

**Brazilian Agriculture:
Policy Objectives in Conflict**

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Abstract

Performance of Brazilian agriculture in terms of production and real price changes for the major export and domestic food crops is examined. Results indicate that the policies implemented led to a strong performance of the export crops and a weak performance of the domestic food crops from 1973-1981.

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Introduction

Like many other developing countries, the Government of Brazil faces what appears to be conflicting objectives and policies toward the agricultural sector of the country. Agricultural price policy in Brazil and other developing countries is often based on a compromise between forces that argue for domestic self-sufficiency and hence high prices and those that argue for low prices to stimulate industrial processing of raw materials, and to provide low cost food for urban, industrial workers. Other agricultural policy objectives may include increased food production, an adequate and stable supply of quality food products, stable and remunerative farm prices for basic products, and competitive prices so that agriculture can generate foreign exchange on exports and save foreign exchange by avoiding food imports.

Of all these objectives, three can be considered as fundamental to Brazilian agriculture: 1) increase food production for the internal market so as to moderate inflationary pressures on food prices, 2) expand sugarcane production to permit a partial substitution of domestically produced alcohol for the consumption of imported petroleum, and 3) stimulate the production of export crops to earn more foreign exchange. It is quite apparent that these three objectives could easily be in conflict and that to accomplish all three would require an outstanding performance from Brazilian agriculture.

The challenge is enormous when one considers that the domestic population is growing at a rate of about 2.5 percent annually, that the inflation rate exceeds 200 percent annually (in recent years), that Brazil requires huge amounts of foreign exchange to finance its imports and to service its large foreign debt, and that Brazil has a large fleet of automobiles that are using increasing amounts of alcohol for fuel rather than imported petroleum.

The purpose of this paper is to evaluate the performance of Brazilian agriculture during the last ten years in relation to the objectives that the Government has placed before it. Section II of this paper will briefly examine the principal policies implemented to accomplish the objectives and Section III will examine the performance in terms of real prices (nominal prices adjusted for inflation), production of the basic food and export products, and imports and exports of agricultural products. The last section contains the conclusions of the paper.

Policy Instruments

The Brazilian government employs a wide number of policy instruments to alter the allocation of resources to achieve the desired objectives. The import substitution industrialization policies followed since the end of WW II have been the most significant of these policy instruments. These policies included a chronically over-valued exchange rate, export taxes, quotas and prohibitions, price controls on basic foodstuffs and high tariff and non-tariff protection of domestic industry. Through these policies the government was able to transfer large amounts of resources from agriculture to the rest of the economy. Although the Brazilian government has liberalized some of these policies, (e.g. export

controls and more flexible exchange rate policies) since 1964, economic conditions in the 1970s and early 1980s led to a return to the earlier policies that adversely affect production incentives to farmers.

The primary policy instruments that the Government has used to compensate agriculture for the discriminatory policies described above have been credit at low and even negative real rates of interest and expansion and improvement of the minimum price guarantee program. The price guarantee program covers the basic crops of rice, beans, manioc, corn, soybeans, and sorghum plus other products for a total of about 42 commodities. Costs of production, expected world market prices and domestic consumption needs are the most important criteria used in setting the minimum price. The minimum prices are to be announced in advance of the planting season in order to assist producers in their planting decisions. The minimum price guarantee has a loan option that permits the producer to hold the commodity off the market (either on farm or in a government approved warehouse) until prices increase or sell to the government at the minimum price if prices do not improve.

Because of the high rates of inflation in Brazil, the minimum prices often lagged the rate of inflation during much of the late 1970s and early 1980s resulting in low real minimum price guarantees to farmers. Actual government procurement has generally been less than 10 percent of production for the basic grains; however, the loan and storage option has been used quite extensively because of the low interest rates charged on the storage loans. Cotton, rice and soybeans have been the main crops benefitting from the loan and storage option. With the exception of

rice, the domestic food crops have benefitted little from the price support program. For this reason, the price support program has not been an effective stimulus for increased food crop production.

Abundant credit and very low real rates of interest to promote increased production have been a major policy instrument of the government throughout the 1970s and early 1980s. Total credit flow as a percent of the net value of agricultural output increased rapidly during the 1970s. During the late 1970s nominal interest rates ranged from about 13 percent to 20 percent annually on short term agricultural credit when the general price inflation was increasing from 40 percent to nearly 80 percent annually leading to a large negative real rate of interest. By 1980 some nominal interest rates were as high as 36 percent but inflation had increased to nearly 100 percent so that the agricultural credit subsidy was getting even larger [Levy].

The major export crops (soybeans, coffee, sugarcane, cotton and cocoa) receive a credit share roughly similar to their share of the gross value of crop output. On the other hand manioc and black beans (domestic food crops) receive a credit share of only 4 percent but account for 16 percent of the gross value of crop output. Wheat and rice receive a credit share that is double their share of the value of crop output. Thus, the lion's share of the credit subsidy goes to the export crops and a couple domestic food crops.

Brazil has maintained retail and/or wholesale price controls on a wide variety of domestic food crops since the mid-1960s in an effort to control inflation. Export crops have generally been free from these price controls. Some livestock products such as beef and milk have also been subject to price controls. In addition, the Government of Brazil

has para-statal marketing organizations (Brazilian Food Company, COBAL) that directly market food products in an attempt to control and regulate food prices. Wheat production and marketing is also highly controlled and heavily subsidized by the Government. An important impact of the price controls, that set prices in nominal terms, can be a decline in real prices and a loss of production incentives to farmers. This can occur rapidly in an inflationary economy when the nominal control price is only adjusted periodically with a lag.

Agricultural Performance

Most developing countries which are also oil importers faced a large increase in import expenditures after the oil price increase of 1974. During the period 1973-1975, Brazilian oil imports increased from 769 million dollars to 3.1 billion dollars. To offset this rapid increase in oil import costs, Brazil designed a policy to increase its agricultural exports and at the same time substitute ethanol (made from sugarcane) for gasoline for its domestic car fleet. These policies put a tremendous pressure on the agricultural sector through increased demand for such products.

The production of crops for the export market was encouraged through several agricultural policies. Frequent de-valuations of the exchange rate in the late 1970s and early 1980s created strong price incentives to produce for the export market. The government reduced the sales tax from 15 percent to 5 percent for that portion of the crop sold to foreign markets. The government also invested large amounts of capital in port facilities and transportation facilities to lower the costs and speed the movement of crops from production areas to export ports [Feldens]. Incentives were also offered to the farm sector in the form of subsidized

production credit, and credit for buying machinery, equipment and fertilizer. The benefits of the subsidized credit went to those who buy such goods; mainly larger farmers who could economically use farm machinery [Araujo and Meyer].

The effort to increase revenues from the export market concentrated on selected agricultural products (soybeans, coffee, cocoa, oranges, tobacco and sugarcane) which the country was already exporting. Most of the export crops are related to large farm operators while the production for the domestic market is supplied by small farm operators.

For analytical purposes, a classification of products into the domestic market and export market was made according to the major market destination of the product, and the market that exercises the greatest influence on prices. A comparison of the average growth rate of production of these products for the domestic market and export market is shown in Table 1. An important result of the incentives to increase revenues in the export market from the agricultural sector is reflected in the high average growth rates of production of most products that were exported. The export market products of oranges, soybeans, sugarcane, cocoa, tobacco and coffee had an average annual growth rate during the period 1973-1981 much higher than the products that were produced for the domestic market. Two of the domestic market crops (manioc and black beans) had declining average annual growth rates in this same period. The high growth rate of chicken production is partially due to the small amount that was produced in the early 1970s and that 25 percent of its production is for the export market.

A high annual growth rate of production can be expected to continue in the near future for the export crops because many of these products are almost permanent plants. The farmer's decision in cultivating these crops depends heavily on future expected profits. Increased productivity and economic returns will occur only four years or more after the planting is done. These crops have a higher ratio of fixed to variable costs in the first years compared to annual cultivated crops. Thus, even with a reduction in real prices, farmers may not reduce in the short run the amount of area dedicated to these products.

The soybean land area competes strongly with corn and black beans. The 1973-74 world price increases in soybeans and the abundant subsidized credit and other policies encouraged the farmers to invest more in this specialty crop for the export market. The high risk of productivity swings in black beans, caused by climate changes or diseases, is a major reason for the production stagnation despite the real price increases. At the same time, black bean production is a typical small scale farm crop which did not receive the advantage of the credit policy.

Another important measure in evaluating the performance of the agricultural sector is to calculate the per capita production over time. These results are shown in Table 2 for the basic domestic food products for the period 1978-1983. The production per capita for the different products has rather large fluctuations in some years which may result in large fluctuations in prices and consumption patterns. Production per capita for four of the six food crops has declined steadily in this period. The availability of these products on a regular basis is accomplished through increased imports. Timely imports of agricultural products will reduce the impact of higher prices for the consumers but

at the same time may also reduce the income to farmers in years of lower production and consequently do not stimulate increased domestic production.

The change in real prices is a mixture of trends (Table 1). While the prices of the export crops depend more on the international markets (except maybe for coffee), the prices of the domestic crops were regulated closely by the government price control policy. The change in real prices among crops is very important in the farmer's decision because of the low opportunity cost of farmland. A decrease of 6 percent annually in the real price for soybeans did not affect the growth of Brazilian production. The expansion of new areas in the central-west of Brazil with low cost land, contributed to the increased soybean production. Incentives in credit for production and construction of new alcohol distilleries, and the increase in prices for gasoline resulted in real price increases of over 4 percent annually for sugarcane (the highest of any crop).

The government control prices on domestic food crops increased the risk of lower prices and income when compared to the export crops. The lower growth rate of production or even reduction in production forced the government to import some agricultural products. The price subsidy on wheat for the consumer (which is a good substitute for several other food products in the Brazilian lower income diet) increased even more rapidly the demand and therefore imports of this product. In order to maintain an adequate supply of food for a growing demand, Brazil went to the international market to buy basic food products that already are produced and could be supplied by domestic production.

The policies implemented during 1974-76 increased the dependence on agricultural imports in the latter 1970s. In 1975, the share of agricultural imports as a percent of all imports (except oil) was around 7.8 percent while during the period 1980-83, the share of agricultural imports increased to 18.5 percent (Table 3). The major agricultural import products were wheat, rice, corn, beef, black beans and milk. These six products represented over 70.0 percent of all the agricultural imports in 1983. The amount spent on these imports more than doubled in the period 1975-1983. During this period the inflation rate increased from 39 percent a year to 117 percent which affected most adversely the lower income people. One indication of the effects of this high inflation is the impact on the government controlled minimum wage rate which decreased from an index of 100 in 1977 to 66 in 1984; reducing incomes and consequently the demand for food (Table 4).

Conclusions

The performance of the Brazilian agricultural sector accomplished only part of the three basic objectives through the policies implemented after 1974. During the period 1973-1981, the annual growth rate of output of export crops (oranges, soybeans, sugarcane, cocoa, tobacco and coffee) was 5.55 percent or more. The output increase in sugarcane was enough to supply the domestic substitution of ethanol for gasoline and earn some additional export revenues in sugar.

The domestic food production sector did not have a similar performance. In order to provide enough food for the domestic market, the expenditures on agricultural import products during the period 1975-1983 increased from 420.1 million dollars to 1.02 billion dollars. The major food imports were wheat, rice, corn, beef, milk and black beans. Almost

all of these products can be produced at volumes adequate to supply the domestic market. Wheat is the one exception. But, with the reduction in consumers subsidies on wheat prices, other good substitutes could be used such as corn, manioc, barley and other cereals. These can be produced in the country.

In the long run, a declining production of products for domestic consumption, increasing amounts of agricultural products for exports and increasing amounts of food imports will be in conflict. The future rate of inflation will have some of its roots in the short supply of agricultural food products on the domestic market. Price policy for domestic food crops needs to be re-directed in order to stimulate increased domestic food production, particularly in these crops where Brazil is an efficient producer.

Table 1: Annual Growth Rate of Production and Real Prices of Selected Products for Domestic and Export Markets, Brazil, 1973-1981

DOMESTIC MARKET			EXPORT MARKET		
PRODUCT	GROWTH RATE OF PRODUCTION	GROWTH RATE OF REAL PRICES ^{a/}	PRODUCT	GROWTH RATE OF PRODUCTION	GROWTH RATE OF REAL PRICES ^{a/}
	- - Percent - -			- - Percent - -	
Corn	3.45	- 3.42	Oranges	9.80	- 2.19
Banana	3.26	0.58	Soybeans	9.44	- 6.09
Rice	2.17	- 3.32	Sugarcane	7.45	4.27
Wheat	1.33	- 1.47	Cocoa	6.67	0.95
Black Beans	- 0.16	4.22	Tobacco	5.95	- 1.56
Manioc	- 0.55	1.68	Coffee	5.55	0.59
Cattle	3.17	1.32	Peanuts	- 3.64	- 1.95
Hogs	3.14	- 2.18			
Chicken	19.42	- 4.54			

^{a/} Nominal prices deflated by index number two of the Fundacao Getulio Vargas.

Source: Calculated by the authors.

Table 2: Per Capita Production of Selected Food Products for Domestic Consumption in Brazil, 1978-83

PRODUCT	1978	1979	1980	1981	1982	1983
	- - - - - Kg/Capita - - - - -					
Rice	64.4	65.4	82.1	67.4	77.6	60.4
Potatoes	17.8	18.5	16.3	15.7	17.2	14.2
Black Beans	19.4	18.8	16.5	19.2	23.2	12.4
Manioc	224.7	214.8	197.0	200.9	191.9	169.5
Corn	119.8	140.3	171.0	173.0	174.7	146.1
Wheat	23.7	25.2	22.7	18.1	14.8	17.7

Source: Fundacao Getulio Vargas

Table 3: Value of Imports of Major Agricultural Products, Brazil, Selected Years

PRODUCT	Y E A R S			
	1970	1975	1980	1983
	- - - Millions of Dollars - - -			
Rice	-	23.9	103.8	113.5
Beef	1.5	18.6	98.3	44.9
Black Beans	-	2.1	30.7	1.9
Milk	14.3	14.2	81.8	19.0
Corn	0.3	1.3	269.1	37.2
Wheat	127.2	360.0	1051.9	804.8
Total of Six Products	143.3	420.1	1635.6	1021.8
Six products as a percent of Total Agricultural Imports	-	52.6%	70.1%	74.0%
Agricultural imports as a percent of all imports except oil	-	7.8%	15.7%	18.5%

Source: CACEX and calculated by the authors.

Table 4: Monthly Minimum Real Wage Rate for Brazil, Period 1970-84

Year	Wage Rate Cruzeiros of 1977	Index 1977 = 100
1970	916.37	89
1971	933.09	91
1972	950.92	92
1973	954.87	93
1974	902.77	88
1975	935.66	91
1976	1,016.80	99
1977	1,027.20	100
1978	1,045.13	102
1979	986.97	96
1980	970.66	94
1981	943.36	92
1982	947.02	92
1983	778.80	77
1984	678.99	66

Source: Calculated by the authors.

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