

POLICY REFORM FOR PHILIPPINE SUGAR: IS NOW THE TIME?

By Gerald C. Nelson*

Recent developments in the world sugar market — probably the most distorted of all commodity markets — suggest that domestic policy responses in the Philippines need to be realigned towards a smooth transition to the world market environment. The paper first describe these events in the sugar sector as well as the external changes. It then investigates the nature and magnitude of efficiency losses and transfers resulting from current domestic policies. Various policy options to improve the efficiency of resource use in the sector are also proposed.

Policy reform rarely occurs in a vacuum. It typically requires some external stimulus such as an election, a change in government, or an exogenous change in the economic environment. Events in the world market for sugar — a change in the US quota system and the possibility of liberalization of US and EC sugar policies as part of the Uruguay Round of the GATT negotiations — are likely to change the economic environment for the Philippine sugar sector. The question this paper addresses is whether these external changes require a domestic policy response, and if so, what are the options. The paper begins with a brief description of recent developments in the sugar sector and of the external changes. The next topic is a discussion of current domestic policies affecting sugar. Finally the pros and cons of some possible alternatives are discussed. The reader is left to evaluate the relative merits of the various policy options, and the likelihood that they will be adopted.

Government intervention in the Philippine sugar sector is probably as old as the sugar sector itself although types of intervention

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have changed over time.¹ In early 1990, the government intervened in the sugar sector in five ways to allocate the US quota, to restrict imports quantitatively and with taxes, to collect the Social Amelioration Fund fee on production, and to include lands on which sugar is now grown in the comprehensive agrarian reform program, with the potential breakup of many of the large estates.

Four groups — cane growers and millers, sugar workers, consumers, and food processors — have a stake in any reform, have some political power, and would be affected in different ways. Under the Aquino government, cane growers and millers have received both the rents from the US quota and transfers from consumers. Sugar workers are both the most well organized labor group in agriculture and the group that suffered tremendous hardship in the mid-1980s when the disruptions of the end of the Marcos era caused the collapse of the sugar sector. Sugar consumers have been implicitly taxed because domestic prices have been well above world prices since the mid-1980s. Sugar makes up only about three percent of the average consumer expenditure so that income effects of sugar price level and variability changes are small for the average consumer. These effects are larger for poor consumers, however, and large price fluctuations of a visible commodity are a potential source of political unrest. Finally, food processors use sugar in varying quantities in their products and high domestic sugar prices raise their cost of production and lower their competitiveness in world markets.

Five distinct but related policy issues need to be addressed. First, who should get the rents generated from the US quota? These rents vary directly with the size of the quota and inversely with the price of sugar in alternate export markets. Second, should the domestic allocation system and the production sharing system be continued? Third, to what degree should the domestic consumer price reflect the level and variability of the world price? Fourth, what kind of welfare program, if any, should be in place to protect sugar workers, for example, from variations in their employment and wages due to variations in sugar prices, and to help them find alternative employment? Finally, should there be any change in the application of the land reform program to lands on which sugar cane is grown?

¹See Castro, McCoy; articles in the May 1971 issue of the Philippine journal *Solidarity*; and Nelson for descriptions and analysis of earlier sugar policy.

Recent Developments in the Sugar Sector

The start of the Aquino government found the sugar sector in total disarray. The mismanagement of the previous government, both of domestic marketing of sugar and international marketing arrangements, had left many planters in default on their sugar loans. As a result, they were unable to finance replanting. Area planted to sugar reached a post-World War II low (Table 1). Sugar consumption was also low because per capita incomes had declined. The last half of the 1980s saw a gradual recovery of both production and consumption. Production rose from a low of 1.3 million mt in crop year 1986/87 to almost 1.7 million mt in 1988/89. Consumption recovered from a second half low of 1.1 million mt in 1985/86 to 1.37 million mt in 1988/89.

Table 1 — Sugar Production, Consumption and Trade

| (Sep/ Aug) | Cane | | | Sugar | | Consumption (000 mt) | Net Exports (000 mt) |
|---------------|------------------|------------------------|------------------|------------------------|------------------|-------------------------|-------------------------|
| | Area (000 ha) | Production (000 mt) | Yield (mt/ha) | Production (000 mt) | Yield (mt/ha) | | |
| 74/75 | 513 | 24,596 | 47.9 | 2,394 | 4.66 | 903 | 1357.0 |
| 75/76 | 553 | 29,315 | 53.0 | 2,875 | 5.20 | 687 | 1217.0 |
| 76/77 | 548 | 27,220 | 49.7 | 2,797 | 5.10 | 1,022 | 2149.3 |
| 77/78 | 451 | 23,756 | 52.6 | 2,417 | 5.35 | 1,106 | 1590.0 |
| 78/79 | 419 | 22,879 | 54.6 | 2,349 | 5.61 | 1,056 | 998.2 |
| 79/80 | 402 | 22,371 | 55.6 | 2,268 | 5.64 | 1,179 | 1619.5 |
| 80/81 | 395 | 22,151 | 56.0 | 2,223 | 5.62 | 1,159 | 1588.8 |
| 81/82 | 405 | 23,000 | 56.8 | 2,349 | 5.80 | 1,051 | 1105.6 |
| 82/83 | 410 | 23,653 | 57.7 | 2,457 | 5.99 | 1,036 | 1214.0 |
| 83/84 | 416 | 25,413 | 61.1 | 2,320 | 5.58 | 1,295 | 573.9 |
| 84/85 | 384 | 18,131 | 47.2 | 1,731 | 4.50 | 1,361 | 877.3 |
| 85/86 | 308 | 15,212 | 49.4 | 1,447 | 4.70 | 1,076 | 278.1 |
| 86/87 | 269 | 13,325 | 49.5 | 1,337 | 4.97 | 1,335 | 156.2 |
| 87/88 | 315 | 15,750 | 50.0 | 1,575 | 5.00 | 1,360 | 105.0 |
| 88/89 | 335 | 16,750 | 50.0 | 1,675 | 5.00 | 1,369 | 282.0 |

Source: Sugar Regulatory Authority, Bureau of Agricultural Statistics.

In 1986, NASUTRA was replaced with the Sugar Regulatory Administration (SRA). One of the first acts of the SRA was to dismantle NASUTRA's marketing monopoly — NASUTRA had a policy of buying all sugar produced in the country and handling domestic and international marketing itself (see Nelson, 1988). SRA reverted to the policies in force before 1973 (see below for more detail on SRA policies).

World sugar prices historically have been volatile (Figure 1). The previous two price peaks were reached in 1974, just as the US

temporarily ended its quota system, and in 1980. After each peak world sugar prices plummeted.

Forecasting world sugar prices is not a goal of this paper, but it is assumed that the previous pattern will repeat itself eventually. Of course, this projection assumes that there is no change in protection levels provided to domestic sugar around the world.

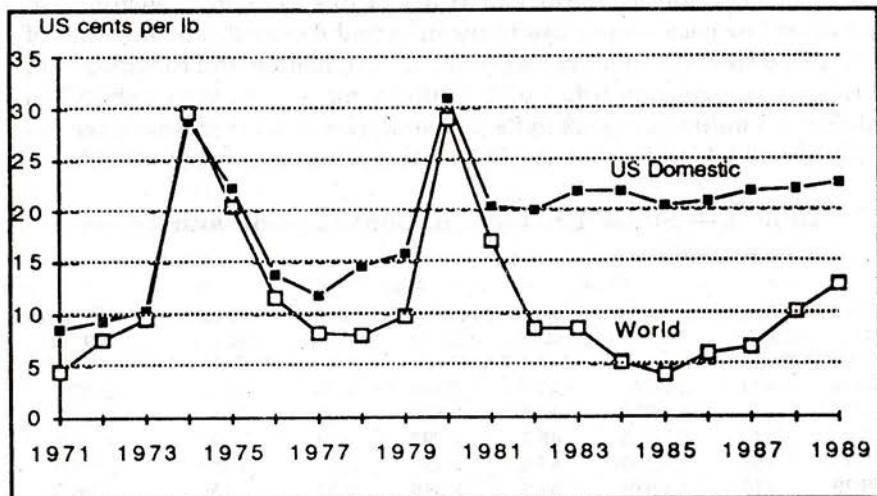


Figure 1 — US and World Sugar Prices

Changes in the World Market for Sugar

Policy changes rarely occur without some external stimulus. In the case of the sugar sector, changes emanating from the world market — the change in the US sugar quota system, the Uruguay Round of the GATT — might provide such a stimulus.

Changes in The US Sugar Quota System

In June 1989, the GATT ruled that the US mechanism of regulating sugar imports — an absolute quota — was not in compliance with GATT rules. The US accepted that finding and agreed to bring its import policies into compliance.

The principal goal of US sugar policy has been to support and stabilize the incomes of US farmers who grow sugar cane and beets².

²See Barry, 1990 for a brief history of US sugar policy and details about current policies.

Two policy instruments are used — an import quota and the “loan rate.” The US sugar import quota was originally set up in 1934, temporarily suspended in 1973, and reinstated in 1982. The “loan rate” provides a floor price for sugar.³ The Food Security Act of 1985 included the key provision that the sugar program operate at no cost to the government. This meant that the quota had to be set so that supply plus imports were equal to demand at a US wholesale price at least as high as the loan rate to ensure that farmers would not default on their crop loans.⁴ Together, the loan rate and the quota ensure that the mill gate price of sugar does not fall below a level mandated by Congress, 18 cents per lb, raw value, in 1990. Because the loan rate is well above the level at which it becomes profitable to produce high fructose syrup from corn (HFS), HFS has replaced sugar in an increasing number of US markets for sweeteners.⁵ US consumption of sweeteners made from corn (mainly HFS) grew from 4.45 million short tons in 1980 to 8.68 million short tons in 1989 (USDA, May 1990). Sugar consumption, on the other hand, dropped from 9.52 million short tons to 7.74 million short tons in 1989, and the import quota has been gradually reduced.

Shares of the quota are allocated to sugar-producing countries around the world. The allocation mechanism is based primarily on each country's historical export record, with changes in the quota usually being allocated proportionally. However, political considerations play a role as well. For example, in the early 1960s the Cuban share of the quota was given to other quota recipients when Castro took power. In 1983, Nicaragua's quota was reallocated to El Salvador, Honduras and Costa Rica. In 1986, the South African share of the quota was given to the Philippines. The Philippine share of the quota was 25.8 percent in 1989.

³The loan rate program is a part of the income support policies for the most important agricultural commodities in the US. The US government provides farmers a loan on the basis of commodity in the warehouse. The amount of the loan is based on a floor price, also known as the loan rate. If the market price when the farmer decides to sell is below the loan rate (inclusive of interest payments and marketing costs), the farmer can default on the loan and turn over his crop to the government. Hence, the loan rate acts as a floor price. In recent years, the loan rate has been well below the world market price for most crops, except sugar.

⁴The loan rate mechanism for cane works somewhat differently than for beet producers, but the principle is the same.

⁵Fructose is a sugar which occurs naturally in some fruits and vegetables and can be made from starch. High fructose corn syrup is a syrup made from corn starch that contains a large percentage of fructose. HFS is usually sold with either 42 percent, 55 percent or 90 percent fructose content.

In responding to the GATT finding, the US Administration weighed several considerations. First, maintaining the no-cost provision has a very high priority because of the large federal deficit. Second, US sugar producers have a long history of being able to generate political support for their industry. Third, the development of a large HFS market, which now uses about 10 percent of US corn production and has a production cost of around 15 cents per lb, had made corn producers and processors allies of the sugar producers. Fourth, many countries have distortionary sugar trade policies and these potentially could be brought to the table in the current GATT negotiations.

On October 1, 1990, the US implemented a "tariff rate quota" for sugar (USDA, September 1990). Under this system, annual imports below a certain level (initially set to 1.8 million short tons (1.72 million mt) in the first year, and then raised to 2.35 million short tons (2.1 million mt) on December 3, 1990) would face a low tariff (0.625 cents per lb., raw value, in the first year). These lower-duty imports of sugar for domestic consumption will vary with estimates of US sugar production, consumption, and stocks. Imports beyond that amount would be allowed, but would be subject to a much higher tariff (16 cents per lb in the first year). The crucial difference between this system and the current quota is that in principle, there is no quantitative limit on imports, and the initial high tariff on the second tranche of imports could be used as a bargaining chip in future trade negotiations.

The Uruguay Round Negotiations

For the first time in the history of GATT negotiations, agriculture was made a high priority in the Uruguay Round. And unlike negotiations in previous Rounds and for other sectors, all parties agreed that policies which affect trade flows, whether directly trade-related or not, should be subject to negotiation. In other words, domestic policies which affect production levels and therefore international trade are to be explicitly included.

Both the EC and the US have domestic sugar prices that are stabilized at a level above the world price, and selected LDCs are given limited access to the highest domestic prices in those countries. A possible outcome of the GATT negotiations is that both the EC and the US would agree jointly to lower their protection on sugar, and the EC would allow imports of HFS at low or no duties. EC and US consumption of sugar and EC consumption of HFS might increase slightly because of the lower domestic price, but demand for sugar in those countries is very price-inelastic. However, domestic production in the two countries,

currently 6 million mt in the US and over 15 million mt in the EC (together about 20 percent of total world production) (USDA, May 1990), would decrease substantially after an initial adjustment period.

The important, unresolved issue is whether the world price of sugar would drop below the break-even point for HFS, around 15 cents per lb. If it did this, sugar would replace HFS in a wide variety of uses. US HFS and other corn-based sweetener production was about 8 million mt in 1989 (USDA, May 1990). If the sugar price fell below the HFS break-even point, sugar imports to these two countries would be likely to rise substantially.

Government Intervention in the Sugar Sector

Government intervention in the sugar sector is probably more pervasive than for any single other crop. The original impetus for this intervention was the need to ensure that the Philippine share of the US quota was met, and the quota rents were allocated among cane growers and millers. In addition, legislation has been passed periodically that attempts to share some of the quota rent with workers in the sector as well.

Quota Allocation and Production Sharing

The US quota system has resulted in very large transfers from the US to the Philippines (Table 2). The amount varies, depending mainly on the size of the Philippine share and the world price (the US price fluctuates little). Since the quota was reinstated in May 1982, the largest rent was \$109 million in 1984 with rents in the late 1980s of about \$20 million per year.

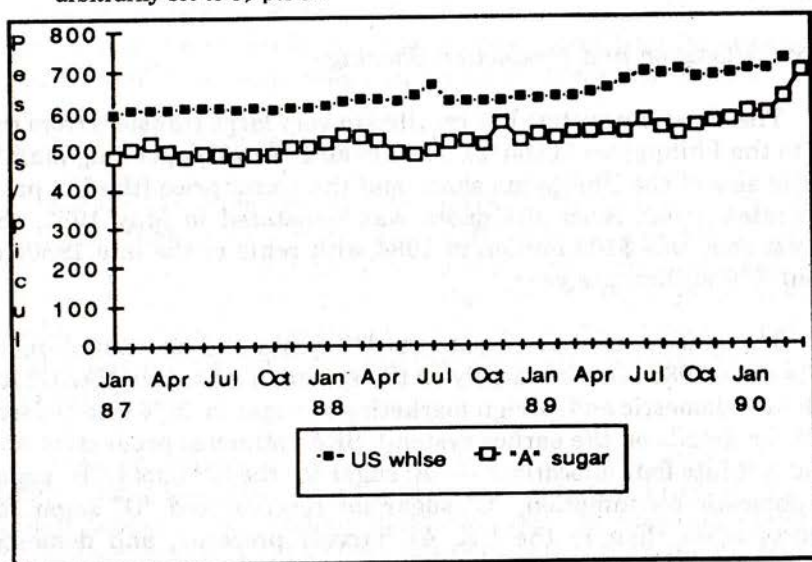
The system used to allocate the US quota and associated quota rents since 1986 is based largely on the system used before NASUTRA took over domestic and foreign marketing of sugar in 1974 (see Nelson, 1988 for details on the earlier system). SRA estimates production and divides it into four allocations — "A: sugar for the US quota, "B" sugar for domestic consumption, "C" sugar for reserve, and "D" sugar for exports other than to the US. As harvest proceeds, and domestic demands can be better estimated, sugar in the C allocation can be moved to the B allocation. In addition, the D sugar allocation is either converted eventually to A or B allocations or in some periods could be purchased by domestic food processing firms for use in food products destined for export. When cane is milled, farmers and millers receive warehouse receipts called *quedans* for each category. They share the

Table 2 — Exports to the US and the Resulting Quota Rents

| Year | Exports to US (mt) | Prices | | Quota Rent | |
|------|--------------------------|--------------|-----------------|------------|-----------|
| | | US (¢/lb) | World (¢/lb) | (mill. \$) | (mill. P) |
| 1982 | 215,378 | 20.09 | 8.42 | 38.1 | 325.5 |
| 1983 | 218,590 | 21.99 | 8.49 | 47.5 | 527.7 |
| 1984 | 383,582 | 21.81 | 5.18 | 109.7 | 1,832.7 |
| 1985 | 197,418 | 20.50 | 4.05 | 55.7 | 1,036.5 |
| 1986 | 217,410 | 20.95 | 6.06 | 53.9 | 1,098.4 |
| 1987 | 127,148 | 21.83 | 6.77 | 32.0 | 657.9 |
| 1988 | 139,950 | 22.12 | 10.17 | 25.6 | 562.1 |
| 1989 | 161,234 | 22.75 | 12.82 | 22.4 | 486.1 |

Sources: Exports — 1982-86, *Sugar Yearbook*, International Sugar Organization; 1987-89, Sugar Regulatory Administration. US wholesale price — No. 14 futures price or equivalent. World price - bulk sugar fob and stowed at greater Caribbean ports.

Note: The quota rent is derived as the difference between the US wholesale price (less import tariff of .625¢ per lb) and the world price plus a shipping charge, arbitrarily set to 3¢ per lb.

**Figure 2 — US Wholesale Price (less tariff and "A" Sugar Prices)**

quedans in a ratio that varies from 60 to 70 percent for the planter and 40 to 20 percent for the miller, depending upon the mill. They are free to dispose of these quedans to any buyer. However, A sugar can only be exported, B sugar can only be used in the domestic market, C sugar

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cannot be withdrawn from the warehouse (until it is reclassified as A or B sugar), and D sugar can only be withdrawn for food processing for export (or reclassified).

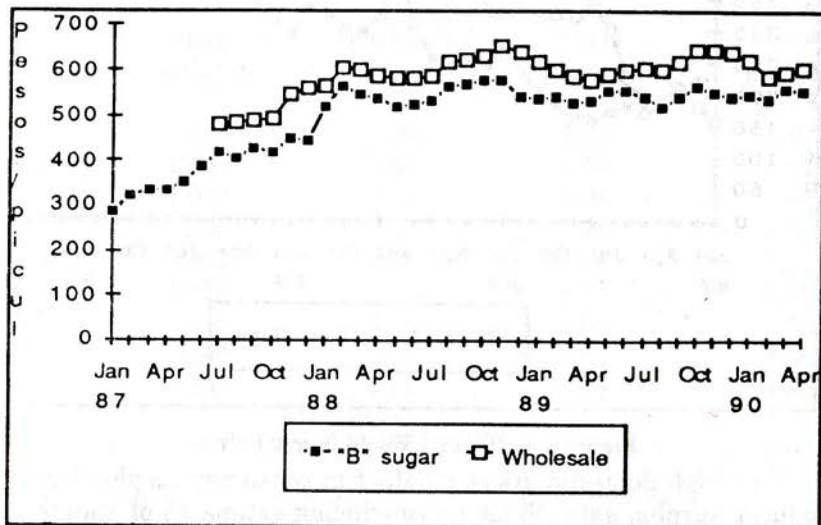


Figure 3 — "B" and Wholesale Sugar Prices

Movements of prices of the various allocations are closely correlated with respective markets, as one would expect with a free market in sugar allocations. The margins between "A" sugar and the US price less tariff and "B" sugar and the wholesale price are small and presumably reflect transportation costs from the mill to the respective market (Figures 2 and 3). In the few periods when "D" sugar has been sold in the domestic market to food processors for reexport, its price has generally moved closely with the world sugar price, but with some deviations (Figure 4).

Domestic Price Control

In 1990, domestic prices were insulated from world prices in two ways — a 50 percent tariff and administrative regulations limiting imports. The principal effect of these policies was to keep consumer and producer prices well above world prices. This set of import policies also tended to keep domestic prices more stable than world prices.

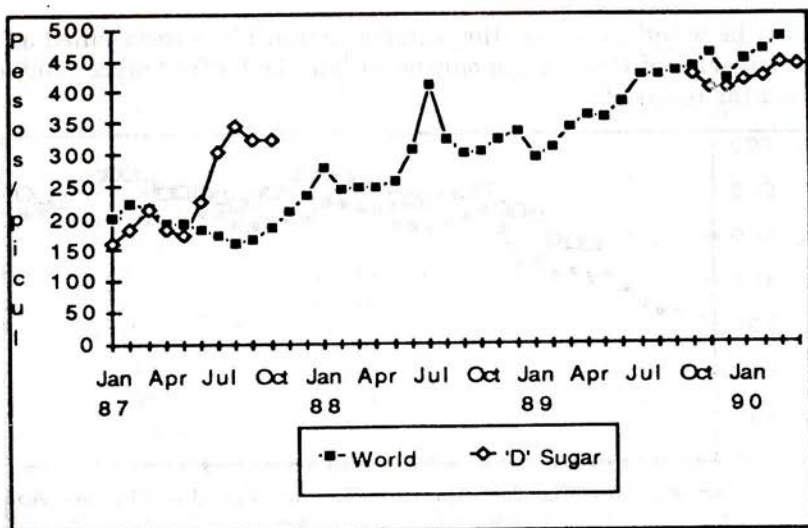


Figure 4 — "D" and World Sugar Prices

The high domestic prices resulted in consumer surplus loss and producer surplus gain. Since no convincing estimates of supply and demand elasticities are available, we have calculated the value only of the rectangle associated with consumer surplus loss as an income transfer to producers (Table 3).⁶ The amount of income transferred depends on the level of domestic and world prices. In 1981, when world prices were at a peak producers subsidized consumers. More recently transfers from consumers to producers have been on the order of 4 to 6 billion pesos per year. The real value of consumer expenditures is reduced, both on direct sugar purchases and because the cost of foods containing sugar is increased. In addition, food companies, especially smaller firms who find it difficult to take advantage of the duty drawbacks or access to "D" sugar, are put at a disadvantage relative to exporters from other countries who can buy sugar at the world price.⁷

The Social Amelioration Fund

The first formal attempt to help sugar workers share in the quota rents was set up in the late 1960s. A fee of P1.00 per picul (63.25 kg) was collected on all sugar produced, of which 90 percent went into the Social Amelioration Fund (SAF) and 10 percent to a trust fund. The Fund was to be distributed as bonuses to sugar industry workers and

⁶This approach underestimates consumer loss by the amount of the deadweight triangle.

⁷Food processors exporting food containing sugar are entitled to buy "D" quota sugar or obtain duty drawbacks on imported sugar. However, the cost of the paperwork necessary to make use of these facilities is so high that only large firms make use of them.

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Table 3 — Transfers from Consumers to Producers

| Year | Consumption (Mill. mt) | Price | | Transfer (mill. P) |
|------|---------------------------|---------------------|-----------------|-----------------------|
| | | Wholesale (P/kg) | World (P/kg) | |
| 1981 | 1,159 | 2.20 | 2.94 | -856 |
| 1982 | 1,051 | 2.56 | 1.58 | 1,026 |
| 1983 | 1,036 | 2.87 | 2.08 | 819 |
| 1984 | 1,295 | 5.23 | 1.90 | 4,306 |
| 1985 | 1,361 | 6.88 | 1.66 | 7,112 |
| 1986 | 1,076 | 6.46 | 2.72 | 4,030 |
| 1987 | 1,335 | 7.20 | 3.06 | 5,522 |
| 1988 | 1,360 | 9.60 | 4.91 | 6,384 |
| 1989 | 1,369 | 9.66 | 6.13 | 4,831 |

The transfer is domestic consumption times the difference between world and domestic prices.

Sources: Consumption and wholesale prices from SRA; world prices, private communication from Connell Commodities, but similar to the FAO world sugar price.

to the trust fund. The fee was increased to P2.00 in 1982, where it remains. Until the mid-1980s most of this amount was held by the Republic Planters Bank (which did most of its business with the sugar sector and was run by one of Marcos' close business associates) and spent by the Bureau of Rural Workers of the Ministry of Labor and Employment on livelihood projects rather than distributed as bonuses. Shortly after it took control, the Aquino government reinstated the system of paying out a majority of the SAF as a bonus.

The goal of the SAF is to improve the welfare of both sugar mill and plantation workers. Many of the mill workers are members of some labor organization while hired plantation workers are generally landless, temporary, and unorganized. In a recent study, Lopez-Gonzaga reported that the average monthly income of sugar workers in Negros Occidental in 1987 was P792 (P9,504 annual equivalent) in current prices. According to the Family Income and Expenditures Survey, the average household income in that region for 1988 was P24,845 per year, expressed in 1985 prices. This makes the average income of sugar workers in Negros only about 35 per cent of the region's average household income, which certainly makes them one of the most wretched of the poor. Statistics such as these explain why sugar plantation

workers have long been identified as prime candidates for affirmative social action by the government.

As part of the institutional reforms made by the Aquino administration, most of the proceeds of the SAF are turned over to the sugar producers association for disbursement as cash bonuses to the workers by the planters rather than channeling them all through the Bureau of Rural Workers. The government agencies in charge of supervising and monitoring the collection and disbursement of the fund are the Bureau of Rural Workers (BRW) under the Department of Labor and Employment (DOLE) and the Sugar Regulatory Administration (SRA). Based on an interview with an official at the BRW, a rough estimate of recent SAF collections is about P45 million a year, of which about P38 million are disbursed to workers. The undisbursed amounts in a given period are kept in the accounts of the planters, who are permitted under existing guidelines to hold on to these amounts for a maximum of two years.

Without a detailed examination of the fund, it is difficult to ascertain its effectiveness. However, the transitory nature of sugar workers and the limited enforcement staff of the BRW would make it difficult for even the most efficient of agencies to utilize the funds effectively. Many of the temporary workers are migrant workers from neighboring provinces for whom the cost of returning to collect the cash bonuses can outweigh the value of the bonus. In the monitoring of the special payroll for the cash bonus, the BRW has limited information on legitimate beneficiaries. The consequence is that it is unclear how much of the benefits of the SAF actually go to the intended beneficiaries, although actual payments to mill workers are probably closer to intended payments than are actual payments to plantation workers.

In late 1989 legislation was proposed that would increase the fee from P2.00 to P5.00 per picul. Of the revenues 70 percent would be distributed as a cash bonus and 30 percent would go to DOLE for a variety of purposes. As of summer 1990 that legislation had not passed.

Comprehensive Agrarian Reform Program

Attempts at land reform in the Philippines have had a long history, but not much success (see Balisacan, 1990 and Hayami, et al., 1990). A crucial element of previous land reform programs was that only land used for particular crops — generally rice and corn — was the target of land reform efforts. In particular, land on which sugar cane was grown was exempt from land reform. Whatever the political

rationale for this approach to land reform, an important disadvantage of this approach from the point of view of economic efficiency is that landowners are discouraged from growing crops targeted for land reform, even if those crops make the best use of the land and are the most profitable. The Comprehensive Agrarian Reform Law (CARL) moves away from that tradition by including land typically devoted to a wide variety of crops — in particular, land on which sugar cane is grown.

Sugar cane production is characterized by large average farm size and a skewed (toward large farm size) distribution of holdings (Table 4). The average sugar farm size is 9 hectares while rice and corn farms average less than three hectares. Over 4 percent of sugar cane farms have more than 25 hectares, while less than 0.5 percent of rice and corn farms are that large.

**Table 4 — Size Distribution of Rice, Corn,
and Sugar Cane Farms, 1980**

| | Total Area (mill. ha) | Ave. Farm Size (ha) | Percent of farms with | | | | |
|------------|--------------------------|---------------------------|-----------------------|------------|------------|--------------|--------|
| | | | <3.0 ha | 3.0-4.9 ha | 5.0-9.9 ha | 10.0-24.9 ha | >25 ha |
| Rice | 3,755 | 2.3 | 71.3 | 16.8 | 8.7 | 2.8 | 0.4 |
| Corn | 1,955 | 2.6 | 64.6 | 19.0 | 12.2 | 3.8 | 0.4 |
| Sugar cane | 313 | 9.0 | 56.3 | 19.8 | 12.6 | 7.1 | 4.1 |

Source: National Census and Statistics Office, *Census of Agriculture, 1980*, as reported in Balisacan.

The economic argument for land reform arises from the small-but-efficient hypothesis based on work by T.W. Schultz and others on the relative technical efficiency of small and large farms. As a general rule, small farms are more technically efficient than large farms. This result is typically explained by reference to some form of X-inefficiency such as supervisory costs of hired labor. Hence, in addition to any distributive justice arguments for land reform, an economic efficiency argument is added.

It is sometimes argued that sugar cane production is different from the crops usually examined in studies of farm size and efficiency. In particular, the argument is made that the mechanized system of cane cultivation represents the most efficient production technique and that it requires large farm sizes over which to spread the fixed costs of the equipment. This argument has never been put to any close

scrutiny. Only two studies have made any attempt to examine the relationship of efficiency and farm size (Cabanilla, 1975; Nelson and Agcaoili, 1983). Their findings, which represent only an indirect test of the relationship, are that some economies of scale exist but that they are not large; that is, the optimum farm size is well below the size of most of the large cane farms.

Policy Options

One policy option always available is to maintain the status quo. In the discussion that follows, that option is presumed and therefore not discussed explicitly. In all cases the discussion is limited to options that would improve efficiency of resource use. Furthermore, it is assumed that the world price is the best measure of the social opportunity cost of domestic production.

Quota, Rent Distribution, the Domestic Allocation System, and Production Sharing

The resources transferred via the US quota are fundamentally another form of foreign assistance. For historical reasons, all of this assistance has been transferred to producers, although there is nothing in the nature of the quota that requires this to be the case. The effect of the quota on resource allocation depends on whether it alters prices at the margin. In the mid-1980s, when production was low and the US quota not entirely filled, the answer was yes. Since 1987, the quota has been filled, and the effect on domestic production is ambiguous. The essence of the sugar allocation system currently is to treat domestic consumption as the market of last resource. For the industry as a whole, the marginal price of sugar is the domestic price. However, each cane grower is apparently able to produce as much as he desires, and receive a fixed percentage of the US quota. It is possible that equilibrium production at the current domestic price is just equal to the US quota plus domestic consumption, but this is unlikely. A more likely explanation is that the domestic price level is high enough to generate excess profits, but the production response is sufficiently slow (perhaps because planters are reluctant to make investments until the effects of the CARL are clear) that production remains in disequilibrium. If this is true, it is likely that SRA will have to exercise its authority to limit cane production in the near future.

With existing policies, none of the rents of the US quota are captured by the government. It would be possible to capture a large part of the rent, for general revenues or to assist structural adjustment

in the sugar sector, if the quota were either auctioned off or sold to the private sector. The effect would be to lower the price received by producers to the domestic price, since quota buyers would have no incentive to pay more for the quota than the difference between the US price and the domestic price.

The four-way allocation of domestic sugar production owes its existence to the need to deal with the US quota. Prices of A, B, and D sugar quedans move closely with their market price equivalents and a competitive market appears to have developed since SRA allows "swapping" of quedans. It is possible that the reallocation process (for example, C quedans to B quedans) results in some inefficiencies, but it was not possible to determine if that was the case. However, the main purpose of this allocation system is to deal with the US quota rents. If the quota is auctioned, and there remains no distinction at the mill between sugar destined for the US and for the domestic market, then it is difficult to find any justification for the retention of the allocation system.

The production sharing system also owes its existence in large part to the US quota. It is a straightforward mechanism for allocating quota rents to producers and mills. It also acts to share risks among producers and millers with the attendant pros and cons. If cane production or sucrose content falls, or mill efficiency declines, both farmers and mill share in this loss. However, the sharing system has the disadvantage that it discourages investments both by millers to improve the extraction rate and by planters to improve the sucrose content of the cane or to increase yield. Any improvement on the part of one party is automatically shared by both parties. As a result, investments by both mills and farmers are suboptimal.

Two alternatives have been proposed to the production sharing system to address the issue of suboptimal investment. In the first, a cane market would be established and a cane price found. All sugar produced would belong to the mill. In the second, a milling fee with a minimum extraction rate would be negotiated among planters and millers. All sugar would belong to the farmer. Both options place all returns to investment (and risk) with the production activity where they arise. Hence, the choice between the two would have to be based on grounds other than proper allocation of risk and return. In either, a new mechanism would have to be found to allocate the US quota rent, if it were not extracted via an auction.

Domestic Price and Import Controls

The instruments used to achieve domestic price control have had two effects. They raise the level of domestic prices and reduce domestic price variability relative to world price variability by divorcing the domestic market from the world market. It is difficult to find any efficiency arguments for continuing to maintain sugar prices well above the world prices.

Two arguments — one economic, one political — have been made for stability of the domestic sugar price as an important policy goal. First, "extensive" variability in the domestic sugar price and risk aversion will keep cane growers and millers from making optimal investment decisions. Second, if periodic spikes in the world price were allowed into the domestic market, consumer unrest would occur. It is difficult to assess the importance of either of these two reasons. Several factors affect the investment climate in the sugar industry — price uncertainty, access to credit, milling arrangements, the peace and order situation, and the land reform program — the relative effects of each are unclear. The effect of a sugar price peak on consumer satisfaction with a government also depends on many factors — general economic climate, distribution of income, and whether its timing is such that it becomes a political issue in an election.

The current approach to stabilizing domestic prices is to combine stock management with administrative actions and periodic imports. It is possible, at least in theory, to achieve stability with a purely border measure — a variable levy — which has the potential to reduce the cost of operations and the likelihood of corruption. Once the appropriate domestic price level is determined, a levy on imports or exports equal to the difference between the policy-determined domestic price and the cif price of imports or fob price of exports is applied. If the difference becomes negative a subsidy would be paid. The levy would vary with the changes in the world price, as often as daily.

The implementation of a variable levy scheme faces three difficulties. The first is the choice of domestic price. One proposal has been to use a moving average of the world sugar price over a period of seven to ten years, based on the argument that this is a good measure of the long-run price of sugar. The second difficulty is how often and on what basis to adjust the levy. Little analysis has been done on this issue. The third difficulty is that if an average world price is chosen, periodic subsidies would have to be paid. Over the long run, the sum of the levies and subsidies should be roughly equal to zero, but it is possible

that there would be long periods when the balance was positive or negative.

Social Amelioration Fund

At this point, it is not clear whether the current implementation of the SAF has problems or whether some alternative form of government intervention would be more desirable. Certainly the small number of staff at the BRW makes it difficult to monitor effectively the disbursements of SAF funds. One possible modification of the current program would be to require that any interest on undisbursed SAF funds should revert to the government.

It is unclear that an increased fee to fund larger SAF payments would result in additional plantation worker compensation. Despite legislation mandating a minimum wage for sugar workers, it seems likely that their actual wage approximates the wage rate in other agricultural work. Hence, an increase in SAF payments might well result in lower wage payments and no net effect on worker compensation.

A more radical change in the use of the SAF would be to use part or all of it to finance the transfer of sugar lands to sugar workers under the land reform program. This would have the advantage of providing at least some sugar workers with a tangible physical benefit from the SAF. Obviously, a great deal of analysis is necessary to determine if this is a feasible option.

Land Reform for Sugar Lands

There apparently remains some uncertainty as to timing and extent of implementation of land reform for sugar lands. This uncertainty reduces the incentive to invest by planters and the value of their land as collateral for long-term loans to improve productivity.

Any change in the application of the CARL to land currently planted to sugar is unlikely to occur without substantial review and modification of the overall land reform effort. However, if such a review did take place, efficiency of resource use in the sugar sector could be improved either by an acceleration of land distribution or exempting sugar lands from future land reform efforts. Either of these approaches would reduce the current uncertainty and improve productivity of the resources devoted to sugar production and processing.

Conclusions

The world sugar market is probably the most distorted of all commodity markets. Countries around the world intervene to alter sugar market outcomes. For this reason it is the market that is likely to see the most changes if world agricultural trade is liberalized. In the Philippines, the distortions caused by US and domestic sugar policies have resulted in substantial transfers to producers from the US quota and from consumers. Recent events in the world trade in sugar suggest that policy changes in the Philippines are likely to be needed if a smooth transition to the new world market environment is to be made. Furthermore, transition periods also provide an environment most conducive to making welfare and efficiency improving reforms. The purpose of this paper has been to indicate the nature and magnitude of efficiency losses and transfers that result from the current constellation of policies. It has also suggested a variety of policy options that would improve efficiency of resource use in the sector. Whether or not any of these policies are adopted probably depends upon events external to the domestic sugar market, either in the world market or in the political arena.

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