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THE PAKISTAN SUGAR INDUSTRY

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PREFACE

This policy briefing paper has been prepared by the Economic Analysis Network (EAN) Project to demonstrate to a broader audience of agricultural policy formulators, analysts, and other interested agricultural specialists the practical agricultural policy implications of technical economic studies undertaken by the EAN on this subject. The paper forms part of a series of policy briefing papers being prepared by the EAN Project to strengthen the economic capabilities of the newly formed Economic Wing, Ministry of Food, Agriculture, and Cooperatives. The Economic Wing has been organized to replace the Planning Unit. More information on the Economic Wing's agricultural policy research programs can be obtained by contacting:

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1. Introduction

The sugar industry in Pakistan has emerged from a relatively small base at the time of independence to a status of importance in both the agriculture and agribusiness sectors. Sugarcane is the country's second largest cash crop after cotton and the source for virtually all the sweeteners domestically produced. Although it occupies only 4% of the total cropped area, sugarcane accounts for over 10% of the gross value added by all crops. In agribusiness, sugar manufacturing is a major industry ranking second to textiles in total sales.

The significance of the sugar industry, however, derives not just from its size, but from the fact that it produces an important item of household consumption. While expenditures on sugar and other sweeteners represent only about 8% of total household expenditures on food, sugar is regarded by consumers as an essential commodity like vegetable ghee or flour. As a result, sugar shortages or sudden price increases have provoked strong consumer reactions in the past.

A major policy goal of the Government of Pakistan in the agriculture sector has been to achieve and maintain self-sufficiency in sugar production. This has led it to set support prices for sugarcane that make it competitive with other crops in farm production. At the same time, government policies have encouraged sugar manufacturing by maintaining high domestic prices relative to the cost of imported sugar through a government monopoly, and later regulatory duty, on imports. On the demand side, high sugar prices have kept consumption lower than would have been the case otherwise. These policies have resulted in a continuous, but not necessarily steady, increase in sugar production to the point that Pakistan, today, stands at the threshold of self-sufficiency in sugar.

At the time of going to press, the GOP has announced a new tax policy for the sugar industry in its budget proposals for 1989/90. The main features of this policy, which is yet to be implemented, are: (a) import duty on sugar has been removed, ostensibly to promote domestic consumer price stability; (b) excise tax on domestic production will continue to be levied; and (c) current excise exemptions available to new and old mills have been withdrawn.

Apparently, the import duty is now regarded as unnecessary since the landed cost of imported sugar now exceeds domestic production costs. The former has risen because of higher international prices and the depreciation of the rupee. However, international sugar prices have historically been volatile and the current situation of high prices may not prevail. This presents the possibility that international prices may fall in the future with the reimposition of import duties in order to avoid discrimination against the domestic sugar industry and loss of potential government revenue.

Since low world sugar prices have been the norm in the past and are likely to be so in the future, the policy issues related to self-sufficiency presented in this paper continue to be relevant. Also, even though Pakistan may, temporarily, be able to produce sugar more cheaply at home, its comparative advantage may still lie elsewhere, say in producing cotton and wheat.

2. Policy Issues

In spite of the apparent success in increasing sugar production, four basic policy issues continue to be most evident in the sugar industry. These are:

- * the problem of maintaining self-sufficiency in sugar production
- * the problem of low and static sugarcane yields
- * the level of processing capacity required
- * the need to review existing regulations and policies which impact on the sugar industry.

2.1 What Level of Self-Sufficiency is Practical?

Achieving self-sufficiency in sugar production has been a formal but unattainable goal of the Government of Pakistan for some time. In order to realize this goal, the government has maintained high sugarcane and sugar prices relative to other major sugar producing countries. This has been achieved through high support prices for sugarcane, regulatory duties on sugar imports, and excise taxes on domestic sugar manufacture.

The economic cost of this activity has been high sugar prices to the consumer which includes households as well as industrial users of sugar such as beverage manufacturers, fruit processors, etc. Domestic sugar production has been essentially subsidized by these consumers who paid higher prices for sugar than would have been the case if it were imported. The size of this subsidy was estimated at Rs. 7 billion in 1986/87.

The major economic benefit has been revenues to the government from regulatory import duties and excise taxes. These revenues are substantial (Rs. 4.5 billion in 1986/87) and represent an important form of taxation on a product which does not represent a large proportion of consumer expenditures. However, the tax is not especially efficient in the sense that it captures only a little more than half of the consumer subsidy. The rest goes to support cane production and processing costs.

What is noteworthy is that the foreign exchange saving from producing sugar domestically is not significant. This is because the saving in sugar imports is largely offset by the loss in foreign exchange savings/earnings associated with displaced cotton, wheat and rice production. These latter crops compete directly with sugarcane for acreage resulting in a potential trade-off between sugar production and the production of these other crops. This is a cause for some concern. Cotton, for example, is a "deep" industry in Pakistan with several layers of processing associated with it and which provides much employment. Wheat is a staple food item. Since sugarcane occupies the land for a full year, it displaces both kharif and rabi crops.

Direct Gross Foreign Exchange Savings/Earnings Per Hectare of Sugarcane, Cotton and Wheat [1]

	Yield/hectare ----- (metric tons)-----	Production	Price/MT	Total Value ----- (US \$)-----
SUGARCANE	38.68			857
Sugar @ 8.5%		3.29	233	764
Molasses @ 4.5%		1.74	53	93
SEED COTTON	1.62			577
Lint @ 33%		0.54	989	534
Cottonseed Oil @ 11% of 66%		0.12	368	43
WHEAT				
Unadjusted	1.73	1.73	184	317
Adjusted	1.73	0.60 [2]	184	111

[1] Estimates are based on average 1986/87-1987/88 yields and prices and relate to foreign exchange flows associated with the value of output only. They do not take into account either the foreign exchange or domestic resources used to produce the stated output.

[2] Wheat production adjusted downward to reflect a cropping intensity of 135% typically achieved in wheat/cotton rotation zones.

Given the costs of the current sugar policy and the trade-offs involved, the obvious question which arises is: should Pakistan continue to strive towards attaining and maintaining self-sufficiency in sugar production, or should it eventually phase out production in line with the principle of comparative advantage?

There are at least three arguments for maintaining some domestic capacity in sugar production: food security, past investments and potential competitiveness. Being an important item of household consumption, sugar is in a sense a strategic commodity. A significant domestic production capacity would reduce Pakistan's vulnerability to the sudden price hikes which have characterized the international sugar market in the past.

Second, Pakistan has over the years built up a large investment in the sugar industry in terms of factories, machinery and infrastructure. It makes little sense to write off this investment prematurely. Finally, despite low yields, Pakistan's sugar production costs have not been very much out of line with international prices. In fact, whenever world sugar prices rise, as at present, the Pakistan sugar industry becomes competitive.

On the other hand, econometric analysis suggests that both domestic sugarcane and sugar prices will have to increase in the future in order to achieve and maintain self-sufficiency. Raising sugarcane prices may be undesirable even if domestic sugar production costs are at present below international prices: increases in output will probably come at the expense of other crops such as cotton, and therefore have high opportunity costs.

An alternative goal would be to aim for something less than total self-sufficiency with the balance being met from imports. What specific proportion of domestic requirements should

be met from local production depends, in part, upon the risk that policymakers are willing to take. The biggest risk is the potentially high price that would result if imports were simply not available.

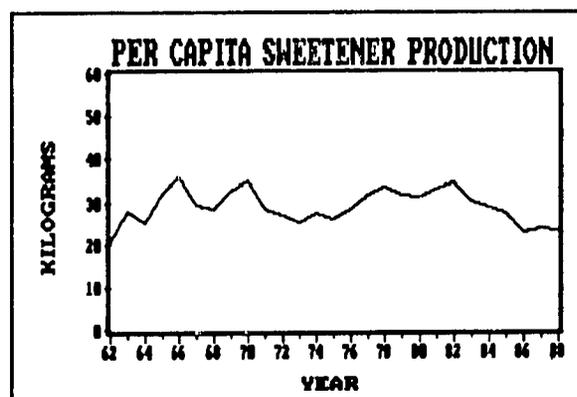
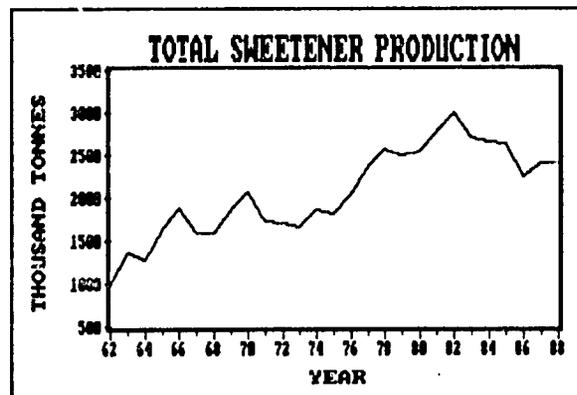
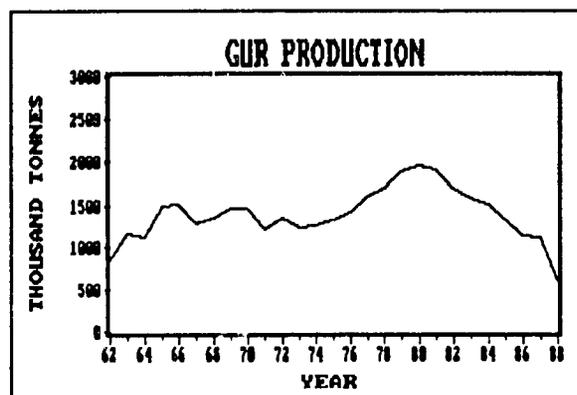
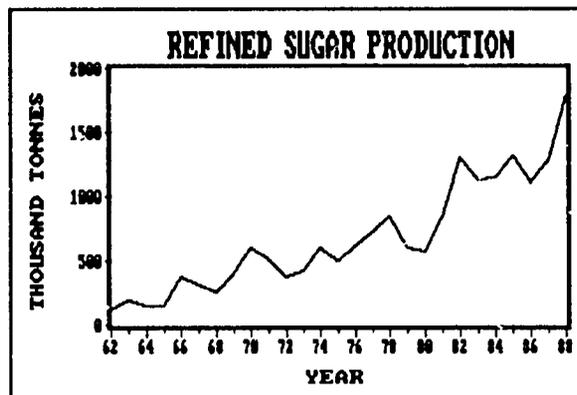
There are several levels of self-sufficiency that might be achieved at different cost and risk levels. For example, if Pakistan were able to hold an 80% self-sufficiency level, and a world shortage foreclosed the availability of imports, domestic prices would likely rise by 50%. At a 70% self-sufficiency level, prices could rise by 75% assuming imports were not available.

2.2 Low and Static Sugarcane Yields

Even if something less than total self-sufficiency is aimed for, it is important to maintain the growth in sugarcane production. While, sugar production has more than doubled over the past decade, total sweetener production (and consumption) has remained constant and even declined somewhat in per capita terms.

This has occurred because sugar production has basically replaced gur, shakkar and desi cheni production. Both sugar and these other traditional sweeteners are based on sugarcane. Gur production has declined as mills have crushed a larger proportion of the cane produced and as consumers have increasingly substituted sugar for gur in their diets.

Since nearly all sweeteners in Pakistan are derived from sugarcane, growth in total sweetener production is essentially determined by the underlying growth in cane production. Cane production per capita has fallen over the past decade.



Historically, increases in sugarcane production have largely been dependent upon increases in acreage -- sugarcane yields in Pakistan have stagnated since the mid-sixties and remain well below those achieved in other major cane producing countries. Consequently, in the absence of expansion in cultivated acreage, sugarcane replaces other crops.

This summarizes one of the major problems in the sugarcane sector: how to achieve sustained yield increases that will allow sugarcane production to expand through the use of inputs other than land and water. Cane production increases that depend upon additional acreage must compete with other crops. Also, low sugarcane and sugar yields per hectare are the single most important contributors to the high production cost of sugar in Pakistan.

Most observers feel that there is considerable potential for increasing sugarcane yields in Pakistan. The potential, they argue, is based upon two factors: (a) closing the yield gap which exists between "average" and "progressive" farmers, and (b) evolving improved high yielding cane varieties suited to Pakistan's growing conditions.

Narrowing the yield gap between "average" and "progressive" farmers, however, is likely to be less easy to achieve in practice. It requires setting up an effective and relevant extension system together with overcoming some basic structural problems relating to access of farmers to key inputs such as fertilizers, pesticides, credit and water. Crop research and varietal development in sugarcane, on the other hand, has clearly lagged behind that in other crops such as wheat, cotton and rice. In order to provide the technology to stimulate yield increases, an independent sugar research institute along with demonstration sites at mills could be implemented with little cost to the government and with some initiative from industry. This could be financed from the existing cane development cess, or an additional nominal levy on sugar production.

At the same time, as new technology is developed, its benefits are likely to be realized only if the existing cane payment system is changed to one which rewards farmers for improving the sugar content of cane. At present, farmers are paid on the basis of weight and not the sugar content of cane. The "quality premium" currently payable by mills is similar to processors' profit sharing. The individual farmer does not receive an incentive to improve cane quality.

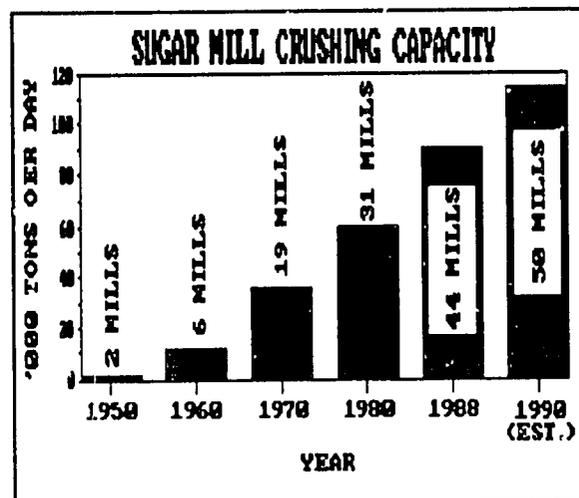
2.3 How Much Additional Processing Capacity Should be Created?

Currently, there are 44 sugar mills operating in the country with a reported capacity of around 90,000 tons of cane per day or 1.3 million metric tons of sugar per year. Judging from the industry's production in 1988, actual capacity seems to be much higher, probably around 1.8-2.0 million metric tons per annum. About one-fourth of the total installed capacity is in the public sector.

Another 5-6 mills are expected to come on line within the next couple of years. These will add about 20% to existing processing capacity. In addition, a number of existing mills are reported to be in the process of expanding their capacity. There is concern that if capacity

is expanded too rapidly, it will disrupt the industry and create loan repayment problems for government owned banks.

There is already intense competition for cane in certain mill zones (although cane production is generally reported to be up in 1988/89). On the demand side, mills have had to take responsibility for marketing sugar themselves since de-rationing when the government purchased all the production. Expanding the market for white sugar will not be an automatic process and will require, at least in part, efforts to convince existing gur consumers to shift to sugar.



With the substitution of sugar for gur by consumers now largely complete, however, demand for the former is likely to grow more slowly than in the past. At current consumption levels, market growth would justify setting up no more than 2-3 new mills per year even if the entire increase in demand is to be met from expansion in domestic capacity. This is assuming, of course, that cane for crushing is available.

Given the uncertainty regarding the latter, and market demand growth prospects for sugar in general, milling capacity ought to be increased gradually. In this context, there is a need for more effective coordination among, and supervision of, the various government financial institutions who lend to this sector.

2.4 What are the Appropriate Regulations for the Industry?

Because of the size of the sugar industry and its importance to the consumer, sugar has historically been subject to a number of government interventions. These have included price and distribution controls on refined sugar, rationing, a government monopoly on imports, zoning, and requirement of government approval for investment in new capacity.

Recently the level of government intervention has declined with deregulation. Price and distribution controls on refined sugar were removed and rationing abolished. The government monopoly on imports was replaced by a regulatory duty on sugar imports. Mill zoning was discontinued and the sugar industry was removed from the list of Specified Industries for which investment sanctions are required from the Federal Government.

The GOP has, as part of its 1989/90 budgetary proposals, decided to withdraw excise tax exemptions which were available to sugar mills. These exemptions appear to have had a destabilizing impact on production, profits and competition. Tax exemptions to encourage higher production, for example, increased industry profits in good years when capacity utilization was high anyway and depressed profits in bad years when overheads were high

due to lower production. Also, exemptions given to new mills disrupted the sugar production process by giving them an advantage over old mills in acquiring sugarcane. However, after some time the advantage was lost and market shares drifted downward.

There is still a need to review other regulations and policies which impact on the sugar industry. The most important of these are:

- mill location approval procedures
- lending policies of government banks
- availability of subsidized investment loans
- lack of regulations to encourage competition.

Investors intending to set up new sugar mills require location approval from provincial governments. This can cause delay and discrimination. One proposal being considered is to make public a list of approved sites from which investors can choose with no formal reference necessary to any official agency. A better approach may be to prepare and publish a 'negative' list of areas, where for various reasons, sugar mills should not be located. This would place the responsibility of site selection clearly on the investor.

The most immediate issue with respect to bank lending policies is the need to regulate the current levels of equity required for investment in new capacity. These levels are so low that they release the investor from any major responsibility to ensure the success of the project. They also inhibit the development of a strong capital market in Pakistan. Recently, the government is reported to have instructed public sector banks to lower the debt-equity ratio in which projects up to Rs. 500 million are financed from 70:30 to 60:40. However, the problem of ensuring an adequate equity stake in bank financed projects may continue because of the widespread practice of over-invoicing.

The availability of subsidized investment loans at 6% per year for purchasing sugar milling machinery does not seem justified either given the returns being reported by sugar processing businesses. In fact, the recent investor interest in sugar milling seems to reflect the availability of highly leveraged, low-cost loans from public sector lending agencies as much as perceived profitability in the industry.

Finally, in the wake of deregulation, there is a need for new regulations to improve and maintain competition. These include laws to prevent collusion on prices and market shares, legislation requiring content and quality labelling and warranting of products, and regulations to support fair trade practices. The problems associated with these types of regulations may not have manifested themselves in the sugar industry yet. But, experience in other countries shows that the absence of such regulations encourages market actors to behave in a manner which largely negates the benefits expected from deregulation.

Note: This paper summarizes and updates a detailed report, The Pakistan Sugar Industry, by the same author, published by the EAM project in October 1988

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