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U.S. SUGAR OUTLOOK

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Ladies and gentlemen, it is a pleasure and a privilege to present an outlook on the prospects for the U.S. sugar industry. In the last 10 years, the sugar industry has expanded considerably, both on the production and consumption sides. I would like to present a view of both the near-term outlook, and 9 years into the future.

The Near Term Outlook: U.S. Sugar Production

In spring 1997, there were hopes for a 1997/98 (October 1 1997 - September 30, 1998) beet sugar crop that might challenge the record 1994/95 output of 4.5 million tons raw value. Acreage was up about 100,000 acres, and growing conditions for the country proceeded reasonably well through the summer. USDA's initial forecast for 1997/98, 4.3 million tons, was raised to 4.4 million tons in November due to an increase in the projected sugarbeet crop from National Agricultural Statistics Service (NASS). In January, the forecast sugarbeet crop was lowered, in part due to disease and pest problems in the western plains and also to slightly lower acreage harvested and yield. U.S. beet sugar production was lowered in the January WASDE report to 4.3 million tons, and kept at that level in February.

USDA is forecasting the volume of sugar produced from the desugaring of molasses in 1997/98 will be 234,000 tons. The implied recovery rate of sugar produced directly from beets is 13.6 percent (4.06 million tons of sugar from 29.9 million tons of beets). If sugar from molasses were included, the recovery rate would be 14.4 percent.

Cane sugar production in 1997/98 is forecast at 3.555 million tons. For now USDA is maintaining production in Hawaii at 340,000 tons, but future developments would more likely lower that forecast than raise it. Louisiana came in with not only a record crop, but beat the record by more than 200,000 tons or 20 percent. The seven percent rise in sugar per acre above the previous record was mostly due to a higher-yielding new variety of cane, combined with good weather.

The season in Texas is over, with production a disappointing 80,000 tons due to lack of adequate irrigation, the lowest since the freeze of 1989. Some fields were abandoned. Texas has suffered through 5 years of drought, and even El Nino has not brought relief. However, prospects are for higher acreage next year, as some farmers are switching land and/or water out of cotton into cane.

The final Florida production story is not yet written, as the season is only three-fourths over. For a while a record-setting season seemed a good prospect, and USDA's current forecast is for 1.835 million tons, which would be about equal to the record output of 1991/92. There has been a great deal of rain in the last month, which complicates harvest but does not necessarily impact final output. Acreage in Florida has been relatively stable for the last 8 years, after an earlier period of rapid growth. Puerto Rico is projected to produce 25,000 tons.

The U.S. cane sugar production forecast, if achieved, would be a record. The forecast total U.S. sugar production would be higher than all years except 1994/95.

U.S. Sugar Deliveries

USDA is forecasting an increase in sugar deliveries (a proxy for consumption) of 1.85 percent over the 1996/97 level of 9.769 million short tons, raw value. Note that the USDA data on deliveries include several categories which are not included in the private-sector deliveries with which some of you may be familiar: direct-consumption imports, Puerto Rico, deliveries from sugarcane processors, deliveries under the import program for polyhydric alcohol, and, more recently, imported sugar syrups. The rise of 180,000 tons would be slightly above the 12-year trend increase of 160,000 tons.

Since September we have been including the product entered under tariff code 1702.90.4000 in the supply and use balance. We are working on obtaining better information on this product.

Americans seem to continue to increase their per-capita use of sucrose, and HFCS use is growing faster than that of sugar. The "fear of fat", although often honored in the breach (at least by folks like me), may still hold sway with a sizeable segment of the population and thus contribute to higher intake of carbohydrates (sugars).

Imports

The tariff-rate quota tranche cancellation in January dropped the estimate of imports under the tariff-rate quota (TRQ) to 1.74 million short tons, raw value. This compares to TRQ imports of over 2.2 million tons for each of the last two fiscal years. Other than those two years, the last time annual fiscal year TRQ imports exceeded 2 million tons was 1990/91.

Imports of sugar under the reexport program are forecast at a relatively-low 275,000 tons, and exports at 185,000 tons for the refined sugar reexport program and 100,000 tons as transfers to the sugar-containing product reexport program. The lack of a good premium for white sugar on the world market and the lack of a consistent discount for forward contracts on the world sugar futures markets have reduced interest in this program. It remains to be seen what will transpire later in the year, when a new refinery in

Florida comes on line raises U.S. refining capacity and thus the need for other refiners to take more advantage the reexport programs to utilize capacity.

Prices

Refined sugar prices are reported in recent months at 25.5 cents a pound for beet sugar, fob Midwest factories. The beet crop appears to be about 300,000 tons higher than last year, and the correlation of softer prices with larger beet crops has held again. The near-by raw sugar price (Contract No. 14, New York Coffee Sugar & Cocoa Exchange) has been below 22 cents a pound for weeks, and averaged 21.85 cents in January and 21.93 cents in December. The late-summer futures prices have recently been around 22.10 - 22.20 cents. The projected ending stocks-to-use ratio is 13.5 percent, and based on experience of the last 15 years that stock-so-use ration correlates with a July-September price in the range of 23 cents. Is there something happening this year affecting (shifting) that relationship? What will structural changes in the industry do to this relationship?

Spot prices for HFCS-42 were reported at about 10.5 cents a pound, dry basis, for 1997, compared with about 14.5 cents in 1996, and 15.5 cents in 1995. Relatively low HFCS prices in 1997 may have caused some users to switch from sugar to HFCS. If true, will there be a continuation of that phenomenon in 1998? The possibility of substitution of HFCS for sugar is low, perhaps too low to detect in our numbers: but yet, HFCS deliveries continue to grow at more than twice as fast as sugar deliveries. The recently-announced temporary reduction in use of some HFCS production facilities may provide a bit of lift to HFCS prices in the near term.

Longer-Run Projections

The USDA baseline is not the same thing as a forecast. Baseline projections are provided as a conditional long-run scenario about what would be expected to happen under current agricultural law, and with specific assumptions about external conditions. Critical assumptions are made about U.S. and foreign policies, U.S. and external macroeconomic conditions, growth rates of agricultural productivity, and normal (average) weather. The sugar baseline shows USDA's view as of November 1997.

Beet sugar production seems likely to grow in the years ahead. The number of beet factories declined in most of the decades this century, while beet sugar production continued to rise. For example, using averages for a decades, in the 1950s there were 64 sugarbeet factories producing about 1.8 million tons of beet sugar. Since then, the number of factories has dropped while average beet sugar production increased, although beet sugar output in the 1980s averaged about 3.5 million tons, similar to the 1970s. For the 1990s, beet sugar production has averaged about 4 million tons for the decade so far.

What will the next decade bring? I suspect a continuation of recent trends: fewer, larger factories, and more beet sugar: perhaps 5 fewer

factories, but beet sugar production approaching 5 million tons a year.

Since the yield of sugarbeets per acre has not shown any upward trend, the key for better sugar per acre has been in the quality of the beets, and in the ability of the factory to extract more of the sugar in the beets. There are no technical reasons of which I am aware for these trends to slow down. In fact, the transgenic plant revolution has barely begun, and continued progress in finding ways to improve sugarbeets is likely. At the same time, some of the new technologies may lower costs: for example, new sugarbeet varieties which are resistant to broad-spectrum herbicides may be able to cut costs by \$50 or more per acre. Of course, at least in the early years of the patents, some of the savings may be partially offset by higher seed costs, but in the longer run significant costs reductions are possible.

While sugarbeet yields per acre do not show a trend, the recovery of sugar from beets (not including sugar from de-sugaring of molasses) shows a trend increase since 1970 of about 0.05 percent a year, although the time trend explains only about 25 percent of the variation. The USDA baseline projects beet sugar production to rise above 5 million tons by the year 2007.

Overall U.S. cane sugar production seems also set to increase. This past year's remarkable Louisiana crop may become the norm, or even be exceeded in the future. In the prime growing areas of Louisiana, there are few alternative crops, and none for which returns per acre can match cane. The price-cost squeeze continues to press upon many growers. On the other hand, efficiencies are gained with new cane varieties, harvesting machines, and organizational changes which will lead to fewer and better factories.

Florida may continue to face various pressures, including from environmental concerns. One Florida mill and associated acreage has been bought by the government, with an agreement to continue to produce sugar for 5 more years. However, as some land is taken out of cane, it is possible that partial offsetting expansion in other areas could occur. Florida has some of the largest mills in the world, but the pressure to grow even bigger to remain on the cutting edge of efficiency will likely continue. On balance, Florida sugar production is projected to not change much over the next 9 years. Hawaii is projected to stabilize slightly below current production levels, assuming that current companies remain in business (standard baseline assumptions). Texas should recover back to their peak production levels of a few years ago.

The long-run growth rate of U.S. sugar consumption is projected at 1.2 percent a year, slightly below the last decade, but above population growth of about 0.8 percent. Over the 9-year period to 2007, total consumption would rise by over 1 million tons.

Projecting sugar consumption has at times been a treacherous business. To illustrate, I show a chart plotting various projections made over the last decade. The projection is for U.S. sugar consumption in the current year, 1997/98. In the 1988, 1989 and 1990

baselines (made in November of each year), total U.S. sugar consumption for 1997/98 was projected at about 8.8 million tons. As it turns out, we will exceed that level by over 1 million tons.

Or, consider that sugar consumption in 1991, just 2 years after the 1989 forecast, already exceeded the projection for 9 years later in the year 2000. Some of you who were involved in the 1990 Farm Bill debate may recall similar numbers, and the influence they may have had in shaping the marketing allotment and minimum import provisions of that legislation.

Why was the projection of 9 years ago off by 1 million tons? Is it possible that the current projection for 2006/07 will be off by 1 million tons? If so, will it be higher, or lower? Of course, if we knew the answers then our projection would take them in to account: recklessly, I offer some observations about sugar consumption anyway.

Sugar at one time had a rather negative public image, if I remember the 1970s correctly. Then in the 1980s, public attention became focused on fat as something to avoid; and about the same time a rather successful advertising campaign to promote the healthy and natural aspects of sugar was conducted. The result: gains to carbohydrates, and sugar in particular. Such gains, due to the movement away from fat, may be exhausted. If true, this contribution to the growth in sugar consumption may be over.

U.S. income has grown over the last decade, although many debate whether there was an even distribution of income growth. The correlation of sugar consumption to income was complicated during the era of HFCS substitution, but certainly there is no reason to assume anything but a positive correlation, even if small. With continued growth of income assumed in the baseline, the impact of income over the next decade should not be very different from the past decade.

Sugar has never lost much market share to high-intensity sweeteners, though some have predicted this result. There is contrary evidence, that high-intensity sweeteners may have encouraged sugar consumption. Mr. Consumer may convince himself that, since he is consuming a diet soft drink, he can eat another donut. I think that this effect was real, but may have run out of steam. The number of alternative sweeteners on the shelf will grow. While a low-calorie perfect bulking agent may not be here yet, some progress may be made in this area. Clever technicians will figure out more ways to combine sweeteners and bulking agents. High-intensity (low-calorie) sweetener prices are only likely to continue to fall, particularly when new ones appear. Bottom line: sugar will be faced with more competition from low-calorie sweetener in the future than it has in the past.

Putting it all together, the USDA baseline indicates that U.S. sugar consumption growth, even at 1.2 percent a year, out paces production growth, and import needs rise, though not dramatically. Notice, however, that it would not take a very large deviation in either

the production or consumption line away from its projected path to make a significant change in import requirements.