angelo, and John Nuttall. It is one of a series of updated and new Economic Research Service background papers for farm legislation discussions. These reports summarize in a nontechnical form the experience with various farm programs and the key characteristics of the commodities and the farm industries which produce them. For more information, see the Additional Readings listed at the end of the text.

Washington, DC 20005-4788 February 1990

Contents

Summary

The U.S. and world sugar markets changed significantly in the 1980's as a result of rising use of substitute sweeteners, new technologies, and government policy. The sugar support program mandated by 1981 farm legislation and particularly the Food Security Act of 1985 played an important role in the evolution of the U.S. industry by providing market prices which protected domestic producers from the persistently low prices of sugar in the world market.

U.S. sugar producers increased both productivity and output in the 1980's. While the number of sugarcane mills declined, daily grinding capacity expanded and cane sugar production rose to a record 3.3 million short tons in 1987/88, and an estimated 3.4 million tons in 1988/89. Beet factories are fewer, but daily average slicing capacity per factory rose over 16 percent in the 1980's. Factories are also more efficient, with higher extraction rates (sugar recovered as a percentage of sucrose in the beets). Beet sugar production was a near-record at 4 million tons in 1987/88, and total beet and cane sugar production reached a record 7.3 million tons. At current levels of support, U.S. sugar production is likely to increase further.

Deliveries of refined sugar for domestic consumption peaked in 1977 at 10.4 million tons and then declined for a decade as high fructose corn syrup (HFCS) displaced sugar in liquid industrial uses, primarily beverages. As HFCS approached the limits of its technical ability to substitute for sugar, aggregate sugar consumption begun rising again with population and income.

The combination of higher domestic sugar output and lower consumption has pushed imports for consumption down from an average of over 4 million tons in 1979-81 to about 1 million tons in 1988. A production shortfall and some rise in consumption have raised the 1989/90 sugar import quota to an annualized 1.4 million tons. Restrictive sugar import quotas have been in force since May 1982 to keep prices at the U.S. sugar program's required levels.

The radical alteration of U.S. sugar supply and use in the past decade has transformed regional sugar balances. The Northeast (New England-Mid-Atlantic) has shifted from its position of supplying nearly all its refined sugar needs, to being in deficit by about 600,000 tons (raw value basis) in 1988. Beet sugar from the Midwest and North Central States have serviced the balance. Beet sugar now provides about 45 percent of U.S. sugar consumption, up from about 30 percent in 1981. As beet sugar output expands, its role in pricing both beet and refined cane sugar will be magnified.

U.S. Government intervention in the sugar market has a 200-year history. Comprehensive regulation of production, imports, and prices under the U.S. Sugar Act lasted 40 years, until 1974.

However, since then, support programs have been reestablished (although not as comprehensively) whenever the world price has been deemed so low as to threaten the viability of the domestic sugar industry. Since 1974, Government support was absent only in 1975-76 and 1980-81 when world prices surged to cyclical highs. In most years, the world price is artificially low, reflecting the residual nature of sugar sold in that market. Intervention in sugar is an almost universal practice among governments around the world.

The structure of world sugar trade was transformed in the 1980's: (1) developing countries account for a much larger and growing percentage of global consumption and, with lower incomes than developed countries, are likely to drop out of the market as prices rise; (2) both starch-based and low-calorie sweeteners are now more widely accepted as sugar substitutes and low-calorie sweeteners in particular appear poised to take advantage of sugar shortfalls and extreme prices; (3) refined beet sugar accounts for a larger percentage of trade and its production can respond more quickly than cane sugar to a price rise; and (4) Brazil's potential to switch sugarcane between sugar and alcohol fuel, while uncertain in 1989/90, can technically provide a safety valve for world sugar prices. These factors have tended to stretch out the sugar cycle by moderating price run-ups and extending the period of low prices.

Past, unsuccessful efforts at rationalizing the world market for sugar took the form of international sugar agreements to control supplies and prices. A different direction is being undertaken in the current round of multilateral trade negotiations which aim to eliminate trade-distorting government interventions.

Sugar is a highly controversial and politically charged commodity, nationally and internationally. Sugarbeet and sugarcane growers, processors, and refiners, as well as consumers and industrial sweetener users, foreign sugar suppliers, corn sweetener manufacturers, and others are significantly affected by the U.S. sugar program. The changing structure of the sugar and sweetener industry has added new issues for decisionmakers to consider in developing sugar policy and deciding the level and form of a U.S. sugar support program.