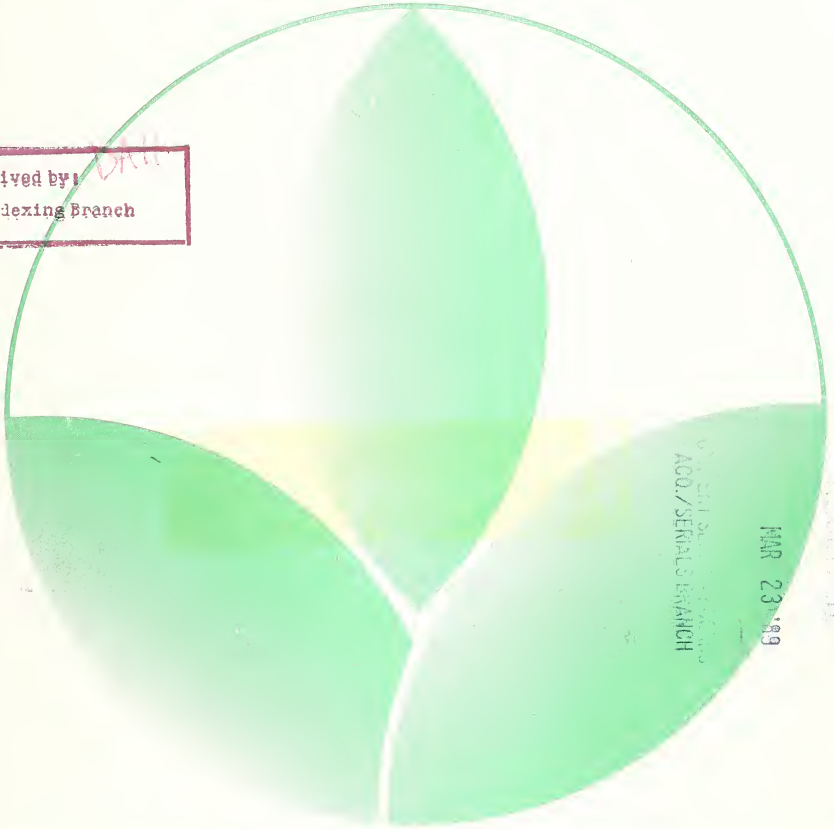
Proceedings



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SWEETENER OUTLOOK, INDUSTRY REACTION

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DOMESTIC SUGAR

Production Outlook

The USDA November production estimates for sugar beets and sugar cane caused little change in our forecasts for domestic sugar production.

Domestic cane sugar production is forecast at 3,380,000 tons raw value. The Hawaiian number at 980,000 tons, is slightly less than earlier trade estimates and would about equal the 1988 production level. Unless weather problems develop in December or January we look for Florida production to reach a new record of 1,550,000 tons. Louisiana prospects are good and we are estimating a crop of 750,000 tons, and in Texas at 100,000 tons. Weather problems prior to the completion of harvest could modify these numbers slightly in any area.

Sugar: Raw Cane Sugar Production, USA, 1,000 tons

	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89
Florida	1223	1412	1413	1476	1517	1550
Louisiana	603	452	532	671	731	750
Texas	60	81	76	91	106	100
Hawaii	1044	1062	1012	1043	979	980
TOTAL	2930	3007	3033	3281	3333	3380

Beet sugar production will be down an estimated 500,000 tons, from last year, on a crop year basis. Our current estimate is 3,450,000 tons, raw value. We have estimated the production by individual beet processing companies. It is obvious that the drought impacted most heavily in the Red River Valley, Michigan and Ohio areas, the only areas not under irrigation. For the five processors in these areas we are estimating a production decline of about 20 percent. Since beginning stocks in these areas were at minimal levels this reduction in production will not be offset by an increase in carry-in stocks.

California is the other area which will have a reduction in production. In the Imperial Valley, beet yields were reduced due to an infestation of white fly. In the Central Valley virus yellows have lowered beet yields and recovery rates, and of more importance, root rot due to extreme summer temperatures, has also reduced beet yields, lowered sugar content, and slowed down processing. Beet sugar supplies in California will be tight until the spring harvest begins in March for the over-wintered beets. It is interesting that one beet processing company in California has imported raw cane sugar and is processing this into refined sugar in conjunction with the processing of beets.

Overall we estimate domestic sugar production to be down 503,000 tons for 1988/89 from the 1987/88 level, a thirteen percent decline. And yet, as we all know, sugar supplies in the USA will, in the 1988/89 year, equal sugar demand. The USDA will see to this by adjusting the quota to cause a supply/ demand equivalence.

Stock Levels

We are using a stock figure for October 1, 1988 of 1,303,000 tons. Cane refiners total stocks on October 1 have been remarkably stable in recent years. In 1988 they were 629,000 tons, in 1987 at 634,000 tons, in 1986 at 639,000 tons, and in 1985 at 627,000 tons.

Mainland cane processors stocks have been somewhat more variable, with the level depending on raw sugar price levels during the summer. The October 1, 1988 level of 132,000 tons is the lowest since 1983, and no doubt was due to the tight quota causing raw sugar futures prices to exceed 22.5 cents/ pound in late July, against a 21.76 MSP.

Beet processor stocks were also at relatively low levels. With a production of 3,953,000 tons in 1987/88, deliveries were at a high rate and stocks were reduced to 403,000 tons on October 1, 1988. While this was an apparent reduction of 107,000 tons from the stock level of the previous year, we suspect that the reported stock number on October 1, 1987 was inflated by 50,000-100,000 tons due to the very early startup in harvest in 1987.

There are no CCC stocks of sugar.

We have reported Hawaiian processor stocks on October 1, 1988 at 139,000 tons.

The total stock level of 1,303,000 tons is well below the past two years. We judge that in setting a quota for 1989, that no consideration should be given to a further reduction in stocks for October 1, 1989.

Thus in estimating quota requirements we are using an ending stocks number, exactly equal to the beginning stock estimate.

Consumption Outlook

There are always problems in how domestic consumption is to be measured. The manner in which we measure it is to take total refined sugar deliveries by beet processors, mainland cane processors and importers. To this is added deliveries by cane refiners less exports and alcohol use, plus

deliveries by CCC to the domestic market for food use. Hawaii is included. We then add separately the exports to Puerto Rico. We do not take account of blends, or any transfers of sugar containing products for export.

There has been an optimistic feeling that sugar consumption has been increasing during the past two years, and it is true that deliveries, as we have measured them, rose from 7,806 thousand tons in 1985/86 to 8,053 thousand tons in 1986/87 and to 8,181 thousand tons in 1987/88. However, one has to be careful about projecting the increase of 247,000 tons in 1986/87 or the 128,000 tons in 1987/88 into the future. While data are not available to confirm it there are probably two reasons that increases in deliveries in those two years will not be repeated. The first is that actual use in 1985/86 was under-reported due to the "Bittersweet" problem, and with the elimination of this problem a one-time increase in reported deliveries occurred. The second is that in 1987, as world sugar prices increased and drawback values fell, there was a switch to using domestic sugar in some products, instead of world sugar, which gave an apparent consumption increase, but was really only a change in sources.

Some confirmation of a slowdown in the rate of increase in deliveries is given if one looks at a quarterly breakdown. In 1987/88 deliveries increased 128,000 tons. However, this was made up of a 116,000 ton increase in October-December, 1987, over the same quarter a year earlier, and an increase of 41,000 tons in January-March, but a reduction of 18,000 tons in April-June, and a reduction of 11,000 tons in July-September. In the last nine months the increase in deliveries was only 12,000 tons. While we are optimistic regarding continuing increases, we have set the increase for 1988/89 at 69,000 tons over 1987/88. This is about one half the increase that occurred in 1987/88 and gives a nice round figure of 8,250,000 tons for 1988/89. If one adds to this an export level of 55,000 tons to Puerto Rico, we are forecasting total refiner deliveries, excluding exports to other sources, at 8,305,000 tons, raw value.

Quota Requirements

There are no techniques for exactly estimating quota requirements. One must first consider whether a fiscal or calendar year approach is best, and then make assumptions about eventual production, how much of this production will be marketed, what will be the level of consumption, and whether or not a stock increase or decline is desired.

Our approach is as simple as we can make it and still retain adequacy.

1. A fiscal year is considered, because we cannot estimate stocks on January 1, 1989, and January 1, 1990.

2. We assume no stock change should occur in the coming year.

3. Domestic production is estimated at 6,830,000 tons.

4. Deliveries for consumption in the USA are estimated at 8,250,000 tons.

5. The imbalance, 8250-6830, is estimated at 1,420,000 tons.

6. Excess supplies from the 1987/88 quota are estimated at 100,000 tons, and sources other than refiners will deliver 20,000 tons.

7. The quota announcement in December should approximate 1,300,000 tons.

To show how this procedure works we have shown estimates for the past five years along with estimates for 1988/89 in Table SU417.

The top part of the table begins with total deliveries for human consumption in the USA, including Hawaii. From this we deduct the crop year level of beet sugar production and deliveries by importers of refined sugar, direct deliveries by mainland cane processors, and deliveries by CCC. The sum of these deliveries when subtracted from total deliveries should equal deliveries by cane refiners. Actual refiner deliveries have been close to this implied rate over the past five years. (In 1986/87 beet deliveries were greater than production due to the early startup in the fall of 1987, and in 1987/88 beet deliveries were less than production for the same reason. If adjusted, this would reduce the +75 and increase the -24 shown.)

In the bottom section of the table we show refiner deliveries and the domestic sources of those deliveries, i.e. mainland cane and Hawaii. The difference is the implied quota requirement. Except for 1984/85 (when U.S. free stocks declined 241,000 tons) this implied quota requirement has been close to actual quota imports.

For 1988/89 deliveries are estimated at 8,250,000 tons, beet sugar production at 3,450,000 tons, other deliveries at 20,000 tons, leaving a cane refiner balance of 4,780,000 tons.

If mainland cane areas and Hawaii each deliver their estimated production, then it would leave a balance to be covered by quota imports of 1,400,000 tons.

However, we believe quota imports in October-December, 1988 will exceed use by 100,000 tons as follows:

Oct-Dec, 1987 actual quota imports	229,000 tons
Jan-Sep, 1988 actual quota imports	648,000 tons
Total fiscal year quota imports	877,000 tons
Jan-Dec, 1988 assigned quota	1057,000 tons
Jan-Sep, 1988 quota imports	648,000 tons
Quota remaining for imports Oct-Dec, 1988	409,000 tons
Estimated quota requirements Oct-Dec, 1988	309,000 tons
Quota to be carried forward for calendar, 1989	100,000 tons

Thus we estimate a quota for calendar year 1989, which would cover January-September, 1989 requirements, and leave 300,000 tons available for October-December 1989 would be 1,300,000 tons.

Price Outlook

It is somewhat anomalous that even though overall supply and demand in the U.S. sugar market are designed to equal each other, the price swings from year-to-year can be wide.

The volatility is not in the price of raw sugar. From 1983/84 through 1987/88 the average level of #14 nearby futures was within 5 percent of the market stabilization price (MSP). An objective of the USDA is to create such a stability since it is assumed that this will prevent sugar from being delivered to the CCC. In 1988/89 we can only assume that the average for raw sugar prices will again be within 5 percent of the 21.80 cent/pound, MSP. This stability occurs because the trade recognizes that the USDA has ultimate power in achieving their objective and therefore if the price moves very far below the MSP buyers will support it, and if it moves very far above the MSP sellers will pressure it.

The price volatility occurs in two other areas. In the case of beet sugar a large crop requires that sales be made to points very distant from the factory. To do this beet sugar must be discounted in those areas,

a. to provide incentive for buyers to substitute for cane sugar,

b. to allow for increased freights, and

c. to provide for transshipping costs if rail car shipments must be converted to truck delivery.

Thus, fob prices for beet sugar can drop to relatively low levels, even though the overall supply/demand for all sugar in the U.S. is unchanged.

The intense competition of beet sugar in peripheral areas causes refined cane sugar prices to also decline in order to try to retain market share. But since raw sugar price levels are determined by the USDA, and cannot decline, the only way to get a price decline is to reduce refiner margins.

In 1987/88 with a 74 million cwt beet sugar crop, beet sugar sold in literally every area of the continental USA. The result was beet sugar prices, fob, gross, as low as 22.0-22.5 cents/pound, for Inner Mountain processors. This caused refiner conversions in the Northeast to drop to as low as 200 points. Over time it has also caused refiners to close refining facilities, since low margins mean economic losses.

By contrast, in 1988/89 with a beet sugar crop of about 64 million cwts, beet sugar, fob, gross, is selling at about 27.50 cents/pound for first quarter, 1989, with some suppliers reluctant to quote forward. I do not expect to see much of a decline from this level. On the West Coast prices are 29.5 cents/pound, gross, fob, and I do not expect much decline from this price level, at least until the spring harvest begins in March.

In areas normally covered by cane refiners, users can expect to see current refiner conversions of 500-600 points continue throughout the fiscal year. They also need to be concerned about actual physical supplies in the summer of 1989, due to a potential shortage of refining capacity.

We have estimated refiner capacity, by refiner, on a normal working schedule, for 1988/89. Higher margins could bring forth additional capacity in some refineries, since we are not measuring absolute capacity levels.

Our estimate of refining capacity for 1988/89 is 96.5 million cwts, refined basis. This is compared with refiner deliveries in 1987/88 and expected deliveries in 1988/89, as follows. The result is a potentially tight situation for 1988/89.

Sugar: Cane Refiner Deliveries Relative to Capacity

	1987/88		1988/89 est.	
Cane Refiner Deliveries to:	1,000 tons raw value	mil cwts refined	1,000 tons raw value	mil cwts refined
Domestic	4236	79.2	4780	89.3
Exports	437	8.2	200	3.7
Puerto Rico	55	1.0	55	1.0
TOTAL	4728	88.4	5035	94.0
Percent of Capacity		91.6		97.4

Beet Sugar: Production by Companies, 1,000 cwts, refined

	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89 est.
Amalgamated	10200	10000	10000	12500	13500	12750
American Crystal	10780	11400	12500	15100	17500	14250
Delta	800	1000	1000	650	890	750
Great Lakes			690	950	890	800
Holly	6860	8960	10100	9360	14100	13100
Michigan	3320	3700	3600	3100	3950	3800
Monitor	1060	1300	1620	1550	2100	1900
North Central	4340	4200	5600	5110	7100	4150
Spreckles	4600	5600	4900	5630	6350	5400
Union*	1740	1980	1990	2000		
Western**	6200	5660	4500	7900	7500	7600
Total	49900	53800	56500	63850	73880	64500

* Beginning 1987/88 is included with Holly

** Prior to 1985/86 data are for Great Western Sugar

Refined 1,000 tons	2495	2690	2825	3193	3694	3225
Raw 1,000 tons	2670	2870	3020	3416	3953	3450
Published Data						
Refined 1,000 tons	2522	2715	2804	3193	3694	
Raw 1,000 tons	2699	2905	3000	3416	3953	

SU211 11/21/88

Sugar: Domestic Use and Source of Deliveries, fiscal years
1,000 tons, raw value

	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89 est.
Domestic Deliveries	8578	8058	7805	8053	8181	8250
Beet Sugar Production	2699	2905	3000	3416	3957	3450
Balance	5879	5153	4805	4637	4224	4800
Other Deliveries 1/	63	105	85	43	18	20
Implied Refiner Deliveirs	5816	5048	4720	4594	4206	4780
Cane Refiner Deliveries (Reported)	5772	4991	4725	4519	4230	4780
Implied - Reported	44	57	-5	75	-24	0

1/ Importers refined, Mainland cane processors direct, and CCC

Sugar: Cane Refiner Deliveries and Source of Sugar, fiscal years
1,000 tons, raw value

	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89 est.
Cane Refiner Deliveries	5772	4991	4725	4519	4230	4780
From Mainland Cane	1758	1587	2064	2156	2447	2400
From Hawaii	1032	953	762	1104	920	980
Total Sources	2790	2540	2826	3260	3367	3380
Quota Requirements (Dels. - Source)	2982	2451	1899	1259	863	1400
Quota Imports	3030	2192	1850	1237	877	
Balance	48	-259	-49	-22	14	

SU417 11/21/88

Sugar: Deliveries for U.S. Consumption
1,000 Short Tons, raw value, including Hawaii

	Cane Sugar Ref.	Beet Sugar Proc.	Importers plus Mainland Cane Proc.	CCC	Total
1980/81					
Oct-Dec	1617	730	3	10	2360
Jan-Mar	1489	713	15	0	2217
Apr-June	1735	774	13	0	2522
Jul-Sept	1767	948	11	0	2726
Total	6608	3165	42	10	9825
1981/82					
Oct-Dec	1583	716	4	0	2303
Jan-Mar	1397	683	3	0	2083
Apr-June	1562	829	7	20	2418
Jul-Sept	1571	792	37	0	2400
Total	6113	3020	51	20	9204
1982/83					
Oct-Dec	1502	722	29	0	2253
Jan-Mar	1382	695	1	0	2078
Apr-June	1419	774	2	0	2195
Jul-Sept	1588	726	35	0	2349
Total	5891	2917	67	0	8875
1983/84					
Oct-Dec	1464	707	19	0	2190
Jan-Mar	1395	610	25	0	2030
Apr-June	1460	653	8	0	2121
Jul-Sept	1453	770	11	0	2234
Total	5772	2740	63	0	8575
1984/85					
Oct-Dec	1363	699	8	0	2070
Jan-Mar	1143	734	33	0	1910
Apr-June	1185	755	31	0	1971
Jul-Sept	1300	776	9	24	2109
Total	4991	2964	81	24	8060
1985/86					
Oct-Dec	1259	719	7	31	2016
Jan-Mar	1096	706	11	6	1819
Apr-June	1150	737	4	16	1907
Jul-Sept	1220	834	9	1	2064
Total	4725	2996	31	54	7806
1986/87					
Oct-Dec	1158	811	7	20	1996
Jan-Mar	1072	834	3	0	1909
Apr-June	1122	873	7	0	2002
Jul-Sept	1167	973	6	0	2146
Total	4519	3491	23	20	8053
1987/88					
Oct-Dec	1130	976	6	0	2112
Jan-Mar	966	983	1	0	1950
Apr-June	954	1026	4	0	1984
Jul-Sept	1186	942	7	0	2135
Total	4236	3927	18	0	8181

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WORLD SUGAR

Is the Structure Changing

Whenever one undertakes to analyze world sugar statistics the first reality to be accepted, is that the data are bad. They are incomplete, in error, and subject to large revisions. Furthermore, there are no data series available on a world-wide basis which one can finally point to and say - "these are the true numbers on production, stocks, exports, imports and consumption". Consequently, one must work within the confines of the available, if innacurate data base, and accept that errors are being made.

For my own purposes I tie everything in with F.O. Licht numbers, but not in the manner of most other analysts. While International Sugar Organization data may be considered by many to be the most accurate series available, I have great difficulty trying to make country-by-country production forecasts which coincide with the ISO calendar year base.

If one had decided upon a data base and the objective is to forecast world sugar prices, then some systems of analyses must be brought into play. In recent years those users of time series analyses have seriously questioned whether it is any longer relevant. The concern is whether or not the changing structure in recent years in the production and distribution of sweeteners, has been of sufficient magnitude to render time series analyses ineffective, if not inappropriate. My own conclusion is that there has been little structural change in the world sugar economy. There are some shocks to it, but not permanent structural damage.

Consumption Changes

In terms of consumption, world sugar continues to increase at annual rates not greatly changed from one or two decades ago. There are considerable variations in the growth rates by country, but these variations are submerged by continuous increases in the population centers of the world. These significant consumption increases are mainly due to population growth, but in some significant instances are also due to a reduction in the restrictions on sugar consumption or the availability of good substitutes. Some of the more recent changes are worthy of mention.

In February, 1986, the Brazilian government froze prices of sugar but not wages so that real prices of sugar by midyear had declined 40 percent. The result was a surge in consumption. Using Licht data, Brazil consumption, on a September-August year, ranged from 5.94 million tonnes to 6.19 million tonnes in the 1979/80 to 1984/85 period. In 1986/87 it jumped to 7.12 million tonnes, due to lower sugar prices and hoarding. It has since declined as relative sugar prices have again increased.

In the USSR sugar consumption in 1982/83-1985/86 ranged from 13.2 to 13.4 million tonnes. in 1986 as the government de-emphasized liquor consumption by closing bars and liquor shops and raising prices on liquor it stimulated sugar purchases for home distillation of liquors. USSR consumption in 1986/87 was estimated at 13.9 million tonnes, and in 1987/88 at 14.1 million tonnes.

The classic case is the USA, where Licht estimated consumption in 1979/80 at 9.62 million tonnes, but at 7.2 million tonnes in 1985/86. This decline was due to the substitution of high fructose corn syrup for sugar.

However, if one fits a linear time trend to sugar consumption in major countries or areas, it is obvious that a strong uptrend persists. To statistically fit such trend lines it is imperative that beginning and ending time periods be selected when sugar supplies were ample. In this way the results are not biased upward or downward due to a constraint on supplies. For this reason, the 1977/78-1987/88 time period was chosen.

Trend lines fitted for 35 countries (EEC considered as a country) show that a positive uptrend was present in 31 of these. The exceptions were the USA, EEC, Japan and Romania. Even the declines in EEC, Japan and Romania were very small, and in the past three years an uptrend has occurred in the USA. The annual cunsumption increase over this period, with the USA included, is 1.97 million tonnes per year. If the USA is excluded, the trend is 2.30 million tonnes per year. If the USA is excluded and an additional 77 thousand tonnes per year is attributed to the USA based on the past three years, the annual increase in world sugar consumption is 2.37 million tonnes per year.

If one ignores the shocks to the system the consumption of sugar in the world has shown close to a 2.0 million tonne increase per year for the past 25 years. That has to be termed stable.

Production

Production has the same stable nature, but the shocks are of a different nature. Weather is the most common cause and often the severest. But economic incentives are also important, at least for short periods of time.

In the United States, the prices of domestic sugar provided incentive to increase production 1.5 million tonnes from 1983/84 to 1986/87. Only India had a larger production increase over this time period. From 1981/82 to 1986/87 or 1982/83 to 1986/87 only the USSR has had a larger production increase than the USA. This was not a demand generated increase, although the USDA guaranteed that the demand would be there.

In PR China lack of economic incentive has kept sugar production from increasing to keep pace with increasing per capita consumption and increasing population. Recently the government has announced an increase in prices for cane and beets for the 1988/89 season plus additional subsidies to be paid to farmers, in an attempt to encourage production.

In India production has increased from 7.8 million tonnes in 1981/82-1984/85 (two good seasons and two bad seasons, climatically) to 9.9 million tonnes in 1987/88. A major reason is the increase in prices to growers from 14 rupees/100 kg in 1985/86 to 17 rupees in 1986/87, to 18.5 rupees in 1987/88. At the same time sugar prices to consumers were permitted to rise with the levy/free sugar ratio dropping from 65/35 in 1985 to 55/45 in 1986, and 50/50 in 1987. This means that, instead of 35 percent of the sugar being permitted to trade at whatever market prices will bring, this has been increased to 50 percent. The remainder of the sugar is price controlled.

In the USSR, not only price incentives, but technological improvements have helped to increase production. The ICT plant (Industrial Cropping Technology) has increased the use of pesticides, herbicides, and fertilizers. In addition, beginning in 1982 farmers began to be paid a bonus for a higher sucrose content of sugar beets. These actions have improved Soviet yields in recent years.

The lack of economic incentive has led to large production declines in the Philippines and Dominican Republic. This "lack" is the reduction of high-priced U.S. export quotas for these countries. So it is not only weather that causes swings in sugar production.

Changes in the Structure

There have been some structural changes occurring in the world sugar economy over time and one should expect that they will continue. These are

a. countries requiring significant net imports of sugar, and having an ability to increase sugar production, have done so.

b. countries having significant net exports of sugar, have in general decreased production, although there are a few exceptions.

If one looks at thirteen countries requiring net imports including USSR, USA, PRC, Indonesia, India, Pakistan, there has been a decided shift. In 1981/82 and 1982/83 average imports were 19.7 million tonnes for this group of thirteen. By 1986/87 and 1987/88, average imports declined to 15.1 million tonnes, or a 4.6 million tonne decline. Over the same period, production rose from 31.0 to 38.0 million tonnes, for an increase of 7.0 million tonnes. This production increase allowed for the lower imports plus the increased growth in consumption. One can expect this trend to continue. The reluctance to use foreign exchange, to pay for imports which can be produced domestically, is a great incentive to build a domestic industry.

If one looks at fourteen countries which have been major net exporters, the opposite phenomenon has occurred, with production declining. Included in this group are the EEC, Cuba, Brazil, Argentina, Dominican Republic, Philippines, Taiwan. Also included are several which were exceptions. In Mauritius, Swaziland, Thailand and Australia, exports and production both

increased over the time period.

From a 1981/82 and 1982/83 average to a 1986/87 and 1987/88 average, exports declined from 25.5 million tonnes to 22.5 million tonnes, or a 3 million tonne net decline. Production over the same period declined from 50.0 million tonnes to 45.9 million tonnes for a 4.1 million tonne decline.

Thus, there has been a decided move toward importing countries becoming

suppliers have tended to curb production for exports.

Exports versus Imports

In addition to determining whether major structural changes are occurring in world sugar, one must also contend with the manner in which data are reported.

Of serious concern is the fact that world exports do not equal world imports. Based upon ISO calendar year data from 1977 to 1987, world exports exceeded world imports in each year. The average excess for the eleven years was 796,000 tonnes per year. Since exports are treated as a demand rather than a supply, this means that over this eleven year period 8.75 million tonnes disappeared, in addition to the consumption estimates. If one uses Licht data for the 1977/78 to 1987/88 period, the average excess of exports over imports was 722,000 tonnes per year. Over the eleven years this is equivalent to an extra 7.94 million tonnes of disappearance, above the consumption estimates.

Obviously the data overestimates exports relative to imports, or overestimates production relative to consumption, or else overestimates current stock levels.

I have chosen to handle this problem by computing a disappearance number, rather than a consumption number. This, in essence, assumes that the production and stocks numbers are accurate. By adding production to beginning stocks and subtracting ending stocks, an estimate of total disappearance is computed.

Sugar Prices and Sugar Statistics

The only certain data series on world sugar is the level of futures prices. The question then arises as to whether one can use the inaccurate and incomplete data on production, consumption, imports, exports, and stocks, and make any reasonably accurate statements about price. Fortunately, we can, within some limits.

The specific price forecast is the average close of nearby world sugar futures for the January-June period.

Given the Licht data on production, consumption, imports, exports, and stocks, it is possible to determine a price level that is consistently comparable with such statistics during the January-June period. During the past nine years the use of supply/demand statistics has been capable of explainingl 90 percent of the year-to-year variation in January-June prices. The average absolute error in this period is approximately one cent/pound. This accuracy level assumes that the Licht data are know with certainty. The problem is that the actual data are not known until after the forecast period is over so we must accept that errors in the price forecasts will exist.

Outlook for 1988/89

Current estimates published by F.O. Licht indicate a production for 1988/89 of 108.2 million tonnes, on a campaign year basis.

Based on a September-August crop year basis, production is estimated by Licht at 108.5 million tonnes, consumption at 108.3 million tonnes, beginning stocks at 32.4 million tonnes, and ending stocks at 32.3 million tonnes.

While I believe there is a strong tendency for analysts to use each others data, or the same original data sources, it is always worthwhile to consider estimates from a variety of sources. These are subject to continuous revision but recent numbers are presented from some sources. Data are in million tonnes.

	LICHT		CZARNIKOW		MAN		USDA		GILL & DUFFUS	
	87/88	88/89	87/88	88/89	87/88	88/89	87/88	88/89	87/88	88/89
Prod.	104.5	108.5	104.3	107.1	104.0	107.6	103.8	107.1	104.4	107.75
Cons.	106.8	108.3	107.4	108.9	105.3	107.8	104.8	106.8	106.0	108.25
Prod - Cons.	-2.3	.2	-3.1	-1.8	-1.3	-.2	-1.0	.3	-1.6	-.50

The average of these five sources showed a production in 1987/88 of 104.2 million tonnes, a consumption of 106.1 million tonnes, and a deficit of 1.9 million tonnes. For 1988/89 the average estimates are for a production of 107.6 million tonnes, a consumption of 108.0 million tonnes and a deficit of .4 million tonnes. If such statistics turn out to be fact it does not portend a very bullish market.

Using only the Licht data as a basis for the price forecasts, results in a forecast of the average level of nearby #11 futures prices for January-June, 1989, of 10.2 cents per pound.

With March/May/July futures currently averaging near 10.0 cents/pound, it does not appear that there will be a large price move from current levels over the next six months.

World Sugar: Production, Disappearance, and Stocks
F. O. Licht Data 1,000 tonnes

Sept/Aug	Begin Stocks	Pro-duction	Supply	Disap.1/	End Stocks	End Stocks Disap.	Nearby Futures Price 2/
							cts/lb
69/70	19157	72981	92138	71014	21124	29.7	3.56
70/71	21124	71030	92154	73403	18751	25.5	4.59
71/72	18751	72176	90927	73074	17853	24.4	7.90
72/73	17853	75550	93403	76992	16411	21.3	9.19
73/74	16411	78200	94611	78231	16380	20.9	20.14
74/75	16380	77208	93588	75839	17749	23.4	25.31
75/76	17749	79855	97604	76965	20639	26.8	14.00
76/77	20639	85235	105874	80825	25049	31.0	9.10
77/78	25049	91857	116906	86306	30600	35.5	8.22
78/79	30600	90552	121152	89501	31651	35.4	8.44
79/80	31651	84324	115975	90078	25897	28.7	25.78
80/81	25897	88021	113918	88333	25585	29.0	21.31
81/82	25585	100702	126287	93036	33251	35.7	10.68
82/83	33251	101664	134915	96207	38708	40.2	8.18
83/84	38708	96373	135081	95552	39529	41.4	6.74
84/85	39529	101270	140799	101285	39514	39.0	3.75
85/86	39514	99411	138925	101989	36936	36.2	7.12
86/87	36936	103747	140683	105823	34860	32.9	7.26
87/88	34860	104442	139302	106868	32434	30.3	9.18
88/89 3/	32434	108234	140668	108351	32317	29.8	10.20

1/ Disappearance based on September-August year stocks and campaign year production.
2/ Price is average of nearby futures for Jan-June for second year shown
3/ Estimated

10/24/88 SU030B