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The Political Economy of Agricultural Pricing Policy

# Trade, Exchange Rate, and Agricultural Pricing Policies in the Philippines

Ponciano S. Intal, Jr.  
John H. Power

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The series The Political Economy of Agricultural Pricing Policy, under the direction of Anne O. Krueger, Maurice Schiff, and Alberto Valdés, was undertaken to examine the reasons underlying pricing policy, to quantify the systematic and extensive intervention of developing countries in the pricing of agricultural commodities during 1960–85, and to understand the effects of such intervention over time. Each of the eighteen country studies uses a common methodology to measure the effect of sectoral and economywide price intervention on agricultural incentives and food prices, as well as their effects on output, consumption, trade, intersectoral transfers, government budgets, and income distribution. The political and economic forces behind price intervention are analyzed, as are the efforts at reform of pricing policy and their consequences.

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## Abstract

Economic progress as measured by real gross national product (GNP) per capita declined steadily in the Philippines between 1960 and 1985, thus helping to set the stage for the forced abdication of long-time president Ferdinand Marcos in 1986.

Like many of the other developing countries examined in this series of comparative studies, the Philippines during this period sought to build up its industrial sector. As a consequence, the net result of the trade and sectoral policies adopted during the period was an undermining of the agricultural sector, an outcome reinforced by the significant changes in the world economy in the 1970s and first half of the 1980s. The country's fuel bill, for example, rose from 11 percent of the cost of imports in 1972 to about 25 percent in 1981.

This study concentrates on measuring and analyzing the effects of trade and agricultural pricing policies on the agricultural sector up until 1985, with particular attention to rice and corn, the main food grains, and sugar and coconuts, the chief export crops. Although agricultural product exports as a share of all exports dropped from about 80 percent in the early 1960s to about 30 percent in the mid-1980s, about half the population still lived in the countryside and agrarian reform continued to be a matter of intense controversy.

Among the principal findings of the study is that the various types of direct and indirect price intervention resulted in substantial reductions in sugar and coconut production, a very small negative effect on rice output, and a notable increase in corn output. Another significant finding is that direct intervention by the government in the producer prices of sugar and coconuts had net negative effects that were exacerbated by indirect intervention (e.g., manipulation of exchange rates). This appears to account for the shift in political dissension from the rice-growing regions of Luzon to the Visayas, Bicol, and Mindanao, traditional sugar and coconut-producing regions. A characteristic of domestic politics during the period was emphasis on patron/client relations and personal loyalties rather than on the economic interests of larger groups.

The study also reports on the effects of agricultural price intervention on such things as food consumption, foreign exchange earnings, and income distribution.

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## Introduction

The February 1986 revolution in the Philippines which led to the exile of President Marcos after 20 years in office powerfully underscores the role of economic factors in shaping political events. The only Philippine president to be re-elected, thanks to a 1969 campaign which emphasized the success of his "rice and roads program," Marcos was also the only Philippine president ever to be forcibly ousted from office.

The 1986 revolution was fundamentally a reaction to the failure of Marcos' economic policies to realize the promises made at the outset of his so-called "New Society" following the declaration of martial law in 1972. Instead of manifesting vigorous industrialization and a "countryside transformed" (Marcos, 1976), the Philippine economy remained excessively dependent on primary exports and became increasingly dependent on external borrowing, both of which contributed to the economic crisis of the 1980s. Indeed, the February 1986 revolution came on the heels of rapid inflation (1984) and declines in output and income (in 1984 and 1985), the only instances of negative growth in the Philippines during the post-World War II period.

Moreover, a large percentage of the rural population suffered significant income losses from government interventions in agriculture that were both inept and prejudicial to farmers. The growth of insurgency during the late 1970s and early 1980s and the geographical shift of its center from the predominantly rice-growing Central Luzon area toward the coconut, sugar, and plantation regions south of Manila corresponded with the pattern of bias in Philippine agricultural policy during the 1970s. At this time, agricultural policy generally favored irrigated rice farmers, disfavored coconut and sugarcane farmers, and largely ignored the land tenure problems in coconut, sugar, and plantation agriculture.

While economic factors have influenced political developments in the Philippines, political events and attitudes, in turn, have helped to shape economic policy. In particular, the attainment of political independence and the spirit of nationalism which accompanied it were instrumental in the adoption of two policies that have most strongly affected agricultural incentives and interests -- namely, the industrial protection system in the 1950s and government interventions in the marketing of agricultural products in the 1970s.

Political independence from the United States, which served the nationalist interest, also meant the gradual disappearance of the Philippines' favored position in the protected American market. This, together with a stubborn bias against correcting a greatly overvalued peso, made Philippine policymakers believe it was time to move away from the colonial dependence on primary exports and focus instead on an industrialization geared to the domestic market. At the same time, the import control system that was adopted to effect this transformation also served a nationalist purpose by introducing a discriminatory Filipinization on the import trade.

Similarly, the government's direct interventions in coconut and sugar trading during the 1970s were in part attempts to reduce the perceived domination by non-Filipinos of agricultural trading and processing. However, instead of being useful, the interventions actually aggravated the structural adjustment problems facing coconut and sugar producers. International prices of coconut and sugar became more volatile and the world use of substitutes continued to grow.

The present study examines agricultural pricing policies in the Philippines between 1960 and 1986 and their effects on agricultural incentives, output, and incomes. The study looks at both specific measures

directed at particular crops and the constellation of policies affecting the real exchange rate. Thus, the "direct effects" are essentially the partial equilibrium impacts of taxes, subsidies, customs duties, price controls, and quantitative restrictions. The "indirect effects" on the real exchange rate stem from the industrial protection system and the management of fiscal, monetary, and exchange rate policies. As the study shows, the latter account for a large part of the policy bias against agriculture in the Philippines over the entire period since 1950. Thus, the effects of government policies regarding agriculture were strongly influenced by the overall development strategy that was adopted.

Chapter 1 of this report gives an overview of the Philippine economy and the agricultural sector. Chapter 2 describes the macroeconomic and agricultural policy regime affecting the performance of the agricultural sector. Chapter 3 presents the measures of government interventions in agriculture; and Chapter 4 through 7 present the estimated effects of these interventions on output, consumption, foreign exchange, budgetary transfers, and income distribution. Chapter 8 presents measures of price variability, and Chapter 9 presents price intervention regressions. Finally, Chapter 10 discusses the political economy of direct and indirect government interventions in the agricultural sector.

## Chapter 1

### An Overview of the Economy

#### The Economy

The Philippines, located in Southeast Asia, is an archipelago of about 7,107 islands and a number of islets with a history of alternate exposure and submersion. The country has a total land area of nearly 300,000 square kilometers; 45 islands account for 98 percent of the land area. The islands of Luzon (which measures 104,688 square kilometers) and Mindanao (with 94,630 square kilometers) account for two-thirds of the total land area. The country can be subdivided into three broad island groupings: Luzon in the north, Mindanao and the Sulu group in the south, and the intermediate-sized Visayan islands in the middle (primarily Samar, Leyte, Bohol, Cebu, Negros, and Panay).

Table 1.1 presents the population of the Philippines in selected years. The total population grew from 19.2 million in 1948 to 48.1 million in 1980, and 55 million in 1985. The rate of population growth was 3.1 percent a year during the 1950s, 3.0 percent during the 1960s, and 2.7 percent during the 1970s.

Table 1.1 breaks the population into rural and urban categories, with two definitions given for urban. The table shows that the Philippines is primarily rural. Even most of the so-called urban municipalities function as agricultural service centers revolving around agriculture.

Metro Manila is the country's largest city. In 1980, its population of nearly 6 million people represented one-third of the country's 17.9 million urban inhabitants. (In 1960, the city's population accounted for three-tenths of the total urban population.) Metro Cebu is the country's second largest metropolitan area. However, its population in 1980 was only 13 percent of that of Metro Manila.

Table 1.1 shows that the primacy index (i.e., the ratio of the population of the largest city to the combined populations of the second, third, fourth, and fifth largest cities) has been rising for the first time since World War II. The growing primacy of Metro Manila is a result not only of urbanization but also of the post-World War II government policies which have favored the establishment of import-substituting industries in and around Manila.

The population density in the Philippines has risen from about 64 persons per square kilometers in 1948 to 160 persons per square kilometer in 1980. This density varies substantially within the country, however. The most densely populated area is the Central Luzon-Metro Manila Southern Tagalog corridor. In 1980, the population density in the country ranged from 9,317 persons per square kilometer in Metro Manila to 2.5 persons per square kilometer in the island of Palawan. The Philippines currently has the highest national population density among the (agricultural) Southeast Asian countries.

The growth in population has reduced the agricultural land/worker ratio (i.e., the amount of arable land per person employed in agriculture) from about one hectare during the 1950s to about one-half hectare during the early 1980s. This seems to suggest a near closing of the land frontier brought about by the rising population against the land constraint (see Hayami, et al., 1976). However, land classification by topographic maps suggests there is still a large amount of land that is suitable for agriculture (ILO, 1974, p. 83, footnote no. 1). More data and analysis of the cost of land settlement are needed before the trend can be assessed with greater accuracy. Nonetheless, it can be argued that some of the decline in the land/worker ratio is due to the development strategy of the post-World War II period. First, the policy bias against agriculture

reduced the returns from investments in land settlement -- investments which increase arable land. Second, the failure of the industrial manufacturing sector to absorb proportionately more labor meant that agriculture and services had to provide employment for the growing labor force.

Changes in the population base of the labor force make it difficult to obtain a uniform time series on labor supply and labor force participation rates. Before 1976, labor force surveys were taken on a population base more than ten years old. Since then the surveys have been conducted using a population base more than 15 years old. The labor force figures given in Table 1.1 have not been adjusted for differences in population base (the 10-14 year-olds constituted 12.37 percent of the total population in 1980). The labor force participation rates were around 56-57 percent during the late 1950s to mid-1960s, 50 percent during 1970-75, 58-62 percent during 1976-82, and 64 percent during 1983 and 1984.

The Philippines has been less trade-oriented than other Southeast Asian countries. In 1982, imports and exports as a percentage of GNP in the Philippines were 32 percent, compared with 40 percent in Thailand, 44 percent in Indonesia, 90 percent in Malaysia, and 331 percent in Singapore (Hill and Jayasuriya, 1985). The small size of Malaysia's and Singapore's populations explains their focus on trade. On the other hand, Thailand has a population size comparable to the Philippines and Indonesia has a much larger population than the Philippines; both of these countries also have higher rates of foreign trade participation. Some trade in the Philippines may have been inhibited by the physical fragmentation of the country and inadequate port and transportation facilities around Mindanao. However, the major obstacle to trade appears to be the predominantly inward-looking development approach engendered by the incentive structure of the post-World War II period.

### Overall Economic Performance

Since the 1950s, the growth performance of the Philippine economy has been less than satisfactory compared with other East Asian countries. Between 1950 and 1956 the economy grew at an average rate of 8 percent a year. The growth rate declined to 5 percent a year between 1957 and 1972. The economy picked up slightly between 1973 and 1979, when real GNP increased by 6.8 percent a year. However, growth fell off again between 1980 and 1983 and actually turned negative in 1984 and 1985 (see Table 1.2). Furthermore, alleged flaws in the methodology and data used to estimate the national income accounts may have overstated the growth rate of national income during the 1970s by as much as 100 percent (Oshima, et al., 1986). The average rate of growth in real GNP per capita between 1960 and 1984 was the lowest among the Southeast Asian countries; it also was lower than the average growth rate of lower middle-income countries and individual growth rates of middle-income countries during 1960-82 (World Bank, 1984, pp. 218-19).

During the post-World War II period, the Philippine economy has experienced intermittent balance of payments crises. The first one occurred during 1949-50 and ushered in the foreign exchange and trade controls of the 1950s. The second one occurred at the turn of the 1960s and led to the de facto peso devaluation in 1962. The third crisis took place in 1969; and led to another devaluation in early 1970. The most recent and most serious crisis took place between 1983 and 1986; it again required a major devaluation.

It is difficult to come up with a satisfactory explanation for the disappointing economic performance and balance of payments crises in the Philippines between 1950 and 1986. Although the international economic environment facing the Philippines needs to be considered, several studies

and papers (e.g., Baldwin, 1975; Bautista and Power, 1979; David, 1983; Intal, David and Nelson, 1985; Sicat, 1985) point to the nature and extent of government intervention in the economy as causal factors. The various studies suggest that government policies have led the Philippines away from the areas where it has a comparative economic advantage, resulting in a misallocation and underutilization of the country's scarce capital resources. Macroeconomic pricing policies have resulted in low to negative real interest rates and an overvalued peso; the structure of protection for industries has been highly uneven and strongly biased against exportables; government interventions, particularly during the 1970s, have tended to reduce the role of the market mechanism in favor of government regulation -- a process which has enhanced the monopoly power of public and private enterprises.

The international economic environment for the Philippines turned from very favorable during the 1950s to very unfavorable during the early 1980s. The country enjoyed tariff preferences in the United States during the 1950s and, to a lesser extent, during the 1960s under the Bell Trade Act and the Laurel-Langley Agreement. At the time, however, the Philippines did not fully exploit this position because of its focus on import substitution. The 1960s were the boom years in international trade, and, compared with the 1970s, world commodity markets then were reasonably stable. In hindsight, the 1950s and 1960s may be described as the decades of lost opportunities for the Philippines.

During the 1970s and early 1980s, the international economic environment for the Philippines worsened. The 1970s were punctuated by the two oil price shocks of 1973 and 1979, the ensuing world recessions, and large swings in export prices. Because the Philippines relied on imported oil to satisfy much of its energy needs during the early 1970s, the oil

price increases drastically raised the share of the oil bill in total merchandise import payments. This share rose from less than 11 percent before 1974, to around 20 percent during 1974-79, and 25 percent during 1980-82. The deterioration in the external terms of trade which began in the 1950s accelerated during the 1970s and early 1980s. This deterioration is comparable in extent only to that of the late 1920s to the early 1930s during the Great Depression. Finally, world interest rates rose substantially during 1979-82, adding to the payment the Philippines had to pay on its external debt, which has variable interest rate terms.

Table 1.2 presents the percentage shares of imports and exports to gross national product during 1950-83. Exports as a share of real GNP averaged about 22 percent during the first half of the 1950s, but declined to about 17.8 percent between 1956 and 1983. The only time when exports reached 20 percent of GNP was between 1963 and 1966, right after the 1962 devaluation of the peso. Note that the export share dropped during the few years before the devaluations in 1962 and 1970; this may reflect the under-reporting of exports as a form of "dollar salting" in anticipation of the peso devaluation and/or the inhibiting effect on exports of an increasingly overvalued peso. The share of imports to GNP averaged 26.2 percent during 1950-55 and 20.3 percent during 1956-83. Imports were quite a bit higher than exports except during 1963-66.

Table 1.2 also presents the shares of gross domestic investment and savings to GNP. The most noteworthy point is the much higher rate of investment during the 1970s and early 1980s compared with the 1950s and 1960s. The share of gross savings--here defined as the sum of capital consumption allowance, personal savings, government savings, and corporate savings--also increased during the 1970s but not as much as the rate of investment. The investment-savings gap reflects the current account

deficits and external borrowing, especially during the 1970s and early 1980s. Ironically, the sharp increase in investment rates during the 1970s failed to generate self-sustaining growth in the Philippine economy. One reason is that the overall incentive structure encouraged inefficient utilization of domestic and foreign capital resources. Another reason is the increasing dependence on external financing of investment--a policy which contributed to the debt crisis of the 1980s.

#### The Relative Importance of Agriculture

Agriculture is an important sector in the Philippine economy, although its importance has been declining in recent years. Agricultural crops and livestock account for about one-fifth of the gross national product; agriculture, fishery, and forestry together account for about one quarter of GNP (see Table 1.3). These shares do not completely capture the importance of agriculture in the economy because they do not include gross value added from the processing of agricultural products and from the marketing and exporting of processed and unprocessed agricultural products. These activities are assigned to other sectors of the economy in the national income accounts.

Philippine agriculture has been dominated by rice, corn, coconut, sugar, banana, tobacco, abaca and pineapple production. Rice and corn are the main foodgrains; coconut and sugar are the main traditional export crops. Tobacco and abaca (manila hemp) were important exports during the late 19th and early 20th centuries but are now minor traditional exports. Banana and pineapple are the major non-traditional export crops. Other crops include coffee and mango (the two newly emerging agricultural exports), rootcrops (primarily cassava and sweet potato), a large variety of fruits and vegetables, and minor commercial crops like rubber, ramie, and maguey. Hog and poultry production are the major livestock industries; carabaos are used primarily as draft animals.

Processed and unprocessed agricultural products historically have dominated Philippine exports. Sugar, abaca and tobacco accounted for more than three-fourths of total exports between 1873 and 1895. Coconut did not emerge as a major export crop until the turn of the century. Sugar, abaca and coconut accounted for an average of 85 percent of exports between 1899 and 1938. Sugar and coconut by-products have remained the two most important export crops since World War II. Pineapple and banana became important exports starting in the late 1960s.

Table 1.3 shows that by 1962, agricultural crop exports still accounted for 63 percent of total merchandise exports. Thereafter, their share of exports declined substantially due to the sharp increase in exports of forestry products and, in the 1970s, the increase in exports of garments and electric components (largely semi-conductors). Much of the gross value of the exports of garments and semiconductors, however, is accounted for by imported raw material inputs. Viewed in terms of the net value of exports (i.e., gross exports minus imported raw material inputs), the share of agricultural exports would be much higher.

Agricultural imports accounted for more than 25 percent of total merchandise imports during the early 1960s. By 1980 this share had declined to about 7.5 percent (Table 1.3). The decline reflects the sharp increase in the share of oil imports during the 1970s and the successful substitution of rice for agricultural imports. The major agricultural imports are corn, wheat, and soybeans.

Agriculture, fishery and forestry employed about 60 percent of all employed persons during the late 1950s; by the 1980s the share had dropped to about 50 percent. The increase in employment took place in the services sector, not in manufacturing.

Table 1.4 provides a picture of the growth performance of the agricultural sector between 1950 and 1984, based on estimates of real gross value added and the real value of crop production. The quality of Philippine statistics on crop production is inconsistent, although estimates for rice, corn, sugar, and pineapple are among the more reliable. The issue of statistical reliability is particularly important during the 1970s because at that time the contribution of other crops increased significantly.

According to existing estimates, growth in the agricultural crops sector has been variable between 1950 and 1984. The highest growth occurred in the early 1950s as a result of economic reconstruction after the war. The lowest growth occurred in the early 1980s, due to drought and low international prices. It appears surprising that agricultural crop production grew at a higher rate during the 1970s than during the 1950s and 1960s, given the policy bias against agricultural exports during the 1970s. The relatively high growth of agricultural crop production during the decade actually was due to a number of factors: accelerated foodgrain output due to technological improvements in rice production; improved government support services, especially irrigation for rice; the output effect of implicit government protection of domestic corn production; the delayed output effect of the peso devaluation on coconut production during the 1960s; government investment incentives to meet the increased U.S. quota for sugar during the 1960s and 1970s, and the acceleration of crop diversification into banana, pineapple, and coffee production during the decade.

Table 1.4 also presents the average growth rates of food, non-food, importable, exportable, and non-tradable crops. The individual production data were aggregated by multiplying the quantity of each

commodity by its 1972 price, and then summing them up. Food crops were computed with and without coconut because coconut oil has many nonfood uses. Rice was included in the importables even though it was exported during the late 1970s because there are more years when it was imported.

According to the table, food production increased by an average of 6.2 - 6.7 percent a year during 1951-60, 4.3 percent a year during 1961-70, and 6.8 - 7.2 percent a year during 1971-84. Nonfood production increased at an average rate of 4.4 percent a year during 1951-70, and 2.1 - 9.6 percent a year during 1971-84. It is worth noting that, for the entire period, exportables had the highest average growth rate and importables had the lowest.

Per capita food production and apparent consumption during the 1970s and early 1980s are presented in Table 1.5. During this period per capita food production was always greater than per capita food consumption, indicating that the Philippines is a net food exporter. Nonetheless, there was no marked increase in per capita food output during the period, and per capita food production remained fairly stagnant during 1976-84. The declines in food production that occurred during crop years 1972-73, 1982-83, and 1983-84 resulted primarily from typhoons, floods, and drought. Per capita food consumption tended to increase over time except during periods of production shortfalls. For example although per capita food production declined substantially during the early 1980s, per capita food consumption did not decline very much since rice stocks were available.

#### Sources of Growth in Agricultural Production

David, Barker and Palacpac (1984) estimate that between 1955 and 1980, agricultural output grew at a compound annual rate of 4.5 percent and agricultural input grew at a compound annual rate of 3.5 percent. Thus, total agricultural productivity rose by a compound annual rate of 0.9

percent. (Agricultural input consists of fertilizer, imported feeds, and the services from fixed capital comprising the stock of trees, farm machinery, irrigation, and draft animals.) However, there are substantial differences in the growth of productivity by subperiod and by crop. For example, agricultural productivity barely increased during 1955-65, but increased a lot during 1965-80. Much of the increase in productivity occurred in rice, non-traditional export crops, and livestock.

The growth rates of output, area, and yield for each commodity are presented in Table 1.6. In the table, area represents cropped or harvested area rather than farm area to allow for multiple cropping.

Increases in rice output during the 1950s arose from area expansion, during the late 1960s from yield increases. The improvement in yields was due to the introduction and spread of the new rice technology which focused on high yielding and early maturing varieties. These varieties require good water control (i.e., irrigation) and fertilizer. Between 1970 and 1983, irrigated rice farms increased in area from 791,000 hectares to about 992,000 hectares. Between 1973 and 1983, the national consumption of urea fertilizer increased from 153,000 metric tons to 371,500 metric tons (1984 Philippine Statistical Yearbook, pp. 376-77). Rice farms and sugar farms are the major users of urea fertilizer. Growth in output and yield during 1971-75 and 1981-83 was adversely affected by bad weather conditions.

The area planted to rice decreased during the 1960s, increased in the mid-1970s, and decreased again during 1980-84. The decline in rice hectareage reflects the deterioration in the price of rice with respect to that of other crops. The decline in rice area occurred in the marginal rainfed farms which faced a profit squeeze.

The growth in corn output took place primarily because of area expansion. The significant yield increases occurred during the late 1970s, probably due to greater use of high yielding varieties. As with rice, bad weather adversely affected corn yields during the early 1970s and early 1980s.

The growth performance of coconut production exhibits two major patterns: a marked expansion in area during the late 1960s and 1970s, and yield increases during the 1970s. The expansion in area during the 1960s was due to large increases in the relative price of coconut associated with the country's exchange decontrol and devaluation policy. Area expansion during the late 1970s appears to have resulted from the more than doubling of farm coconut prices in 1974 and equally large price increases during

1979-80.<sup>1</sup> The decline in yields during the 1960s is deceptive because of the long gestation period of coconut trees; the large increases in yield during the 1970s reflect the maturation to fruit bearing stage of the trees planted during the 1960s. The decline in yields during the early 1980s resulted in part from drought conditions.

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1/ It is possible, however, that the estimates of area expansion in coconuts during the latter 1970s were overestimated. The total number of trees grew by only 3 percent per annum during 1975-79, compared to 4.9 percent per annum during 1970-74. Nevertheless, the growth of area expansion was higher during the second period. Compared to the 1960s when area expansion was accompanied by a reduction in the share of nut bearing trees to total number of trees, area expansion during the late 1970s was accompanied by an increase in this figure. Yield per hectare increased during the early 1950s, declined during the late 1950s and the 1960s, increased again during the 1970s, but turned negative during the early 1980s. Yield in terms of nuts per nut bearing tree declined from the late 1950s to the early 1970s. The yield estimates during the late 1970s may be overestimated, however. The 1980 Census of Agriculture gives a yield of 32 nuts per nut bearing tree in 1980, compared to 46 nuts per nut bearing tree based on the BAEcon survey estimates--the official basis for computation of the national income accounts. The 1980 Census figure is comparable to the 31-33 nuts per nut bearing tree during the early 1970s; hence, no increase in yield. Considering that the 1980 Census and the Bureau of Agricultural Economics estimates of the number of nut bearing trees in 1980 are comparable, it appears therefore that the official annual series on coconut output (in the BAEcon estimates) may overestimate the output by almost 50 percent.

The changes in sugarcane area and yield during the past three decades reflect the locational specificity of sugarcane production. Large area expansions resulted in yield declines, largely because the expansion took place in marginal sugar farms in Negros located far from the mills and in regions with less ideal soils and climate and less established milling operations (i.e., Bukidnon, Ilocos). Area expansions in sugarcane during the 1960s were a response to the devaluation and the increased sugar quota from the United States; during the early 1970s they were a response to steep increases in world sugar prices.

The fastest growth in the area and output of tobacco occurred during 1956-60, when the government had in effect a support price for flue-cured tobacco. This resulted in large increases in the relative price of tobacco vis-a-vis other crops. In addition, the government extended technical assistance, set-up flue-curing barns, and distributed certified tobacco seeds. Large declines in output, area and yield occurred during 1961-65 because of adverse weather conditions and deteriorating prices. The reduction in area and production and the stagnant yields during the 1970s were due to droughts, indiscriminate planting of different tobacco types, and the expiration of the Laurel-Langley Agreement which ended the quota on duty-free tobacco exports (see Abad, 1982). Although tobacco is a relatively minor crop, the tobacco industry has had political clout, primarily because the tobacco area is centered in Northern Luzon, home to many nationally prominent politicians (three of six presidents are ethnically linked to the region).

Abaca was the top export earner at the start of the century. Since then it has become a minor crop, as abaca lands have shifted over to coconut and banana production. The abaca industry has much less political power than the sugar, coconut, and tobacco industries. The declining

yields of abaca have resulted from the failure to control pests and diseases in the Davao area, which is favored for abaca production. Pests and diseases also have destroyed much of the hectarage in the region. The periods of growth in abaca output coincide with the years of high relative prices for abaca vis-a-vis other crops.

Non-traditional export crops have become important only since the late 1960s. Their share in total merchandise exports was about 3 percent in 1970, increasing to about 7 percent in 1982.

For both pineapple and banana, the expansion in output, area and yield resulted principally from the establishment and expansion of plantations geared for exports. These plantations follow rather exacting varietal choice, planting, farm management, harvesting, packing, and processing standards in order to satisfy the quality requirements of the export market. The output of mango has increased despite reductions in harvested area, largely due to the widespread use of commercial flower inducers such as potassium nitrate. These inducers potentially can increase the yield per tree from 5 to 13 times (Tuiza, 1984). Coffee was an important export earner during the 1880s, but the blight of the 1890s decimated the coffee trees, and coffee did not emerge again as an export crop until 1975. Both the harvested area and yield of coffee increased during the post-World War II period. Initially, they increased in response to the import substitution program of the government. Later, they increased in response to favorable world prices. Area expansions occurred primarily in Mindanao and in Southern Luzon, the center of coffee production in the Philippines during the 1880s.

The growth in root crop production is primarily due to area expansion. This expansion, especially during the 1970s, probably stems from increases in food demand associated with population growth, an

increase in demand for cassava as feeds, and the shift of some marginal rice farms to root crop production when the relative price of rice declined in the mid-1970s. The shift to root crop production occurred primarily in Bicol, Eastern Visayas, and Central Mindanao.

#### Livestock

Livestock contributes over one-fifth of the gross value added of agriculture. It consists of poultry, hogs, cattle, and carabao. (Carabao is raised primarily as a work animal rather than for meat.)

Meat production increased by about 2.5 percent a year during the 1970s, compared to about 1 percent a year in the previous years. The growth was due to increases in poultry and hog production. Poultry contributed around 15 percent of the total meat supply in 1970, hogs around 60 percent (Cabanilla, 1983).

Developments in the livestock sector since World War II reflect a shift in production away from home raising of livestock toward commercial livestock production. In poultry, this change has involved a "turnkey" broiler operation in which the breeding stock is imported from the U.S. or Europe and the physical environment for breeding is kept as close as possible to the production technology from abroad. Commercial poultry raising has become important since the 1960s; commercial hog production has become important only since the early 1970s (Unnevehr and Nelson, 1985). Commercial chicken production as a share of total chicken production increased from less than 20 percent in 1970 to about 70 percent in 1984 (MAF, 1985). The share of commercial pork production in total pork production increased more slowly, from 13 percent in 1970 to about 25 percent in early 1980s (MAF, 1985).

Cattle raising, which requires a lot of land, has been hampered by the unavailability of land due to the declining land/worker ratio, the

uncertainty of land ownership, and peace and border problems in areas with potential for cattle production.

### The Agricultural Sector

#### Physical Aspects

##### Land Area and Use

The Philippines has a total land area of nearly 30 million hectares. About 8 million hectares are currently under cultivation; field crops are grown on about 4.5 million hectares, and tree crops occupy about 3.2 million hectares. About 11 million hectares are covered with grasses and pastures; a considerable portion of this could be developed as cropland.

Rice, coconut and corn are the most important crops in the Philippines. As of 1980 they accounted for about 88 percent of the total farm area. Sugar, although very important in Philippine trade and a major policy concern, accounted for only one percent of the total farm area in 1980.

##### Climate<sup>2</sup>

Temperature variations are minor over most of the country except between the lowlands and mountain areas. In northern Luzon, where the range in seasonal variation in temperature at sea level is widest, the warmest month averages 83.4°F and the coolest month averages 76.6°F. At sea level the temperature never drops below 60°F and very seldom reaches 100°F.

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<sup>2/</sup> The discussion on climate and soils is based on Huke (1963), Burley (1973) and Bruce (1984).

Rainfall is the most important climatic factor. It also is a key determinant in the locational distribution of agricultural crops. The volume and seasonal distribution of rainfall in the different parts of the country is caused by the convectional activity associated with the intertropical front and the southwest monsoon, and by typhoons and orographic activity. Typhoons produce between one quarter to one third of rainfall in the Philippines. However, they also bring destruction to crop and property in the typhoon-belt regions--primarily Eastern Visayas and Luzon.

Although most of the country receives at least 60 inches of rainfall a year, some parts receive more than 140 inches. Robert Huke (1963) classifies seven climate types in the Philippines according to the length of the dry season (the number of months with less than 2.4 inches of rainfall per month) and the ratio of the rainfall of the wettest month to the rainfall of the driest month. Based on Huke's classification, about 25 percent of the country has a dry season of at least 4 months, about 30 percent has a dry season of 1 to 3 months, and the rest experience no dry season.

### Soils

Philippine soils are strongly influenced by their parent materials. Andesites, basalts and agglomerates are the most common parent materials, representing 21 percent of the total land area. The soil types associated with these materials are varied but generally are low in fertility. Heavy applications of lime are required to supply calcium and to correct for the acidity of the soil. Some of the lateritic soils (or lathosols) are characterized by very rapid leaching and excessive permeability. Coconut and abaca are planted in the more favorable soils from this parent group.

Alluvium forms the basis for most of the productive soils. It is the second most common parent material, found in 15 percent of the total land area. Alluvial soils are concentrated in Central Luzon, Cagayan Valley, Negros Occidental, and Southeastern Panay. Fine textured alluvial soils are the most suitable for rice cultivation. Coarse textured alluvial soils are the most suitable for sugar, abaca, coconut, and tobacco. The coarse soils are more permeable and subject to rapid leaching. As a result, they are relatively low in fertility. The fine textured alluvial soils are less permeable and more fertile.

Shale and sandstone together form the parent material for 15 percent of the total land area. Limestone is the parent material for 13 percent of the land area and volcanic tuff, for 2 percent. About one-third of the land is still unclassified according to soil type.

Calcareous shale and limestone soils are concentrated in the Visayas. The calcareous shale result in fairly rich and productive soil. However, because much of this parent material is in sloping terrain and has low permeability, it is subject to soil erosion. Perennial crops and corn are planted in these soils. The limestone soils are mainly coralline and are friable, very porous, and have a high concentration of alumina and iron. They also are susceptible to soil erosion.

Soil erosion is a serious problem in many parts of the Philippines because of the nature of the soils, the terrain, population pressure, and poor farming methods. In some areas like the island of Cebu, much of the topsoil already is depleted. This is a problem which necessitates greater attention from the government.

#### Farms

In 1971, there were 2.35 million crop and livestock farms in the Philippines; in 1980 there were 3.42 million. The corresponding total

hectarage was 8.5 million hectares in 1971 and 9.7 million hectares in 1980 (Table 1.7). Rice farms were the most numerous, accounting for 42 percent of the total number of farms and 31 percent of the total farm area in 1971. In 1980, they accounted for 47 percent of farms and 38 percent of the farm area. Corn and coconut farms were the next most numerous, together accounting for 43 percent of the farm area in 1971 and 49 percent in 1980. Sugarcane farms barely constituted one percent of all the farms. (1971 and 1980 Censuses of Agriculture) (See Appendix Table A1.2.)

In the 1971 and 1980 Censuses, a farm is assigned to a specific crop or livestock if at least 45 percent of the value of output from the farm is derived from it. Thus, the commodity classification in Appendix Table A1.2 is misleading to the extent that farmers practice intercropping or sequential cropping with other crops. In the 1980 Census of Agriculture, 15 percent of all the farms practiced intercropping and 52 percent practiced sequential cropping with other crops.

Philippine farming is characterized by a preponderance of small farms, except for a few large plantations in the export sector (see Appendix Table A1.3). About 85 percent of all the farms were less than 5 hectares; this size farm accounts for about 50 percent of the total farm area. About 65 percent of all rice and corn farms were less than 3 hectares. Farms of 25 hectares or more accounted for a very small share of the total number of farms. About 38 percent of farms, covering about 45 percent of total farm area, were fragmented into two or more parcels of land.

Although few in number, farms with 25 hectares or more accounted for a large share of the total farm area or number of trees/vines/hills of export crops and farms for livestock. Pineapple provides an extreme example; there, both production and exports are dominated by two

multinationals. Farms of 25 hectares or more accounted for about 75 percent of the sugarcane area in 1971, although this share had dropped to 54 percent by 1980. Similarly, 33 percent of all banana hills in 1980 were in farms of 25 hectares or more, even though these farms accounted for only 0.5 percent of all banana farms.

Land tenure has been a critical issue in the Philippines since before World War II. Much of the insurgency in rural areas is tied to grievances about tenurial relations. The 1971 and 1980 Censuses of Agriculture provide some picture of the tenure status of farmers, even though the classifications of tenurial relations differ somewhat between the two censuses (see Appendix Tables A1.4 and A1.5). The tenure problem stems from the fact that only about 60 percent of the farms (and farm area) in the country are fully owned by the farm operators themselves. The rest of the farmers are mainly share tenants, lessees paying a fixed amount of cash or produce to rent the land, or new owners of the farms without security of title. Rice and corn farms historically have been the focus of the government's land reform programs, although sugar farms employed more share tenants in 1971. In recent months, there has been a strong public clamor for an expanded land reform program. In July 1987, the government promulgated a comprehensive land reform program to include not only sugar and coconut farms but also public lands and other plantations.

Since 1973, the government's land reform program in rice and corn has consisted of transforming share tenants into leaseholders, who pay a fixed amount of rent in cash or in produce, and eventually into full-owners through the Operation Land Transfer. Under this operation, each farmer-beneficiary is issued a certificate of land transfer as the initial step in a process that eventually will lead to ownership, when the farmer completes his amortization payments. The 1971 and 1980 Censuses of Agriculture (see

Appendix Table A1.4 and Appendix Table A1.5) indicate that the government has had mixed results in meeting the goals of its land reform program. Among rice farmers the number of share tenants increased from 289,418 in 1971 to 581,905 in 1980. Among corn farmers the number of share tenants increased from 141,456 in 1971 to 250,745 in 1980. In rice farms the number of full-owners has increased from 442,047 to 901,471; in corn farms from 315,565 to 426,200.

The increase in the number of share tenants among rice and corn farmers shows that share tenancy cannot just be legislated away. The persistence of share tenancy reflects the rational response of farmers to production and marketing risks and the imperfections of the credit and insurance markets. In the 1980 Census, the number of responses for land tenure is higher than the number of farms, indicating that a proportion of the farmers were operating parcels of their farms under various tenurial arrangements. Thus, Filipino farmers have not been fully bound by legal considerations.

Variations in tenurial arrangements and in output- and input-sharing arrangements reflect the varied individual responses to risk, credit constraints, and local product and factor market conditions. In light of these factors, the government's efforts to control land rental shares and redistribute land cannot be expected to completely succeed. Nonetheless, these efforts are important indicators of the government's willingness to address the problems of rural poverty, income inequality, and agrarian unrest. The success of these efforts in increasing the proportion of farmers who own their farms and operate their farms at a profit over the long run depends on which government initiatives are taken to strengthen the rural financial market, expand the rural infrastructure, improve farm prices, and promote industrial productivity and growth.

### Locational Pattern of Agricultural Production

The agricultural landscape of the Philippines is a mosaic of widely grown and localized crops, shaped by variations in rainfall, soil quality, and agroclimatic conditions in the country.

Palay (unmilled rice) is grown all over the country, but the largest producing regions are Central Luzon (the "rice granary" of the country), Western Visayas, Central and Southern Mindanao, and Cagayan Valley. Corn production is concentrated in Southern, Central and Northern Mindanao, Central Visayas, and Cagayan Valley. Coconut production is prominent in the eastern part of the Philippines but almost completely absent in the regions north of Manila. Sugar production is concentrated on the island of Negros. Tobacco production is concentrated in the Ilocos Region and in Cagayan Valley. Abaca is produced mainly in the Bicol Region, Eastern Visayas, and Southern Mindanao. Pineapple production for export is limited mostly to the plantations in Bukidnon (Northern Mindanao) and South Cotabato (Southern Mindanao). Some small-scale production of pineapple takes place in Cavite and Laguna (in Southern Luzon), primarily for Metro Manila's demand. Banana production for export also is concentrated in Southern Mindanao although local varieties are grown all over the country. (See Table 1.8)

Rice is the preferred cereal of more than 75 percent of the population. Therefore, it is not surprising that rice is cultivated all over the country for subsistence and for the market. Furthermore, the rainfall, soil, and temperature over much of the country are suited to rice production. Rice requires adequate water in order to grow. Therefore, the highest concentrations of lowland rice are produced in areas with fine-textured alluvial soils, which have a high capacity to hold moisture. These soils in the Philippines are found mainly in Central Luzon, Cagayan

Valley, Cotabato Valley (in Central and Southern Mindanao) and Iloilo (in Western Visayas)--the major rice producing regions of the country. Climate determines the need for irrigation and multiple cropping of rice. Irrigation is important in Central Luzon, which experiences the longest dry season; it is less critical in Cagayan Valley and Cotabato Valley as they have shorter dry seasons.

Because sugar has a long growing season, rainfall distribution is especially critical. Sugar needs a dry ripening season with ample sunlight and a dry harvest season in order to generate a high sucrose content and to facilitate the transport of harvested cane to the sugar mills. Delays in transport reduce the sucrose content. Coarse textured alluvial soils are well suited to sugar production because of their high permeability. Although such soils have low fertility because of rapid leaching, the problem can be solved by proper fertilization practices. Northern and western Negros have the ideal rainfall distribution and quality of soil for sugarcane production in the Philippines.

The regional distribution of coconut production in the Philippines is determined by the coconut tree's need for large, steady amounts of water. Because the tree has no tap root, it cannot draw water from far below the surface. In the absence of irrigation, therefore, coconut needs to be planted in areas of nearly constant rainfall or in areas with a very short dry season. Thus, coconut is almost absent in the regions north of Manila, which have a relatively long dry season. Coconut production is most successful in light, deep, well-drained soils which have a moderate to high calcareous content. Much of the coconut production in the Philippines is concentrated in areas with year-round rainfall. These areas are characterized by coastal lowlands, which tend to have at least moderately calcareous soils, or by rolling slopes of recently active volcanoes (e.g.,

Quezon province and Bicol in Southern Luzon, Southern Mindanao, and Samar in Eastern Visayas). The Mindanao regions are more favorable to coconut production than Quezon, Bicol and Samar because they are relatively free from typhoons.

Corn is highly adaptable to a variety of agro-climatological environments--a factor which accounts for its widespread cultivation in the Philippines. Because of its short growing season, corn can be multicropped, intercropped (usually with coconut), or rotated with other crops (like palay, tobacco, cassava and vegetables). However, it is preferable to plant corn in areas which do not experience heavy rain or a dry season. Corn production in the Philippines is concentrated in climatic regions which have a dry season of one to three months or constant, even rainfall through the year.

Tobacco is adaptable to a wide range of soil and climatic conditions. The Ilocos Region produces much of the Virginia-type tobacco, and Cagayan produces a lot of the native tobacco. The difference is attributed to the chemical qualities of their soils. Cagayan has a monsoonal-type climate which influences the texture and aroma of the tobacco leaves produced. Abaca (manila hemp) is centered in Davao, Bicol and Eastern Visayas because of the year-round rainfall and well-drained loam soils derived from recent volcanic material in these areas. Davao also is relatively free of typhoons which seriously threaten the abaca plant.

## Chapter 2

### Descriptive History of Policies

#### Macroeconomic Policy

A series of balance of payments crises began right after World War II. At this time the pre-war exchange rate of 2 pesos per U.S. dollar was reinstated although consumer prices in Manila had increased nearly 600 percent and U.S. consumer prices had only increased 41 percent. This decision, together with the import needs for economic reconstruction and the reduced output capacity resulting from the war resulted in sizable and continuous trade deficits during 1946-49. By the end of 1949, the level of international reserves had dropped far below the 1945 level. The government imposed trade and exchange controls in an effort to curb imports, allocate scarce foreign exchange to "necessary" imports, and stabilize the exchange rate.

The policy responses to the 1949 payments crisis were circumscribed by the 1946 Bell Trade Act, or Philippine Trade Act. This Act extended the pre-war free trade relationship between the U.S. and the Philippines and stipulated that changes in the peso dollar rate or in the peso's convertibility with the dollar would require the approval of the President of the United States. (In addition, the pre-war rate of 2 pesos per U.S. dollar also was the par rate set under the law which established the Central Bank of the Philippines in 1949.) Instead of devaluing the currency and imposing import tariffs, the government imposed an advance sales tax on luxury and semi-luxury items (mostly imported) in 1948 and import quotas on "non-essential" and luxury imports in early 1949. Both actions were considered consistent with the Bell Trade Act. The payments

situation worsened again in 1949 due to election spending, a sharp drop in the export price of copra, a reduction in U.S. government expenditures in the Philippines, and speculation against the peso following the devaluation of the British pound. This time, margin requirements on letters of credit and foreign exchange controls were adopted. These policy measures, initially imposed to strengthen the balance of payments, soon became instruments for a development strategy based on import substitution. However, foreign exchange allocations remained oriented toward balance of payments considerations, and allocations were based on the priority of commodities to be imported. A new tariff code was enacted in 1957, reinforcing the policy bias towards import substitution.

The second balance of payments crisis occurred at the end of the 1950s. This one ushered in the process of exchange rate decontrol and multiple exchange rates in 1960, and the de facto peso devaluation and exchange rate decontrol in 1962. The devaluation was partly a response to the fundamental disequilibrium that had existed in the balance of payments since the start of the 1950s. It also was intended to complement decontrol of the exchange rate. The new tariff structure, which had been strengthened by protective adjustments of tariff rates following devaluation, also reinforced the decontrol of the exchange rates.

The third balance of payments crisis occurred in late 1969 and early 1970. This one was caused by structural weaknesses and an expansionary macroeconomic policy. Structural problems created a pervasive foreign exchange constraint, which left little leeway for an expansionary fiscal and monetary policy without a foreign exchange crisis developing.

The major weakness of the economic structure was its concentration on the highly protected domestic market. The protection structure adopted

during the 1960s is now viewed as having overwhelmingly favored the import dependent, import - substituting consumer manufacturing industries and disfavored agriculture and exportables. The bias against agriculture and exports accounted for the slow growth in export volume during the 1960s, after the initial surge in 1962-63 when the decontrol program was established.

The Philippine economy moved along at a sluggish pace during the 1960s, for several reasons. The first stage of "easy import substitution", which fueled the growth in the manufacturing sector during the 1950s, had just about run out of steam during the 1960s. At the same time, the incentive structure inhibited the growth of manufactured exports. As a result, the primary sector was burdened with both feeding the nation and earning the foreign exchange required by the import-dependent manufacturing sector. Exports did not grow fast enough to satisfy the country's import requirements, and a weak food sector restricted the demand for domestic consumer manufactures.

The government's financial policy was largely non-inflationary during the 1950s but became more expansionary during the second half of the 1960s for re-election purposes and to boost economic growth. Budget deficits were comparatively larger during this period; likewise, the rate of monetary expansion accelerated. The government's emphasis on infrastructure investments and on increasing the ratio of the gross domestic capital formation to GNP reflects its economic growth objectives. Political motives also were served by the expansionary policy: larger deficits occurred during the national election years as the incumbent administration attempted to improve its chances for re-election. The larger budget deficit in 1957 helped to trigger the move toward exchange rate decontrol and de facto devaluation in the late 1950s. The deficit in 1969 triggered the 1970 devaluation.

The current balance of payments crisis began in 1983. It was caused by the government's pursuit of economic growth during a time when the world commodity and financial environments were unfavorable and by an incentive structure which discouraged exports and an efficient allocation of investment resources. Economic growth was a primary rallying theme of the so-called "New Society", which was conceived with the establishment of the martial law regime in 1972. Thus, the Philippine government opted to rely on external debt to meet its growth objectives despite adverse external developments. As of December 1982, the Philippines was the sixth largest LDC borrower from the international private banks, following Mexico, Brazil, Argentina, South Korea, and South Africa (Williams, et al., 1983, Table 35 pp. 71-72).

The rapid growth of external debt allowed the government to continue its expansionary policies. There were repeated budget deficits beginning in 1975, which generally were higher than those during the 1960s. A sizable part of the external borrowing was used for expensive, overly capital-intensive projects or projects which had questionable social value for anyone but the President's friends. The growing external debt engendered real peso appreciation during the latter 1970s; hence, the exchange rate remained biased against exports and agriculture.

The process toward the 1983 crisis was accelerated by the failure of the Philippine government to put a brake on its expansionary policies during 1980-82. At this time the investment rate remained very high despite a substantial drop in the domestic savings rate and a precipitous fall in the prices of major exports. As projections of an early end to the world recession were disappointed, the government increased its reliance on short-term capital flows. It did this at a time when world interest rates had shot up and the real interest cost of external debt had increased.

This reliance on short-term capital flows proved to be disastrous when the unexpected Aquino assassination occurred in 1983. (See Intal, 1984.)

Government Revenues, Expenditures and Enterprises<sup>3</sup>

Compared to other countries, the public sector in the Philippines is a relatively small part of the economy. However, it has been growing faster than the rest of the economy in recent years. Government receipts are composed of tax revenues, social security contributions, general government income from property and entrepreneurship, and grants from abroad. As a share of GNP government receipts averaged 10.3 percent during 1951-60, 11.8 percent during 1961-72, and 15.1 percent during 1973-83. National government expenditures as a share of GNP increased from around 9 percent during the late 1950s and the 1960s to an average of about 15.5 percent during 1975-81. (See Table 2.1.) The increasing share of government revenues and expenditures in GNP is consistent with the experience of other developing countries.

A typical method of comparing tax performance among countries is to compare their relative tax efforts, i.e., the ratio of the actual tax-to-GNP ratio to the predicted tax-to-GNP ratio. In the Philippines the degree of tax effort during the mid-1970s remained the same as during the late 1960s: the actual tax-to-GNP ratio was only about 75 percent of the predicted tax-to-GNP ratio. The tax effort during the mid-1970s was below the international average, just as it was during the mid-1960s. Given the government's propensity to play a more active role in development during the 1970s, the relatively low government tax effort necessarily meant

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<sup>3/</sup> This section is largely taken from Intal, P. Philippine Public Finance during the 1970s: A Review, Philippine Institute for Development Studies (Project Working Paper 1985).

increased government borrowing. (It has been argued, however, that the officially recorded tax revenues do not fully capture the real extent of taxation. It is well known that during the 1970s, firms and selected individuals were asked for "contributions" to finance some favorite "prestige" projects of the first lady. Such contributions can be considered unofficial taxes.

There were major changes in government expenditure policy during the 1970s. First, expenditures for education were de-emphasized for other economic development expenditures. Expenditures for education declined from about 30 percent during the 1960s to about 11-12 percent during the late 1970s. In contrast, economic development expenditures increased from about 30 percent during the 1950s and 1960s, to about 40 percent during the 1970s and early 1980s.

Second, there was a marked shift from current expenditures on personal services toward capital outlays. Expenditures for personal services fell from more than 50 percent of national government expenditures during the mid-1960s to about 25 percent by 1980. On the other hand, capital outlays jumped from about 15 percent in 1985 to about 33 percent by 1980. The share of government capital outlays in GNP increased from less than 2 percent during the late 1960s to 3.6 percent during 1976-79, and 5.4 percent during 1980-83. The most important components of capital outlays during the 1970s and early 1980s were infrastructure investments and corporate equity investments. The former is the traditional focus of government capital formation; the later reflects the government's increased support of public enterprises during the late 1970s and early 1980s.

Finally, the debt service increased as a consequence of the government debt that had been increasing since the 1970s and the sharp rise in interest rates on the debt.

The pattern of public investment in infrastructure also shifted during the 1970s. Transportation and communication had been emphasized between the 1950s and early 1970s. Between the late 1970s and early 1980s, investments in power and electrification began to be emphasized instead. This shift reflects the government's decision to reduce the country's extreme dependence on imported oil at a time when oil prices were increasing and oil supplies were uncertain. The drive to diversify energy resources was successful in increasing the utilization of the country's geothermal resources. However, it also led to the controversial two billion dollar nuclear power plant project, which added to the country's external debt but never was completed.

The growth in the public corporate sector during the 1970s is remarkable. The number of audited government corporations and self-governing boards and commissions increased from 70, with total assets of P3 billion, in 1973 to 184, with total assets of P377.5 billion, in 1982 (C.O.A. Annual Reports, 1973 and 1982). If all the subsidiaries and acquired assets of the government corporations were included the total number of public enterprises would be much higher.

Government enterprises accounted for a large share of government expenditures during the late 1970s and early 1980s. Table 2.2 presents the annual budgetary contributions to government corporations and the top beneficiaries during 1975-84. The contributions accounted for an average of 13.5 percent of total budgetary expenditures during 1975-84. Two of the top beneficiaries of capital contributions are the two major government banks: the Philippine National Bank and the Development Bank of the Philippines. These two banks and the National Development Corporation (a diversified firm) were the major conduits for the government's support (including bailout) of a number of private enterprises. These private

enterprises, especially the firms owned by known friends of President Marcos, became financial burdens to the three institutions and, ultimately, to the national government. The "non-performing assets" of the two banks were transferred to the national government as part of the rehabilitation programs of the two banks.

Table 2.1 shows that the national government experienced budget deficits in 21 out of 27 years during 1957-83. The largest budget deficits as a share of GNP occurred in 1969, one year before the 1970 devaluation, and during 1981-82, two years before the 1983 crisis. Therefore, it appears that unusually large budget deficits helped to precipitate balance of payments difficulties. Although this does not mean there was a one-to-one correspondence between the government deficit and exchange rate depreciation, the cumulation of budget deficits put additional pressure on the exchange rate. Deterioration in the terms of trade and in the industrial trade policy regime also created pressures for devaluation.

#### Capital Market Interventions

After World-War II and until interest rates were deregulated in 1980, financial institutions were faced with regulated deposit and loan rates, apart from the portfolio ratios and reserve requirements that had to be maintained. Although the deposit rates were increased over time, the increases usually were not enough to compensate for the rate of inflation. As a result, real rates on savings and time deposits were very low and usually were negative. There also were ceilings on lending rates--a legacy of the 1916 Anti-Usury Law. The ceiling rates were 12 percent and 14 percent for secured and unsecured loans, respectively. The ceiling rates were not binding until the mid-1960s, when the inflation rate began to pick up. At the same time, effective loan rates were increased (Tan, 1980). The Anti-Usury Law ceiling of 14 percent was raised to 16 percent when the

Central Bank allowed public and publicly supported banks to impose a service fee of 2 percent during the 1970s. Nonetheless, since the average inflation rate (using the consumer price index) during 1971-80 was 15.2 percent, the real price of the official loan rate ceiling was negligible and even was negative during 1970-74 and 1979-80. (See Table 2.3.)

Low interest rates, especially during the 1970s, substantially influenced the allocation of credit. The interest rate became ineffective as an allocative tool, so the government had to rely more on credit rationing. An example of the latter is the President's Decree 717, which required banks to allocate at least 25 percent of their loanable funds for agricultural credit as of May 1975. In addition, because the government banks (especially PNB and DBP) are the most important commercial and investment lenders in the country, the ability to get loans depended in part on the "government connections" of the borrower (Sicat, 1985, p. 25). The low interest rate regime provided large companies access to capital resources for use in large, capital-intensive projects which have had questionable value. Because many of the private bank loans were secured and granted to corporations and large borrowers, the medium- and small-sized firms were not able to develop and grow as fast. (ILO, 1974, pp. 539-40). Philippine manufacturing is characterized by a low rate of labor absorption, largely the result of policy bias against small- and medium-sized establishments.

Financial developments also have been influenced by low interest rates. In the course of allocating credit, the government subsidized specialized financial institutions through differential rediscount privileges with the Central Bank, tax breaks, and other measures. Controls on deposit and loan rates led to enormous growth in the money market during the latter 1960s and 1970s, because the money market rates were higher than

deposit and lending rates. Thus, during the early 1970s a segmented financial market emerged: the heavily controlled banking services sector and the relatively uncontrolled money market sector. At this time the banks still engaged heavily in the commercial paper market, however. The government's control over the commercial paper market and non-bank financial institutions became more extensive after the 1981 scandal in which one person amassed large credits from both the banks and non-bank financial institutions, and then fled the country. This action hit hard a number of non-bank financial institutions in the Philippines.

Interest rate deregulation began in 1980 and was completed by January 1983, after the ceilings on short-term interest rates were removed. The real interest rate generally has been positive and rising since 1981 (except in 1984).

#### Labor Market Interventions

The government's intervention in labor pricing has centered on the imposition and enforcement of minimum wages and wage adjustments. Minimum wage legislation in the Philippines began with the passage of the Minimum Wage Law in 1951. Since then, there have been close to 30 legislative acts, presidential decrees, and wage orders passed to adjust the minimum wage or grant additional forms of compensation. Over time, minimum wages for non-agricultural and agricultural workers have become more differentiated. Higher rates are set for non-agricultural workers in Metro Manila than for those outside Metro Manila, and higher rates are set for plantation agricultural workers than for non-plantation agricultural workers. Wage legislation introduced since 1974 has further differentiated wage adjustments. Changes have been made in basic pay, the cost of living allowance, and the thirteenth month pay. (See Lamberte, et al., 1985; Tidalgo and Esguerra, 1982).

The enforcement of minimum wage legislation does not appear to have been successful. The real legislated wage rate declined twice between 1972 and 1983: during the early 1970s and during 1981 and 1982. The average daily wage rate for industrial workers in Manila declined continuously during the 1970s. (No data are available for the 1980s because the Central Bank stopped generating the series in 1981.)

The decline in real wage rates during the 1970s may be attributed to a macroeconomic policy which permitted a larger-than-necessary peso devaluation in 1970 and prevented a real exchange rate appreciation during 1972-74 (Lal, 1983). This analysis uses the tradable-non-tradable model of exchange rate depreciation which assumes that the labor-intensive sector is the non-tradable sector. The continued decline in the real wage despite the real peso appreciation during the latter 1970s runs counter to the implications of the model, however. A more compelling explanation for the decline in wage rates is an incentive structure which inhibited employment growth while the labor force was expanding rapidly. The inward-looking development strategy and low interest rates led to a sluggish manufacturing sector and a low rate of labor absorption.

Government policy in the area of labor-management relations appears to have favored employers rather than workers. (See Tidalgo and Esguerra, 1982, pp. 112-117.)

During the 1970s, strikes, picket lines and lockouts were discouraged in most industries and were banned entirely in vital industries. In non-vital industries, strikes were allowed only for reasons related to "unresolved economic issues."

A rash of industrial strikes broke out in 1986 and 1987, the first two years of the Aquino Administration. The strikes appear to have been a delayed reaction to the economic policies of the 1970s, recession in 1984-85, and the unstable political environment in 1986-87.

During the 1970s the government curtailed labor rights but failed to increase the rate of industrial labor absorption. The real returns to labor remained the same, while the security of employment deteriorated as firms became more vulnerable to fluctuations in the domestic and international markets. The deterioration in workers' welfare contributed significantly to the rise in labor militancy during the 1970s and 1980s. (See Intal, 1987c).

#### Trade Policy and Fiscal Incentives

The pace and pattern of growth in the Philippine economy has been shaped by the tariff structure, tax incentives, and sectoral priorities in import and foreign exchange licensing and control.

Import licensing and foreign exchange controls were the primary methods of making adjustments in trade and payments during the 1950s because the Philippines could not impose tariffs on U.S. products and it was determined to maintain a fixed exchange rate. Import licensing initially was used for balance of payments reasons. However, it soon became the primary instrument of protection for domestic industries and encouraging local entrepreneurship. Import licensing was extensive, and imports were classified in two ways: as capital or consumer goods, and as essential, semi-essential, or non-essential goods. The most stringent import quota and foreign exchange allocations were placed on non-essential consumer imports, the least stringent on essential capital and consumer goods. This policy encouraged import substitution at the finishing stages of non-essential and semi-essential consumer goods.

When controls on imports and foreign exchange were eliminated during the early 1960s, tariffs became the main instrument of protection. The Tariff Law of 1957 placed the highest tariff rates on non-essential consumer imports and the lowest rates on essential producer goods, following the criteria of the old import control system.

A revised Tariff Code took effect in 1973, reducing the dispersion in tariff rates. Nonetheless, the cascading nature of the tariff system remained the same. Furthermore, the revisions in the tariff code actually increased the average tariff rate by 3 to 4 percent (ILO, 1974, p. 113). The Philippines had the highest average tariff rate in Southeast Asia during the 1970s. In 1978, its average unweighted tariff rate was 44.2 percent, compared to 33.0 percent in Indonesia, 29.4 percent in Thailand, 15.3 percent in Malaysia, and 5.6 percent in Singapore (Bautista, 1981).

In 1970, the Philippines imposed temporary export taxes on traditional exports, at rates ranging from 4 to 10 percent ad valorem. The taxes initially were used as a stabilization measure, in conjunction with the 1970 peso devaluation. However, they ended up being incorporated in the 1973 Tariff and Customs Code. In 1974, an additional export premium tax was levied on the difference between the prevailing export price and an administratively set base price. As a result, the export premium tax became intrinsically the stabilization tax. Although the rates and the coverage of export taxes were changed from time to time, they remained a significant disincentive to the traditional export sector and were responsible for much of the net income transfers from the traditional export sector to the rest of the economy.

The average effective rates of protection on sector and commodity goods are given in Table 2.4. The estimates, drawn from Tan (1979, 1986) and Power and Sicat (1971), take into consideration the protective effect of the differential tax bases for the sales or the compensating tax between imports and domestically produced goods. The highest effective rates of protection were given to the import-substituting consumer goods industries. Much lower protection was accorded to exports and to the agriculture and primary sector. The general structure of protection remained the same during the 1960s and 1970s.

Duty exemptions became more pervasive during the 1970s and involved primarily capital goods as part of the country's investment incentive laws. Hence, the figures given in Table 2.4 overstate the actual rate of protection accorded the capital goods sector. The 1970s also saw the resurgence of non-tariff barriers, especially during the second half of the decade when they were increasingly used to protect intermediate goods industries (see de Dios, 1985). Therefore, the figures given in Table 2.4 understate the actual rate of protection for a number of industries in the intermediate goods sector. After a hiatus during the 1960s, import substitution in intermediate goods picked up again during the 1970s, indicating that the non-tariff barriers had substantial protective effect (see Intal, 1987a).

Trade protection laws clearly favored import substitution. With this framework the Philippine government created a window for growth in non-traditional exports. Initially generous fiscal incentives were provided to export and import-substituting firms. Later free trade zones were established and permission was granted to export firms to obtain their raw materials at near border prices (primarily) directly from abroad. As a result, non-traditional exports, especially garments and semi-conductor devices, grew rapidly during the decade. For the most part, however, the new export sector functioned almost as an export processing zone and bonded warehouse "enclave". It had little interaction with and provided little benefit to the domestic economy except through the employment of labor. More importantly, the ratio of exports to GNP declined from about 19 percent during the late 1960s to 16 percent during the late 1970s and early 1980s. (Intal, 1987a). Part of this decline was due to the sharp increase in imported non-traditional manufactures which were raw material-intensives. The net decline in the ratio of exports to GNP at the time of

rising external debt was one of the critical reasons for the onset of the external debt crisis in 1983.

A tariff reform and import liberalization program was initiated in 1981 and was designed to run to 1985. The objective of the program was to further reduce the average rate and dispersion in tariffs. The program proceeded nearly according to schedule until 1983; however, during the 1983-85 crisis tariff reductions and import liberalization were largely ineffectual because the binding constraint was lack of foreign exchange. Therefore, import control and foreign exchange rationing were used extensively. With the easing of the foreign exchange bottleneck in 1986, the Aquino government started a phased import liberalization program. This program initially involved supplanting import controls with equivalent tariffs, it was followed by a gradual reduction in tariffs.

#### The Exchange Rate

From 1903 until the start of World War II, the exchange rate was fixed at 2 pesos per U.S. dollar. During this period the Philippines followed the gold exchange standard in which stability of the exchange rate was an overriding objective and the balance of payments was adjusted by making changes in domestic prices and output. (See Intal, 1983 for a description of the pre-World War II period.) The pre-war exchange rate was reinstated right after the war and was maintained during the 1950s, primarily through trade and exchange controls. In 1960, a multiple exchange rate system was instituted in the process of exchange decontrol. The official "preferred" rate remained at two pesos per U.S. dollar, while a "free market" rate was initially set at P3.20 per U.S. dollar. The free market rate stabilized at P3.90 per U.S. dollar, and became the basis for the official devaluation of the peso in 1965. It remained in effect until 1970. Exchange controls were reinstated in 1968 when foreign exchange

difficulties surfaced again. The balance of payments crisis in 1969 led to the floating of the peso in early 1970. The peso was under a "managed float" during the 1970s: the exchange rate rose from P6.40 per dollar at the end of 1970, stayed around P7.40 per dollar for several years during the second half of the 1970s, and reached P8.54 per dollar in 1982. By 1983, the exchange rate was P11.11 per dollar and in 1986, it was about P20.50 per dollar (see Table 2.5). During the economic crisis which began in 1983, foreign exchange controls and rationing were once again imposed for a year or so.

Table 2.5 presents the current account balance and the various exchange rates. Although the current account balance was nearly in balance, there was disequilibrium in the balance of payments during the 1950s, as evidenced by the large black market premium. The black market premium during the 1970s was lower than the premium during the 1950s, despite the historically large current account deficits associated with the large volume of borrowing then. The large deficits even allowed for the accretion of the gross foreign exchange reserves of the Central Bank.

The black market exchange rate, as a financial lever, takes as given trade and other government interventions in the economy. In a sense, the black market exchange rate is a spillover of the official exchange rate; it is not synonymous with the free trade equilibrium exchange rate.

The free trade equilibrium exchange rate is estimated in the paper using a simple version of the elasticities approach (Schiff, 1986). The actual exchange rate is adjusted for the imbalance in the current account and for the foreign trade policy regime in order to estimate the "free trade equilibrium exchange rate".

Assume that a country has few exports and imports. Assume also that the average import tariff rate and export tax rate are given. Then,

the equilibrium exchange rate under a situation with sustainable payments and no trade distortion is (Schiff, 1986, p. 6):

$$E^* = E_0 \left[ 1 + \frac{CAB + \frac{t_m}{1+t_m} Q_D \eta_D - \frac{t_x}{1-t_x} Q_S \epsilon_S}{\epsilon_S Q_S + \eta_D Q_D} \right]$$

where

$E^*$  = free trade equilibrium exchange rate

CAB = current account deficit (- means surplus)

$t_m$  = tariff rate for imports

$t_x$  = export tax rate

$Q_S$  = supply of foreign exchange

$Q_D$  = demand for foreign exchange

$\epsilon_S$  = elasticity of supply of foreign exchange,  
assumed to be equal to the supply price  
elasticity of exports

$\eta_D$  = elasticity of demand for foreign exchange, assumed  
to be equal to the price elasticity of demand  
for imports.

Two estimates of the free trade equilibrium exchange rate were computed; they are presented in the Appendix to Chapter 2. The first estimate assumes that the actual current account balance is sustainable (E2); it is called the free trade exchange rate. The second estimate assumes that the sustainability requires a zero current account deficit (E\*); it is called here the free trade equilibrium exchange rate. The correct free trade equilibrium exchange rate is probably somewhere between

these two estimates. However, given the record of investment waste in the Philippines during the period, a zero current account deficit probably is more realistic. Much of the analysis in the succeeding chapters uses this measure,  $E^*$ .

Estimates of the nominal and real free trade equilibrium exchange rate and two estimates of the actual real exchange rate are presented in Table 2.5. Over time the pattern of the real actual exchange rate reflects a delayed response to differences between the inflation rates at home and abroad. The real actual exchange rate increased in 1962 with the peso devaluation and declined during the 1960s, until the 1970 peso devaluation raised it again. During the late 1970s it declined again, helping to precipitate the 1983 peso devaluation. (During the 1950s, the Philippine inflation rate was lower than the world inflation rate; however, the peso was heavily overvalued and defended by trade controls). Differences in the movement of the real actual exchange rate and the real free trade equilibrium exchange rate present a similar story: the tendency to overvalue the peso which is only partly and temporarily reduced by successive peso devaluations.

During the 1960s and 1970s, the equilibrium nominal exchange rate was always higher than the actual nominal exchange rate. The difference was greatest between 1975 and 1986. About 92 percent of the overvaluation of the peso during this time was attributable to the trade policy regime. The overvaluation was defended primarily by trade and exchange controls during the 1950s, high tariff walls during the 1960s, tariffs, non-tariff barriers, and external debt accumulation during the 1970s and early 1980s, and exchange controls between 1983-85.

Table 2.5 shows the differences between the actual real exchange rate and the free trade equilibrium real exchange rate. The latter was

computed as the product of the free trade equilibrium exchange rate and the ratio of the (trade-weighted "world" wholesale) price index to the domestic non-agricultural price index that would have been operative under free trade and an equilibrium exchange rate (Pna\*). The free trade non-agricultural price index, or the adjusted non-agricultural price, was approximated as follows:

$$Pna^* = \beta \frac{PnaT \cdot E^*}{(1 + tnaT) E_0} + (1 - \beta) PnaNT$$

where:

PnaT = price index of (tradable non-agriculture)

PnaNT = price index of (non-tradable non-agriculture)

$\beta$  = share of value added of tradable non-agriculture  
to value added of all non-agriculture at constant prices

tnaT = implicit tariff on tradable non-agriculture

Tradable non-agriculture was approximated by mining and manufacturing; non-tradable non-agriculture was approximated by utilities, construction, and services. The implicit tariff on tradable non-agriculture is the weighted average of the implicit tariff on imports and the implicit export tax on mining. The share of mining value added to the total value added of mining and manufacturing at constant prices was used as the weight for the implicit tax on mining.

Table 2.5 indicates that the real peso overvaluation, as a percentage share of the real free trade equilibrium rate, fluctuated considerably between 1962 and 1986. It averaged 14 percent per year during 1962-66, 20 percent per year during 1967-69, 16 percent per year during 1970-74, 24 percent per year during 1975-82, and 20 percent per year during 1983-86.

The adverse effect of the peso overvaluation on agricultural output and incomes is shown in the analyses of direct and indirect price interventions presented in the succeeding chapters.

### Types and Phases of Government Intervention in Agriculture

#### Types of Interventions

The government intervened primarily in the product market at the producer and retail levels, and at the border. The instruments of direct intervention used were farmer price supports, consumer price ceilings, export taxes, import tariffs, production levies, monopoly imports and exports, and export bans. The major instruments of indirect intervention were the industrial protection system and management of the exchange rate.

The government intervened also in the input market, by providing public goods (e.g., research, irrigation) for free or at reduced rates to farmers, by subsidizing credit, by stipulating minimum wages, and by subsidizing (or implicitly taxing) farmers on their fertilizer consumption. Interventions in the input market have been less far-reaching than interventions in the product market because of budget constraints and, for minimum wages, lack of control over the labor market. Table 2.6 catalogues government direct interventions by instrument and by product.

Rice is the foremost "political commodity" and has been the focus of government intervention since the 1930s. A government marketing agency purchases and sells rice domestically and serves as the sole importer and exporter of rice. This marketing agency only accounts for a small share of the rice trade, however. The government also provides production support services for rice. Corn is the other key foodgrain, and the mechanism of government intervention for it is similar to that for rice, except that production support services are scantier for corn. Copra, coconut oil and desiccated coconut are the major by-products of coconut. The government

largely ignored the coconut industry until the 1960s. The sugar industry had a very strong lobby until the 1960s and therefore experienced little government intervention, except for the allocation of the sugar quota. However, during the 1970s, government intervention was very pervasive in the sugar and coconut industries and was exercised through controls on product marketing and exports and through taxation.

The government's pricing and marketing strategy for rice and corn has been to set consumer price ceilings and farmer price supports and to exert (effective) monopoly control in international trade. During the rice deficit period of the 1950s and early 1960s, the farm price floors were realized more frequently than the consumer price ceilings, and domestic prices tended to be higher than border prices. During the rice surplus years in the late 1970s, the consumer price ceilings were more effective than the farm price floors, and domestic prices tended to be lower than border prices. These differences are explained primarily by the deficiencies in the government's management of rice imports in the 1960s and rice exports in the late 1970s.

The Philippines was largely self-sufficient in corn production during the 1950s and early 1960s. Corn management at that time was used to import emergency supplies of corn when bad weather struck. During the 1970s, domestic prices were set higher than border prices in order to encourage import substitution to meet the domestic demand for yellow corn.

Before the 1970s, government pricing and marketing interventions in the export crops sector were minimal except for administering the U.S. sugar quota among Philippine sugar producers. Indirect interventions such as manipulations of the exchange rate had more of an impact on the sector than product-specific interventions. During the 1970s, the government intervened heavily in the traditional agricultural export sector, which

includes the sugar and coconut industries. It imposed export taxes, controlled foreign and domestic marketing by establishing a government trading monopoly (sugar), provided support to a privately managed de-facto government-funded coconut "parastatal" with substantial monopsony power, and imposed a production levy on coconut. The government's interventions in the coconut and sugar industries during the 1970s were controversial because they exacted a heavy burden on the producers, they did not effectively address the structural problems of the two industries, and they provided opportunities for rent seeking to a few politically well-placed individuals.

Government interventions in the input market have been predicated on subsidizing inputs. During the mid 1950s, the government increased its investments in irrigation when President Magsaysay used irrigation as part of his social amelioration program for tenants. It did so again during the 1970s and early 1980s in response to a severe rice crisis and the social benefits from irrigating high yielding rice varieties. Irrigation remains the most important form of government subsidy to rice farmers, although water rates have been low and the fees collected have not been enough to recover the cost of operating and maintaining the irrigation systems (Cruz, et al., 1987).

Government interventions in the credit market also have been designed to subsidize farmers. However, the agricultural credit program set up during the 1970s died out during the early 1980s because of the deteriorating repayment rate and the tight but unstable monetary policy during 1983-85. Government interventions in fertilizer also have been designed to subsidize farmers. Despite the subsidization, however, domestic fertilizer prices remained higher than border prices, except during 1973-75. At this time interventions were explicitly intended to

make the domestic prices of fertilizer for food crops lower than border prices, if only temporarily (see Appendix Table A2.2).

#### Phases of Intervention

Government pricing interventions in agriculture in the Philippines can be divided broadly into four phases. During the American colonial period (1910-1934), there was minimal price intervention (Phase I). From the start of the Philippine Commonwealth up until the 1960s, government intervention in agriculture focused largely on the food sector (Phase II). This intervention intensified and widened in scope during the 1970s (Phase III). Efforts to reform the system of interventions started during the early 1980s but not until the change in administration took place in 1986 did the government begin to seriously reshape its policies for the sector (Phase IV).

Table 2.7 lays out the stages of government intervention in agriculture and the corresponding macroeconomic and political developments. During Phase I, the Philippines was a colony and followed a conservative fiscal and monetary policy under the gold exchange standard. The peso-dollar rate was largely in equilibrium. The establishment of the Philippine Commonwealth in 1935 and the Philippine Republic in 1946 led to the beginning of government intervention in agriculture. More importantly, it fastened a more aggressive policy stance toward industrialization, primarily through the use of exchange rate controls during the 1950s, and tariff protection during the 1960s. The peso was overvalued during both decades because of trade distortions. The country followed a conservative, domestic form of government in Phase II. In 1972, Martial Law was established. The peso continued to be overvalued from trade distortions and disequilibrium in the balance of payments resulting from the government's debt-financed expansionary policy (Phase III). Reforms in

agricultural pricing policy took place during 1983-86 (Phase IV), during a period of political liberalization.

Phase I (1910-1934)

Food Price Policy

Government interventions in food pricing and marketing were minimal during the period of the American colonial administration in the Philippines. A specific tariff on rice imports was used and had been in place since the last years of the Spanish regime in the Philippines. As Philippines has been a net importer of rice since the late 1970s, the tariff rate provided protection to domestic rice farmers during most of the period from 1914 to 1940 (see Appendix Table A2.3). The import duty was adjusted upwards beginning in 1933, apparently to help protect the domestic agro-based industries (i.e., poultry raising, coconut oil/lard, beef, and rice) from the exports of countries which devalued their currencies vis-a-vis the U.S. dollar and the Philippine peso.

The other noteworthy interventions during the period occurred during 1919-21, when domestic prices fluctuated with the dramatic changes in the world economy. During this time the Philippines experienced a balance of payments crisis. When the international price of rice rose to its highest level in 1919-20, the colonial government reacted in several ways. It created incentive measures for domestic rice and corn production, required inter-island vessels to provide tonnage for shipment of rice whenever necessary, imposed penalties for monopoly behavior, hoarding, and speculating in palay (unmilled rice), rice and corn under extraordinary circumstances, and authorized the governor-general to prohibit the importation of rice for a fixed period of time (Mears, et al., 1974).

On the whole, the implicit food pricing policy of the American colonial government was to provide price protection to domestic producers

and to attain self-sufficiency. During unusual circumstances the government also attempted to eliminate supply uncertainties for consumers. It is worth noting that, even during the years of peak world prices (1919-20), the domestic price of rice was higher than the import price.

#### Export Pricing Policy

The Philippines had a free trade relationship with the United States from 1910 to the 1930s. The colonial government did not intervene directly in the pricing and marketing of sugar and coconut; the growth of these industries was determined by foreign economic developments rather than by domestic policies.

Between 1909 and 1919, the world prices of sugar, copra and coconut oil increased sharply. This increase encouraged the expansion of sugar and coconut farms, the establishment of domestic coconut oil mills, and the modernization of domestic sugar milling. The newly established (in 1916) Philippine National Bank (PNB) provided credit to owners of the sugar and coconut oil mills. When export prices declined in 1921, most of the coconut mills closed down and PNB became almost bankrupt.

The U.S. Tariff Act of 1922 initially provided relief to coconut and sugar producers and millers. Later, the U.S. Tariff Act of 1930 and the U.S. Revenue Act of 1934 provide aid by imposing tariffs on U.S. imports of coconut oil and sugar. Since at this time the Philippines was considered part of the U.S. customs union, the tariffs encouraged U.S. consumers of sugar and coconut by-products to buy Philippine exports. The tariff virtually excluded imports of coconut by-product from all other sources. The share of Philippine sugar exports in U.S. sugar consumption rose from 8.6 percent in 1928 to 18 percent in 1934; Cuba's share fell correspondingly from 47 percent to 25 percent during the same period. The expansion of Philippine sugar exports to the United States also was fueled

by several independence bills in the U.S. Congress. These bills provided for allocating sugar quotas to individual mills and planters based on production (see Intal, 1983).

#### Phase II (1935-1969)

##### Food Sector

A "rice crisis" developed during the beginning of the Commonwealth government--the government form that would lead the Philippines towards eventual political independence from the United States. The rice crisis provided the impetus for the government's real intervention in rice and corn marketing. Poor harvests caused by bad weather during 1934-36 reduced production by more than 20 percent and resulted in a price increase of 25 percent in 1935 and 27 percent in 1936. To provide price relief to consumers and to increase domestic supplies, the government imported rice free of duty and set up a temporary distribution apparatus to distribute the rice. The Commonwealth government formed a Rice Commission in 1936 to study the rice problems and recommend more permanent solutions.

Upon the recommendation of the Commission, the National Rice and Corn Corporation (NARIC) was established in 1936. It was tasked with ensuring a steady supply of rice at a price which was within the buying power of consumers and which acknowledged the farmers' cost of production and allowed them a reasonable margin of profit. NARIC attempted to meet both objectives by well-timed importations and local purchases at a fixed price which was announced in the strategic surplus regions before the harvest season. Appendix Table A2.3 shows that the domestic price of rice did not increase after 1936 although output declined again during crop years 1937-38 and 1938-39. NARIC had been more successful in stabilizing prices before World War II because it had political support and adequate funding from the Commonwealth government then (Mears, et al., 1974).

Government intervention in food pricing and marketing during the 1950s and 1960s followed the pattern of the pre-war NARIC. The government set support prices for farmers and ceiling prices for consumers. The Philippines remained a marginal rice importer at this time. Significant imports of rice were not allowed until the National Economic Council certified the existence of a rice shortage. Even then the legal and administrative obstacle to importing rice were formidable, and it was difficult to accurately forecast domestic rice production. These problems plagued the Garcia and Macapagal administrations during the early 1960s and contributed to their electoral defeats.

The postwar NARIC and its successor agency, the Rice and Corn Administration, tried to protect the price supports for farmers and price ceiling for consumers by squeezing the marketing margin. However, inadequate financing, political interference, and poor management of stocks plagued both agencies.

High yield rice varieties were introduced in the mid-1960s and marketed through a major national campaign to speed up their use. As a result of this campaign, the Philippines attained self sufficiency in rice production in the late 1960s.

#### Export Sector

Government intervention in sugar pricing and marketing started in 1934 as a result of the Jones-Costigan Act which established the quota on U.S. sugar imports. Philippine exports of sugar to the United States stood at 1.28 million short tons in 1934. The U.S. quota for the Philippines was 0.98 million short tons in 1935, and 1.0 million short tons in 1936. The Philippine Independence Act limited the amount of Philippine sugar which could enter the U.S. duty free to 0.98 million short tons in raw value in 1937.

Because Philippine sugar exports in 1934 were higher than what was allowed by the quota for that year, the Governor General of the Philippines approved a sugar limitation bill in December 1934. This bill was designed to bring Philippine production in line with the U.S. quota while allowing for domestic consumption and reserve stock. The Governor General was responsible for setting and allocating production quotas. After the inauguration of the Commonwealth Government this function was transferred to the newly established Philippine Sugar Administration.

The Sugar Limitation Act guided the allocation of sugar until 1973. The allocation system stipulated under this Act consisted of: (a) the export quota, which dictates how much each mill and planter will contribute to the total export quota; (b) the domestic quota, which millers and planters must provide for before they are allowed to export; and (c) the provision for a reserve quota.

During the 1950s and 1960s, the sugar price in the United States was almost always higher than the world free market price. Philippine sugar planters and millers therefore received an export premium over the world price on their exports. The domestic quota which producers were required to fill before exporting was designed to ease the pressure of price on domestic sugar consumers. The domestic price of sugar was lower than the export unit value but higher than the world free market price.

There were not industry-specific policies on coconut production until the 1960s. Before then only minor taxes were imposed in order to finance the operations of the Philippine Coconut Administration which was established in 1954.

For the sugar and coconut industries, and the rice and corn industries, general macroeconomic policies were important determinants of industry profits and performance. The overvaluation of the peso during the

1950s reduced the potential profitability of sugar and coconut farming and discouraged investment in coconut processing. The peso devaluation in 1962 and favorable export prospects encouraged expansion of sugar and coconut production.

### Phase III (1970-1982)

#### Food Sector

Another "rice crisis" emerged during this period and precipitated more active intervention by the government in the food sector. Poor weather, pest infestation, and the great Central Luzon flood of 1972 led to a 17 percent drop in rice production during crop years 1971/72 and 1972/73. The production shortfall occurred in the midst of a worldwide rice shortage which pushed the world price of rice upwards by three to four times. The government imposed price controls and used rationing and the mixing of rice and corn to keep the domestic price of rice below the prevailing world price.

To recover from the crisis and regain self-sufficiency in rice production, the government embarked on a major production, credit, and extension program, the so-called Masagana-99 program. The purpose of the program was to further promote the adoption of high yielding varieties and thereby increase rice yields. At the same time, the government subsidized the use of fertilizer for rice and corn farmers. By 1976, the country had largely recovered from the rice crisis.

The rice and corn agency, renamed National Grains Authority (NGA) in 1972, expanded its range of control. NGA imported wheat for flour millers in 1974 because it was exempted from paying tariffs on wheat. This allowed flour millers to produce flour at the government-mandated ceiling prices. In 1975, NGA was given the exclusive right to import wheat. Later on, it further expanded its control to include the domestic procurement and

exclusive importation of mungbean, soybean, and other feed ingredients (David, 1983).

During this time the government also established the Food Terminal, a large processing and marketing complex. Through the terminal and its retail outlets, basic foodstuffs were offered at low prices in poor urban areas. In 1980, the Food Terminal and its outlets became part of the expanded operations of the National Grains Authority.

#### Export Sector

Explicit taxation of agricultural and mineral exports began in 1970. At this time, the peso was devalued in order to stabilize prices and general revenue. In addition, less processed goods were taxed more heavily than highly processed goods as a way of encouraging further domestic processing of exports. When the world prices of sugar and coconut shot up in 1973-74, the government imposed an additional surcharge on these products called the export premium tax.

During the 1970s, the government intervened more actively in the sugar industry by establishing a government monopoly in sugar trading. In order to stabilize domestic sugar prices, the government ordered the Philippine National Bank to purchase the sugar and PNB's subsidiary, the Philippine Exchange (PHILEX), to handle all sugar exporting. (The Philippine National Bank has been the major financier of the sugar industry through crop loans to planters and investment loans to millers.) Previously the government role had been limited to regulating sugar quotas and carrying out research and extension with the private sector.

The government monopoly in sugar continued through the 1970s despite the losses that PHILEX and the sugar industry incurred in 1975-76. Anticipating a further increase in world sugar prices, the agency held onto its stake until prices collapsed. In 1977, the government expanded the

powers of the Philippine Sugar Commission (PHILSUCOM) and set up its subsidiary, the National Sugar Trading Company (NASUTRA), to handle the monopoly sugar trading.

Continuing the government monopoly trading in sugar despite the PHILEX fiasco fits with the government's preference for a "single agency" concept. Under this concept a single trading agency replaces a system of individual sellers, brokers, and middlemen. The single selling agency allegedly permits better control of supply, more efficient marketing, and a stronger position for the country vis-a-vis external countries and companies (Marcos, 1976, pp. 112-115).

Government intervention in the sugar industry was further expanded when PHILSUCOM and NASUTRA acquired the leading transport enterprises for sugar and sugarcane and the bulk storage and handling facilities for sugar exports (Marcos, 1980, p. 61). PHILSUCOM also established new sugar refineries and operated sugar centrals.

The government also intervened actively in the coconut industry during the 1970s. The impetus was provided by the sharp increase in the world price of coconut oil. This increase adversely affected the domestic producers of coconut-based consumer products who were subjected to price controls in their own markets. Starting in 1973, a levy was imposed on coconut producers in order to generate a subsidy for these producers. Later, the coconut levy was used to finance two controversial programs for the coconut industry: the vertical integration program, and the replanting program.

The vertical integration program was designed to make farmers owners of coconut trading and processing firms. The procedure was to purchase a bank and use it as the implementing institution for purchasing coconut oil mills. The firm that was created to do this, United Coconut

Mills, Inc., (UNICOM) eventually dominated the coconut oil milling industry.

A coconut replanting program was promulgated in 1974 but actual replanting did not begin until 1980. The program involved the use of a particular high yield coconut variety from the Ivory Coast. The program was controversial because the government's top coconut administrator was the only Philippine franchisee for the variety and his coconut seed nut farm stood to profit handsomely from the arrangement.

The policy formulating and implementing institutions in the coconut industry were headed by the same individuals who managed the sugar industry. This provided opportunities for rent seeking and personal gain.

#### Phase IV (1983-1987)

The economic crisis that took place after 1983 led to political liberalization and reforms in government intervention in the economy.

Some political liberalization began when the Marcos regime held elections and allowed more criticism from the press during 1983-85. However, the real liberalization came about when the administration changed after the February 1986 "revolution".

The macroeconomic environment during the 1980s has undergone a lot of change. In the early years, tariff rates were reduced and interest rates were deregulated. However, the 1983 balance of payments crisis halted the trade liberalization process. Trade and exchange controls were instituted at the same time that the peso was devalued, partly because the debt moratorium had greatly restricted trade credit flows to the Philippines. The Central Bank drastically increased the domestic interest rate, helping to trigger an economic recession. The adjustment measures were relaxed in 1985 and again after February 1986. The new government put into place an economic recovery program that combined a substantial fiscal stimulus and institutional and structural reforms.

In the agricultural sector, some pressures for reform came from the sugar and coconut industries. However, during the Marcos regime, the strongest pressure for policy reforms came from the International Monetary Fund and the World Bank.

In 1985, these institutions required the Philippine government to privatize the Philippine sugar and coconut industries and to reduce the control over the industries held by two prominent business partners of the President. In response, the government conducted two interagency studies on the sugar and coconut industries, dissolved NASUTRA and replaced it with a private marketing body (the PHILSUMA), opened domestic sugar trading to the private sector, moved to dissolve UNICOM, and expanded the membership of the boards of directors of the Philippine Coconut Authority and the Philippine Sugar Commission. The establishment of the new government in 1986 strengthened the privatization of the two industries. From that time on the new government has focused more on the regulatory than the trading function.

## Chapter 3

### Prices and Measures of Price Interventions

Direct price interventions refer to price controls or subsidies, explicit or implicit exports, taxes on imports or domestic products, and quantitative restrictions. Indirect price interventions include industrial protection and manipulation of the exchange rate away from the free trade equilibrium exchange rate.

In this study the Philippines is assumed to have a small open economy, so world prices are taken as given. The net effect of direct price interventions on the relative prices of agricultural products is determined by measuring the difference between the actual relative prices and the relative prices that would have prevailed in the absence of direct price interventions. Non-intervention prices are obtained by looking at the relative border prices at the official exchange rate, adjusted for marketing costs. Similarly, the net effect of direct and indirect price interventions on the relative prices of agricultural products is determined by measuring the difference between the actual relative prices and the relative prices that would have prevailed without the interventions. The latter price is obtained by looking at the adjusted relative border prices at the free trade equilibrium exchange rate.

#### Product Selection and Prices

The four dominant agricultural crops in the Philippines are examined here: rice, corn, sugarcane, and coconut. Rice and corn are the country's major foodgrains, and both are importables. Corn also is a major foodgrain. Sugarcane and coconut are the most important traditional export crops. In 1986, the four crops together accounted for 86 percent of total harvested area and 55 percent of total agricultural crop value added.

The assumption of a small open economy is reasonable for the analysis of these four crops. The Philippines is a small producer, importer, and exporter of rice, corn, and sugar. Although the country is the world's largest producer and exporter of coconut and coconut products, its coconut products are easily substituted with competing products such as palm oil and soybean oil. Furthermore, coconut oil, the most important by-product of coconut, constitutes only a small portion of the world trade in vegetable oils.

Because the islands of the country are so widely dispersed, the choice of which domestic prices to use for each crop in the analysis is somewhat arbitrary. In this study, wholesale and retail prices in Manila are used as the standard, and the standard for producer prices is the average for the whole country. National producer prices have been averaged because three of the four crops are widely produced in the country. The prices used in the study are those of shelled yellow corn at the producer, wholesale and retail levels; centrifugal sugar (97<sup>0</sup>) at the millgate (producer) and wholesale levels; brown sugar (97<sup>0</sup>) at the retail level; unmilled rice (or palay) at the producer level; milled rice at the wholesale and retail levels; and copra (dried coconut meat) at the producer and wholesale levels (copra is not sold at the retail level).<sup>1</sup> The domestic producer prices for palay, shelled yellow corn, and copra represent the national average of prices received by farmers, taken from the annual surveys of the Bureau of Agricultural Economics (BAEcon). A milling recovery rate of 65 percent was used in converting the price of

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<sup>1</sup>/ Copra is processed into coconut oil and copra meal/cake. Desiccated coconut is another important coconut by-product, processed from young coconuts.

palay into its milled rice equivalent. The producer price for centrifugal sugar is the millgate price, computed as the weighted average of the export price of sugar ex-warehouse from the Victorias central, and the wholesale price ex-central delivered Manila. The two weights represent the proportional share of product being exported, and one minus that share (Nelson and Agcoili, 1983). The millgate price from 1974 to 1986 is the composite price paid or pegged by PHILEX/NASUTRA/SRA, which is a weighted average of the export price, the domestic price, and the price of reserve sugar.

During the import years (1960-77), the border price of rice is the unit value of c.i.f. imports. During the export years (1978-83), the price of Thai rice is 35% broken f.o.b. Bangkok. During the years the Philippines did not import (1961, 1969-70) or was a marginal importer (1984-86), the price of Thai rice was 35% broken, adjusted for transport cost between Manila and Bangkok. During 1960-69, the border price of corn is the price of Thai corn f.o.b., Bangkok, adjusted for the transport cost (assumed to be 10 percent of price) between Manila and Bangkok; at this time the Philippines was a marginal importer of corn. Beginning in 1970, the border price of corn is the unit value of corn c.i.f. imports. The border price of copra is the unit value of export f.o.b. or, if there were no copra exports, the unit value of coconut oil exports f.o.b. in copra terms. The border price of sugar is the export unit value f.o.b. or the spot price set by the International Sugar Organization Agreement (ISA). For the 1960s the ISA spot price is adjusted by the average ratio of the Manila f.o.b. price to the New York c.i.f. price so as to take into account the transport cost from Manila to the sugar-importing countries. Although the ISA price is essentially a "dumping price", it provides an indication of the premium enjoyed by U.S. sugar quota holders during the 1960s.

Border prices for rice and corn were adjusted by the ratio of actual annual producer prices to wholesale prices. The border price for copra was adjusted by the average ratio of producer prices to wholesale prices during 1960-72, before the imposition of the production levy. For sugar, the millgate (producer) price was compared with the unadjusted border price; the direct comparison seems reasonable because much of the sugar export is coursed through Negros and Iloilo, not Manila. Because of the additional transportation and handling costs associated with exporting, border prices at the wholesale level used in the study are higher than what they should be. This overestimates the extent of negative protection, particularly for export crops. Because of data limitations these costs have not been included in the study. The conclusions drawn from the analysis are not expected to be materially affected by this omission.

#### Domestic and Border Prices

Figure 3.1a presents the producer, wholesale, retail and border prices of rice relative to the non-agricultural price index (Pna). Figure 3.1b presents the nominal producer, retail, and border prices of rice (in logarithm). Similarly, Figures 3.2a to 3.4b present the corresponding prices for corn, sugar, and coconut. The Pna was constructed from the national income accounts. It was estimated by dividing the value added of mining, manufacturing, utilities, construction, and services at current prices by the value added of the above sectors at constant prices.

#### Rice

Domestic rice prices are relatively stable compared to border prices (see Figures 3.1a and 3.1b). When the world price of rice was extremely high, as in 1973-74, the domestic retail price of rice was much lower than the border price even though rice was imported. Domestic rice prices also did not remain constant relative to non-agricultural prices.

Specifically, the domestic retail, wholesale, and producer prices of rice tended to rise relative to Pna during periods of domestic shortfalls and decline relative to Pna during periods of self sufficiency or marginal surplus. Shortfalls occurred in the early 1960s and 1970s and between 1984 to 1985. Self sufficiency was attained in the late 1960s and 1970s and early 1980s.

A regression analysis was run on the producer price of rice ( $PP_r$ ) with respect to the border price of rice, with and without a dummy for the years 1973-75. During this period the world price of rice was very high, domestic supply was constrained, and domestic price controls were implemented aggressively. The results of the regressions are presented in equations (1) and (2) below (t-values are shown in parenthesis).

$$(1) \quad \ln PP_r = -0.101 + 0.811 \ln BP_r - 0.420 \text{ Dummy}$$

r            (-1.71)                    (12.3)                    r            (-2.60)

$$\bar{R}^2 = 0.92 \quad F = 92.9 \quad 1961-1986$$

D.W. = 1.85                    CORC

$$(2) \quad \ln PP_r = 2.151 + 0.038 \ln BP_r$$

r            (0.83)                    (0.40)                    r

$$\bar{R}^2 = 0.96 \quad F = 311 \quad 1961-1986$$

D.W. = 1.92                    CORC

The first regression indicates that, excluding the years 1973-75, the elasticity of the domestic producer price with respect to the border price (in pesos) was 0.81. This suggests that movements in the border price were not fully reflected in the domestic producer prices even during more normal periods.

The second regression indicates that during unusual years as in 1973-75, domestic food prices tended to move independently of border prices.

During 1960-86 the peso-dollar rate increased at a compound rate of 8.9 percent per year, while the border price of rice in dollar terms rose at a compound rate of 2.4 percent per year. Equation (1) indicates that, excluding the years 1973-75, peso devaluations contributed nearly 74 percent of the increase in producer prices during this period. Increases in the world price of rice contributed only 20 percent.

Regressions also were run for specific subperiods, but these did not yield statistically significant relationships. This suggests that the domestic pricing policy for rice tended to stabilize in the short run even if in the long run domestic prices move with border prices.

### Corn

The border price of corn tended to follow closely the border price of rice (see Figures 3.2a and 3.2b). As with rice, the domestic price of corn relative to Pna tended to rise during the 1960s and early 1970s and decline during the late 1970s and early 1980s. The major difference between the two pricing regimes is that domestic corn prices were higher than their border prices, except in 1973-74. The differential pricing of corn reflects the protectionist policy of the Philippine government with respect to corn, an importable crop.

Regressions of the domestic producer price of corn with respect to the border price, with or without a dummy for 1973-75, are as follows (t-values in parenthesis):

### 1961-1986

$$(a) \quad \ln PP_{cn} = 0.010 + 0.899 \ln BP_{cn} - 0.254 \text{ dummy}$$

(0.22)            (22.3)            (-2.32)

$$\bar{R}^2 = 0.97 \quad F = 247$$
$$D.W. = 1.90 \quad \text{CORC}$$

$$(b) \quad \ln PP_{cn} = -0.029 + 0.878 \ln BP_{cn}$$

(-0.59)            (18.8)

$$\bar{R}^2 = 0.96 \quad F = 308$$
$$D.W. = 1.83 \quad CORC$$

1961-1969:

$$(c) \quad \ln PP_{cn} = -1.451 - 0.123 \ln BP_{cn}$$

(-4.81)            (-0.73)

$$\bar{R}^2 = 0.68 \quad F = 9.6$$
$$D.W. = 2.24 \quad CORC$$

1970-1986:

$$(d) \quad \ln PP_{cn} = -0.024 + 0.911 \ln BP_{cn}$$

(0.44)            (10.1)

$$\bar{R}^2 = 0.92 \quad F = 87$$
$$D.W. = 1.65 \quad CORC$$

Unlike rice prices, domestic corn prices closely followed border prices, even during years of peak world prices. However, the relationship between domestic and border prices is not statistically significant during the 1960s, perhaps because corn imports were marginal at this time. The relationship is statistically significant and relatively strong for the period of the 1970s and early 1980s.

Over the period, devaluations of the peso contributed 74 percent of the increase in the producer price of corn. Increases in the world price of corn contributed 25 percent. For the subperiod 1970-86, the devaluations and increases in world corn prices contributed 54 and 26 percent, respectively of the increase in producer prices. The peso devaluations and increases in world corn prices during the subperiod account for less change in producers prices because protectionism was on the rise at this time.

Sugar

Figures 3.3a and 3.3b compare the domestic and border prices of sugar. They indicate that domestic sugar prices tended to be more stable than border prices. The concern for price stabilization at the retail level is best shown during 1974-75, when the retail price of sugar was even lower than the producer price. This was because the price pegged for the domestic sugar quota was much lower than the price for the sugar export quota. The ISA price also was more volatile than the Philippine export unit value. This reflects the very low ISA price, the stabilizing impact of the U.S. sugar pricing and import policy during the 1960s, and the long-term export contracts the Philippines entered into during the early 1980s.

A regression analysis was run of the producer price with respect to the two alternative border prices. Again, the dummy variable for 1973-75 was not statistically significant. The regression yielded the following elasticities.

Elasticity of the Producer Price with Respect to Border  
Price if the Border Price is

<u>Subperiod</u>	<u>Export Unit Value</u>	<u>ISA</u>
1961-86	0.35	0.18
1961-69	0.80	n.s.
1970-86	0.32	0.19

n.s. = not statistically significant.

These elasticities were used along with the compound growth rates of the border price of sugar in dollar terms and the peso dollar rate to

estimate the effect of changes in the border price and exchange rate on producer prices. The results are presented below.

Contribution (in percent) to the Movement in Producer Price Assuming the Border Price is

Period	Export Unit Value		ISA	
	Border Price (\$)	Peso Depreciation	Border Price (\$)	Peso Depreciation
1960-86	14	27	5	14
1960-69	21	50	0	0
1970-86	27	35	7	21

The domestic producer prices for sugar were more insulated from movements in border prices than were the domestic producer prices for rice and corn over the period. Rice and corn generally are regarded as political commodities in the Philippines; therefore, one might expect their domestic prices to be more insulated from movements in world prices.

However, rice and corn weigh heavier than sugar in the budget of consumers. As a result, consumers may pressure for domestic rice and corn prices to follow world prices, especially when the world prices of the products decline relative to those of other products. In addition, the divergence between the border price and the domestic price of sugar was caused by explicit and implicit taxation that benefited the consumers and the government at the expense of the producers. However, recent experience in the Philippine sugar industry indicates that too much taxation can hurt an industry that is vulnerable to fluctuations in world prices.

The estimation of elasticities and analysis of producer price movements also shows that domestic prices were the most insulated during the 1970s and early 1980s; it also shows that the export unit value is a

better measure of the border price than the ISA price in determining the domestic producer price of sugar. Finally, as with rice and corn, the peso depreciation explains most of the increase in producer prices of sugar over the period.

### Coconut

Between 1960 and 1986, copra prices showed much more variation than did rice, corn and sugar prices. There were five major price cycles dating from 1969. The marked cyclicity of copra prices stems from the long gestation period before coconut trees bear nuts, the susceptibility of coconut trees to typhoons and drought which the Philippines experienced with more frequency and greater intensity during the 1970s and early 1980s, and the tendency of coconut trees to yield less the year after a good harvest. The large fluctuations in copra prices over the past two decades may have been instrumental in shifting the demand for coconut oil to palm oil and other competing vegetable oils. The history of fluctuations in copra prices has made price stabilization an important policy concern of the current Philippine government.

Unlike rice, corn and sugar farmers, coconut farmers did not benefit from price stabilization over the period. The producer price of copra was lower than the adjusted and unadjusted border price. The price stabilization scheme instituted for the coconut industry during the 1970s was meant for the consumers of coconut by-products; hence, the name Coconut Consumers Stabilization Fund.

Regression equations were run of the producer price of copra with respect to the border peso price. The dummy variable for 1973-75 was excluded because it turned out not to be statistically significant. The results of the regressions are given below; t-values are presented in parenthesis:

(1) 1961-86:

$$\ln \text{ PP}_{\text{cp}} = -0.36 + 0.89 \ln \text{ BP}_{\text{cp}}$$

(-11.4)                      (26.8)

$$\bar{R}^2 = 0.96 \quad F = 3.23$$

D.W. = 2.00                      Cochrane-Orcutt

(2) 1961-69:

$$\ln \text{ PP}_{\text{cp}} = -0.40 + 0.76 \ln \text{ BP}_{\text{cp}}$$

(-13.6)                      (15.7)

$$\bar{R}^2 = 0.92 \quad F = 49$$

D.W. = 2.04                      Cochrane - Orcutt

(3) 1970-86:

$$\ln \text{ PP}_{\text{cp}} = -0.44 + 0.96 \ln \text{ BP}_{\text{cp}}$$

(-5.9)                      (14.1)

$$\bar{R}^2 = 0.92 \quad F = 96$$

D.W. = 2.00                      Cochrane - Orcutt

The regressions indicate that domestic producer prices were very responsive to movements in the border peso price of copra. Furthermore, all of the increase in producer prices over the period is explained by the decline in the peso-dollar rate because the compound growth rate of the border price of copra in dollar terms is zero between 1960 and 1986.

Measures of Intervention

Three measures of intervention are examined here: the nominal rate of protection from direct price interventions (NPRD), the nominal rate of protection from direct and indirect price interventions in the short run (NPRST), and the nominal rate of protection from direct and indirect price interventions in the long run (NPRLT). The difference between the last two is that NPRLT considers the impact of the exchange rate adjustment on the price level in the non-agricultural sector while NPRST does not. All three measures were computed at the producer and retail levels.

- Let  $P_{ij}$  = domestic price of good  $i$  at the  $j$ th marketing chain (i.e., producer level or retail level)
- $BPO_{ij}$  = border price of good  $i$  in domestic currency at the official exchange rate adjusted to the  $j$ th marketing chain
- $Pna$  = non-agricultural price index
- $Pna^*$  = non-agricultural price index under a free trade regime and equilibrium exchange rate
- $Pna2$  = non-agricultural price index under a free trade exchange rate
- $E^*$  = free trade equilibrium exchange rate
- $Eo$  = official exchange rate
- $E2$  = free trade exchange rate

Then, the nominal rate of protection from direct price interventions at the  $j$ th marketing chain, i.e.,  $NPRD(j)$  where  $j$  is producer (P) or retail (R), is:

$$\begin{aligned}
 NPRD(j) &= \frac{\frac{P_{ij}}{Pna} - \frac{BPO_{ij}}{Pna}}{\frac{Eo}{Pna} - \frac{BPO_{ij}}{Pna}} \\
 &= \frac{P_{ij} - BPO_{ij}}{Eo - BPO_{ij}}
 \end{aligned}$$

The nominal rate of protection from direct and indirect price interventions in the short run at the  $j$ th marketing chain, i.e.,  $NPRST(j)$  where  $j$  is producer (P) or retail (R), is:

$$\text{NPRST}(j) = \frac{\frac{P_{ij}}{P_{na}} - \frac{BPO_{ij}}{P_{na}} \cdot \frac{E^*}{E_o}}{\frac{BPO_{ij}}{P_{na}} \cdot \frac{E^*}{E_o}}$$

$$\text{NPRST2}(j) = \frac{\frac{P_{ij}}{P_{na}} - \frac{BPO_{ij}}{P_{na}} \cdot \frac{E2}{E_o}}{\frac{BPO_{ij}}{P_{na}} \cdot \frac{E2}{E_o}}$$

The nominal rate of protection from direct and indirect price interventions in the long run at the  $j$ th marketing chain, i.e., NPRLT( $j$ ) where  $j$  is producer (P) or retail (R), is:

$$\text{NPRLT}(j) = \frac{\frac{P_{ij}}{P_{na}} - \frac{BPO_{ij}}{P_{na}^*} \cdot \frac{E^*}{E_o}}{\frac{BPO_{ij}}{P_{na}^*} \cdot \frac{E^*}{E_o}}$$

$$\text{NPRLT2}(j) = \frac{\frac{P_{ij}}{P_{na}} - \frac{BPO_{ij}}{P_{na}2} \cdot \frac{E2}{E_o}}{\frac{BPO_{ij}}{P_{na}2} \cdot \frac{E2}{E_o}}$$

The estimates of the nominal free trade exchange rate (E2), free trade equilibrium exchange rate (E\*), and the non-agricultural price index that would have been operative under free trade and a balanced payments position are given in Table 2.5 of Chapter 2.

Table 3.1 presents the estimates of NPRD, NPRST, NPRST2, NPRLT and NPRLT2 for rice, corn, sugar and coconut during 1960-86.

During the period 1960-86, the nominal rate of protection from direct price interventions (NPRD) for rice averaged 8 percent, 1 percent if the peak years 1961 and 1971 are excluded. However, the NPRD showed much

variation within this average; between 1960-67 it was 39 percent, between 1967-70 it was 5 percent, from 1971-72 it was 50 percent, from 1973-75 it was -36 percent, from 1976-81 it was -12 percent, and from 1982-86 it was 13 percent.

These changes reflect changes in the country's self sufficiency in rice production, position of importation or exportation, the government's tendency to stabilize domestic prices when border prices increase sharply, and the foreign exchange constraints and poor management of imports when domestic supplies are short. Specifically, rice tended to be protected when it was imported and less protected as self sufficiency or export surplus was obtained. Nonetheless, when border prices rose sharply either because of a sharp increase in world prices or because of a peso devaluation domestic rice prices were not allowed to rise as much as border prices. The increase was controlled through stricter price control, anti-hoarding, and quantity queuing measures.

Very high rates of positive protection occurred in 1961 and 1971, when the adjusted border price fell and the domestic price increased. In these years the country experienced problems in rice supply and the government did not use imports to depress domestic prices. In 1961, the government might have been maintaining the domestic producer price before the de facto devaluation of 1962. In 1971, it might have lacked the foreign exchange to purchase additional imports after the peso devaluation of 1970.

In contrast to rice production, corn production was protected throughout the period 1960-86. As corn import substitution became a policy concern in the 1970s, the nominal rate of protection from direct price interventions increased. The only instances of negative NPRD occurred in 1973 and 1974, when world corn prices peaked. However, the disprotection

to corn during these two years was much lower than the disprotection to rice, coconut and sugar.

The border price of corn relative to its non-agricultural price declined after 1974. Hence, the positive protection in corn took place because the producer price of corn relative to the non-agriculture price dropped more slowly than did the border price of corn relative to its non-agriculture price. This reflects the import substitution of yellow corn, the major foodgrain for the growing livestock industry which the government encouraged through positive protection. Before 1960 yellow corn constituted only a small share of Philippine corn production. White corn, used primarily for home consumption, dominated the market. Since the 1970s, yellow corn has been responsible for most of the growth in the Philippine corn industry.

Sugar was once the highest export-earning agricultural crop. However, with the collapse of the sugar export market, sugar export earnings plummeted during the 1980s. The "fall" of the Philippine sugar industry is probably best manifested by the recent (1988) tender to buy sugar submitted by the Philippine government in the London exchange. This tender was the result of higher than expected domestic demand and continued declines in domestic output due to the drop in the export commitment to the United States.

Changes took place in the international trading arrangements for Philippine sugar between 1960 and 1985. Until 1973, the Philippines exported sugar almost exclusively to the United States under the U.S. sugar quota system. When the quota system was terminated in 1973, the Philippines ventured into the open world sugar market selling at spot prices or through multiyear contracts.

During the 1960s the domestic sugar producer price was almost always higher than the world ISA price and always lower than the export unit value. The export unit value was higher than the ISA price because most of the Philippine sugar went to the United States, where domestic and imported sugar prices were higher than world (or ISA) prices. The producer price was lower than the export unit value because sugar producers were required to set aside a portion of their output for the domestic market, pegged at a price below the export price. This requirement was imposed in order to mitigate the adverse effects on domestic sugar consumers of an export price that was higher than the "world price of free sugar". That is, part of the U.S. sugar price premium over the ISA price went to Philippine sugar consumers instead of producers.

Between 1972 and 1981, sugar production on the whole was negatively protected, using both measures of the border price. NPRD averaged -18 percent based on the ISA price and -20 percent based on the export unit value. Only in 1978 and 1979 were domestic producer prices higher than border prices. This was because the liquidation price for domestic sugar was set higher than the export price and the proportion of domestic sugar was raised as well. The overall disprotection of sugar during this period reflects primarily the government's control of domestic sugar prices and taxation of sugar exports in the face of sharp increases in border sugar prices during 1974-75 and 1980-81. It also reflects the apparent mismanagement and poor planning of the government sugar monopoly which, in effect, increased the marketing margins for sugar during the 1970s.

After 1982 the NPRD for sugar based on the ISA price was positive. However, the NPRD based on the export unit value continued to be negative. The export unit value was higher than the ISA price for two reasons. The

Philippines was able to negotiate multi-year contracts at the turn of the 1980s at prices higher than the ISA price, and the U.S. sugar price was higher. Although the situation of the 1980s resembles that of the 1960s, there is an important difference. During the 1960s the problem was meeting the U.S. sugar quota; during the 1980s it was excess production and milling capacity in the face of declining exports.

Explicit and implicit taxation of copra was negligible during the 1960s; the value of NPRD averaged about -1.0 percent per year over the decade. However, the taxation of copra increased during the 1970s and early 1980s and served to reduce the ratio of producer to wholesale prices. Explicit taxation started in 1970 with the imposition of an export tax. In 1973, a levy was imposed on permit production to create the Coconut Consumers Stabilization Fund. The levy was continued at varied rates and terms until 1982. UNICOM was established in 1979 to monitor the intense competition for copra among domestic coconut oil mills. It appears to have exercised monopsony power during the early 1980s, reducing the value of NPRD from -14 percent in the 1970s to -27 percent in the early 1980s.

#### Impact of Peso Overvaluation on Agricultural Protection

Between 1960 and 1986 the Philippine peso was estimated to be about 22 percent higher than the actual official exchange rate, assuming conditions of free trade. Assuming free trade and a balanced current account, the peso would have been about 24 percent higher than the exchange rate. Both estimates probably are conservative since they do not include the restrictive trade effect of non-tariff barriers. This overvaluation of the peso was a dominant source of disprotection to agriculture over the period.

In the case of rice, for example, the NPRD averaged a positive 8 percent per year. However, taking into account the peso overvaluation, the

positive protection from direct price interventions turned into a negative protection of about -13 percent per year in the short run and about -17 percent per year in the long run. Similarly, the NPRD for corn was 39 percent per year before taking into account the peso overvaluation. This positive protection from direct price interventions is reduced to 12 percent in the short run and 6 percent in the long run when the peso overvaluation is considered. The disprotection to sugar increased from -18 percent to -37 percent with overvaluation. The disprotection to coconut increased from -12 percent to -33 percent.

Had the peso not been overvalued, the producer prices of rice, corn, sugar, and coconut would have been about 20 percent higher per year. Eliminating the peso overvaluation also would have helped to improve the agricultural terms of trade since the prices of the four crops declined relative to those of non-agricultural goods during the latter 1970s and early 1980s.

The industrial protection system was the major source of overvaluation of the peso during 1960-86. The current account imbalances did not become important as a source of overvaluation until the latter 1970s and early 1980s. This suggests that the industrial protection system will have to be made more open in order to reduce the disprotection to agriculture.

## Chapter 4

### Effects of Price Interventions on Output, Consumption and Foreign Exchange

The effects of government price interventions on output, consumption, and foreign exchange were estimated for the four agricultural crops--rice, corn, sugar, and coconut.

#### Method

##### Output Effect

The output effect by crop is the difference between actual output and the output that would have been produced without interventions. Both the short run and cumulative output effects from direct and total (i.e., direct and indirect) price interventions were estimated. The cumulative output effect assumes a Nerlove-type partial output adjustment process in response to price changes.

The general approach used in this paper in determining the output effect is as follows:

$$Q_i^A - Q_i^{NI} = Q_i^A - \frac{Q_i^A}{1 + \alpha^{NT}_i} = Q_i^A \frac{q_i^{NI}}{1 + q_i^{NI}}$$

where:

$Q_i^A$  = actual output of crop i

$Q_i^{NI}$  = output of crop i in the absence of interventions

$q_i^{NT}$  = proportionate output effect defined as the difference between the actual and non-intervention output as a ratio of the non-intervention output.

The proportionate output effect on crop i was estimated for the short run and cumulative effects of direct and total price interventions.

The proportionate output effect on crop i of direct price interventions was estimated as the sum of the product of the nominal protection rate from direct price interventions (NPRD) and the own-price elasticity of supply of crop i, as well as the cross-price elasticities of supply of crop i with respect to the prices of the other three crops. The short run proportionate output effect was estimated as follows:

$$q^{NISD}_{i,t} = \sum_j a_{ij}^{SD} NPRD_j$$

where:

$$a_{ij}^{SD} = \text{short run own- or cross-price elasticity of output of crop i with respect to the price of crop j.}$$

The proportionate cumulative direct output effect was estimated as follows:

$$q_{i,t}^{NICD} = \sum_j a_{ij}^{SD} NPRD_{j,t} + (1-\theta) q_{i,t-1}^{NICD}$$

where

$$\theta = \text{elasticity of adjustment, estimated from lagged hectare or output response functions given below.}$$

The short-term proportionate output effect on crop i of direct and indirect price interventions was estimated as the product of the nominal protection rate from direct price interventions and the deviation of the official exchange rate from the equilibrium exchange rate (NPRST) summed with the own-price and cross-price elasticities of supply of crop i with respect to its own price and the prices of each of the other three crops, i.e.,

$$q_i^{NIST} = \sum_j a_{ij}^{SD} NPRST_j$$

where

$$NPRST_j = \frac{\frac{P_j}{P_{na}} \cdot \frac{BP_o}{BP_{na}} \cdot \frac{E^*}{E^o}}{\frac{BP_o}{P_{na}} \cdot \frac{E^*}{E^o}}$$

The proportionate cumulative total output effect was estimated using the rate of protection from both direct and indirect price interventions (NPRLT), as follows:

$$q_{i,t}^{NICT} = \sum_j a_{ij}^{SD} NPRLT_{j,t} + (1-\theta) q_{i,t-1}^{NICT}$$

where

NPRLT<sub>j</sub> = NPRST<sub>j</sub> adjusted by the estimated effects of eliminating the industrial protection system and instituting a free trade equilibrium exchange rate on the non-agricultural price index

$$= \frac{\frac{P_j}{P_{na}} \cdot \frac{BP_o}{P_{na}^*} \cdot \frac{E^*}{E^o}}{\frac{BP_o}{P_{na}^*} \cdot \frac{E^*}{E^o}}$$

### Rice and Corn

In estimating the output effects for rice and corn, the estimates of the own-price elasticities of supply were based on the following hectare response regressions: (t-values in parenthesis):

Rice hectare response regression:

$$\ln A_{pal} = 4.408 + 0.171 \ln \frac{P_{pal}}{P_{na,t-1}} - 0.017 \ln \frac{P_{corn}}{P_{na,t-1}}$$

(2.75) (2.38) (-0.45)



coefficients for the cross-price elasticities were not statistically significant. However, it seems appropriate to expect some intercrop substitution of land use due to relative price changes.

The following (supply price elasticity matrix) for rice and corn was used in the study.

	<u>Price</u> PNA	<u>Pcorn</u> PNA	<u>Psugar</u> PNS	<u>Pcopra</u> PNA
<u>Long Run</u>				
Qrice	0.30	-0.04	-0.01	-0.01
Qcorn	-0.05	0.34	-0.01	0.04
<u>Short Run</u>				
Qrice	0.17	-0.02	-0.01	0.00
Qcorn	-0.02	0.17	0.00	0.02

### Sugar

For the short run direct and total output effects, the estimate of the own-price elasticity of sugar output used is based on the following regression (t-values in parenthesis):

$$\ln Q_{sq} = 6.358 + 0.326 \ln \frac{P_{sq}}{P_{na}} + 0.563 \ln CAP_{t-1}$$

(3.82)            (3.18)                            (4.98)

$$\bar{R}^2 = 0.95 \quad \text{Rho} = 0.69$$

$$\text{D.W.} = 1.35 \quad \text{F} = 125$$

Sample Period: 1962-1982

where CAP = milling capacity.

Regression estimates of sugar supply and sugar hectarage showed that the effects of the prices of the other three crops on sugar output were not statistically significant. Nonetheless, it seems realistic to assume that sugar competes with the other three crops for agricultural land



where

$NPR^{SR}$  = is either NPR short run direct or NPR short run total for  $j$  = rice, corn, coconut, sugar

$Q_t^{SG}$  = actual sugar output

$CAP_t$  = actual milling capacity

Cumulative:

$$\Delta \ln Q_t^{SG,C} = \sum e_{js} NPR_{j,t-1}^C + 0.563 \Delta \ln CAP_{t-1}$$

such that

$$Q_t^{SG} \left[ 1 - \frac{\Delta \ln Q_i^{SG,C}}{1 + \Delta \ln Q_t^{SG,C}} \right] < CAP \left[ \frac{\Delta \ln CAP_t}{1 + \Delta \ln CAP_t} \right]$$

where

$$\Delta \ln CAP_t = 0.106 NPR_{SG,t-1}^C + 0.941 \Delta \ln CAP_{t-1}$$

$NPR_{j,t-1}^C$  = is either NPR cumulative direct or NPR cumulative total

The value of 0.563 in the cumulative direct output effect equation above is based on the sugar supply regression presented earlier.

Coconut

Coconut is a long gestating crop with a very long life span. Reasonably good yields can be expected for up to 50 years; after that yields continue for one or two decades, but at declining rates.

In the short run, the direct and total output effects are determined by the effects on coconut yield alone, given the actual hectarage. However, regressions of coconut yield were unsatisfactory with respect to the previous year's copra price relative to the non-agriculture price, the prices of fertilizer and labor relative to the non-agriculture

price, and rainfall. Thus, in the study, it is assumed that agricultural pricing policy has no effect on copra output in the short run.

However, pricing policy does have cumulative direct and total output effects on coconut. The cumulative output effect is the cumulative effect on the number of trees adjusted by the actual yield per tree.

There are many varieties of coconut and each has a different gestation period. However, most experts agree that the normal gestation period lasts from about 5 to 10 years. Therefore, an arbitrary value of 7 years was used in the paper, based on the gestation period of the recommended "Laguna" and "San Ramon" varieties. In addition, because data on the yield profile of coconuts under normal cultural conditions were not available, an average of actual yields was used.

Specifically, the cumulative output effect for time  $t$  is equal to the actual average yield per bearing tree in time  $t$  multiplied by the sum total of "number of trees" from 1960 (the start of the period under study) until  $t-7$ . That is,

$$Q_i^{CP} = Y_t^{CP} (\Delta N_{1960} + \Delta N_{1961} + \dots + \Delta N_{t-7})$$

where

$$\Delta N_t = N_t \frac{\Delta \ln N_t}{1 + \Delta \ln N_t}$$

$$\Delta \ln N = 0.124 \text{ NPR}^{\text{Copra}} - 0.16 \text{ NPR}^{\text{Rice}}$$

$N_t$  = number of bearing trees at time  $t$

$\text{NPR}_j$  = either NPR direct or NPR total

$Y_t^{CP}$  = actual yield of copra per bearing tree at time  $t$

The own-price elasticity and cross-price elasticity of the number of nut bearing coconut trees with respect to rice were taken from Dumayas

(1983). Dumayas' equation of the number of nut bearing coconut trees does not include the cross price effect of corn and sugar; hence, cross price elasticities with respect to corn and sugarcane were not included in the above equation.

Consumption and Foreign Exchange Effects

The estimation of the consumption effect is similar to that of the output effect. The consumption effect is the difference between actual consumption and the level of consumption in the absence of interventions; i.e.,

$$C_i^A - C_i^{NI} = C_i^A \frac{c_i^*}{1 + c_i^*}$$

where

$C_i^A$  = actual consumption of good i

$C_i^{NI}$  = consumption of good i in the absence of interventions

$c_i^*$  = proportionate consumption effect, defined as the product of NPRD at the retail level and the own- and cross-price elasticities of demand for good i with respect to the price of good i and the prices of each of the other three goods, summed with the product of the income elasticity of consumption and the change in national income due to the direct (and indirect) price interventions, taken from Chapter 7.

$$= \sum \epsilon_{ij} \text{NPRD}_j (\text{retail}) + \eta_i \frac{\Delta Y}{Y}$$

The matrix of price and income elasticities of demand used in computing the consumption effects is as follows:

	Price	Pcorn	Psugar	Pcoconut	Income
Qrice	-0.3384	-0.0772	-0.0555	0.0423	0.10
Qcorn	0.5077	-0.0845	-0.1876	-0.2991	0.06
Qsugar	0.0402	-0.0006	-0.3819	-0.0695	0.25
Qoil	0.0421	-0.0059	0.1189	-2.0686	0.40

The above matrix is based on Quisumbing's (1987) price elasticities matrix, Bouis' (1984) estimates of the income elasticities of rice and corn for human consumption (-0.4), and CPDS' (1982) estimates of income elasticities of corn for feeds (0.54), coconut, and sugar. The income elasticity of the demand for corn is a weighted average of the food and feeds elasticities; the weights are the respective average shares of food or feed use to total supply during 1969-84.

To compute the effect of government interventions on the foreign exchange earnings of imports and exports, the change in the volume of imports or exports of each crop was multiplied by the respective exogenously given border price. The total effect on net export earnings is the change in export receipts minus the change in import payments for imports of the relevant agricultural crop, as a ratio of actual total export earnings.

For sugar, copra and rice (during the 1978-83), the change in the volume of exports is given by:

$$X_i = (Q_i^A - Q_i^{NI}) - (C_i^A - C_i^{NI})$$

For corn and rice (during 1960-77; 1984-86) the change in the volume of imports is given by:

$$M_j = (C_j^A - C_j^{NI}) - (Q_j^A - Q_j^{NI})$$

Thus, it is expected that an export tax would result in  $Q_i^A < Q_i^{NI}$  and  $C_i^A > C_i^{NI}$ , hence  $X_i < 0$ ; i.e., there is export loss. Similarly, it is expected that an import tariff results in  $Q_j^A > Q_j^{NI}$  and  $C_j^A < C_j^{NI}$ ; hence  $M_j < 0$ , i.e., there is import saving.

### Results

Two sets of calculations were run for each of the following categories: short run direct effects, short run total effects, cumulative direct effects, cumulative total output effects, consumption effects, and foreign exchange effects. The first set assumes that the unit value of exports is the relevant border price for Philippine sugar; the results are presented below. The second set assumes that the average ISA price, adjusted for transport costs between Manila and New York during the 1960s, is the relevant sugar border price. The results of this calculation are presented in the Appendix.

The annual rates of protection at the producer or retail level resulting from direct and total price interventions were used in estimating the output and consumption effects. The use of annual rates assumes that farmers and consumers consider annual price changes permanent and change their supply and demand responses accordingly. However, this assumption may not be wholly realistic since farmers and consumers may regard some price shocks to be temporary. To the extent that this occurs, the study will overestimate the true value of the output and consumption effects. Nonetheless, it seems reasonable to expect that the average output and consumption effects over a number of years probably approximate the true extent of the average supply and demand responses.

The estimates of the short run and cumulative direct and total output effects are given in Table 4.1 and Figures 4.1 through 4.4.

The short run effect of direct price interventions on rice output averaged about 0.3 percent of the non-intervention output each year between 1961 and 1986.<sup>2</sup> That is, the actual rice output was 0.3 percent per year higher than the output level that would have occurred had there been no direct interventions in the prices of rice, corn, sugar and copra. In the 1961-73 subperiod, the output effects of price interventions were largely positive, averaging 3.3 percent per year. In 1974-82, output effects were negative, averaging -3.9 percent per year. In 1983-86, output effects were a positive 1.4 percent per year.

The cumulative effect of direct price interventions on rice output shifted over the period, from zero in 1971 to 4 percent in 1986. The cumulative effect of the direct price interventions, current account imbalance, and industrial protection system together is a 3 percent decline in rice output over the non-intervention output level.

The combined short run and cumulative effects of direct price interventions do not appear to have affected rice output during the period

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<sup>2/</sup> The 0.3 percent average includes the unusually high output rates for 1962 (15 percent) and 1972 (12 percent). These resulted from the high NPRD for rice in 1961 and 1971. Since these two years were characterized by production setbacks and macroeconomic constraints, farmers might have viewed a large part of the price increases as temporary. Assuming that farmers could have discounted away 50 percent of the price increases, then the output effect would have been halved. If so, the average output effect from direct price interventions during 1960-86 would be a marginal -0.1 percent per year.

1961-86. The net disincentive to rice production came mainly from the peso overvaluation and the current account imbalance.

The short run effect of direct price interventions on corn output was to raise actual output by an average 4.7 percent a year over the non-intervention output between 1968 and 1986. The increase in corn output reflects the institution of yellow corn as an import substitute for the domestic livestock industry. However, when total price interventions are taken into consideration, the positive effect on corn output is reduced to 0.3 percent per year. The cumulative effect of direct price interventions on corn output during 1960-86 is 12 percent of the non-intervention output level. The cumulative output effect of both direct price interventions and the overvaluation of the Philippine peso is about 4 percent of the non-intervention output level of corn.

Sugar and coconut, as export crops, were expressly taxed in the 1970s for revenue purposes and to encourage processing, stabilize domestic prices, and collect monopsony rents. Not surprisingly, negative output effects on these two crops were higher than those on rice and corn. Figures 4.3 and 4.4 show that the output effects were negative during most of the period. The short run effect of direct price interventions on sugar output during 1961-86 averaged -3.2 percent per year, using the export unit value as the border price. The short run effect of total price interventions on sugar output during the same period averaged -5.7 percent per year. The cumulative effects of the direct and total price interventions on sugar output are -11 percent and -15 percent respectively, of the 1986 non-intervention output level. As indicated earlier, there are assumed to be no short run effects on coconut output. However, the cumulative direct and total effects on coconut output are -20 percent and -9 percent, respectively, of the non-intervention output level of coconut.

Using the ISA price as the border price, the cumulative effect of direct price interventions on sugar output was zero in 1981. This reflects the near balancing of the positive output effects of the 1960s and the negative output effects of the 1970s. The cumulative output effect of total price interventions was -21 percent in 1981. By 1986, however, the cumulative output effects of direct and total price interventions have increased dramatically--to 41 and 25 percent, respectively, of the 1986 non-intervention output level. The increase reflects the positive impact of the high rates of protection in recent years.

As stated earlier, the export unit value is the relevant border price for sugar during 1960-84, and the ISA price is the relevant border price during 1985 and 1986. During those two years the Philippine sugar industry deliberately chose to cut back production instead of exporting at the unprofitable ISA price. It targeted production to meet domestic consumption and the small but lucrative U.S. sugar quota. Using the ISA price for 1985 and 1986 increases the short run output effect of direct price interventions from -11 percent to 41 percent in 1986. Using the ISA price also increases the average short run output effect of direct and total price interventions during 1961-86. Direct price interventions cause output to increase from -3.2 to -1.2 percent. Total price interventions cause output to increase from -5.7 percent to -4.1 percent.

The estimates of the consumption effects are presented in Table 4.2. The short run effect of direct price interventions on consumption during 1963-84 averaged about -3.0 percent per year for rice, 5.8 percent per year for corn, 10.5 percent per year for sugar, and 2.8 percent per year for copra. The short run consumption effect of total price interventions during 1963-84 averaged about 5.8 percent per year for rice, 6.0 percent per year for corn, 16.0 percent per year for sugar, and 41 percent per year for copra.

The effects of intervention on consumption generally are the opposite of those on output. The implicit protection to rice during the 1960s reduced domestic consumption compared with the consumption levels that would have prevailed without direct price interventions. On the other hand, the implicit taxation of coconut, sugar, and rice during the 1970s made actual consumption greater than the non-intervention levels. The result for corn is different because the cross-price demand and inter-commodity substitution effects are sharper than the own-price effect. Indirect interventions (i.e., the peso overvaluation) further depressed the prices of the four crops during the period. Because the domestic prices were depressed relative to border prices at the free trade equilibrium exchange rate, domestic consumption was higher than it would have been if there were no direct or indirect price interventions.

Changes in output and consumption caused by direct and indirect price interventions have an effect on the volume of imports and exports and therefore on net foreign exchange. Table 4.3 and Figures 4.6a and 4.6b present estimates of the foreign exchange effects. The direct and indirect price interventions reduced the net foreign exchange earnings from the four commodities in every year but 1961. The short run effect of direct price interventions resulted in an average loss of about 1.7 percent per year of actual export earnings during 1962-84. The short run effect of direct and indirect price interventions averaged about -8.3 percent during the same period. By 1984, the cumulative effect of direct price interventions was about -8.4 percent of 1984 export earnings. The cumulative effect of direct price interventions and the peso overvaluation from 1961 was -12.7 percent of export earnings in 1984.

Comparing estimates of the foreign exchange effects based on the export unit value of sugar to those based on the ISA price of sugar reveals

two trends. One is the substantial positive impact of the U.S. sugar quota on the net foreign exchange earnings during the 1960s and the mid-1980s. The other is the positive impact of export contracts during the early 1980s. Based on the ISA price, the average short run foreign exchange effects of direct price interventions during 1962-84 averaged 4.3 percent per annum; the effects of total price interventions were -5.0 percent. Including 1961, by 1984 the cumulative effects of direct price intervention were -3.7 percent of 1984 export earnings. The cumulative effects of total price interventions were -9.3 percent of 1984 export earnings.

While the U.S. sugar quota probably should not be considered part of the Philippine government's direct price interventions, it can be viewed as a form of U.S. resource transfer to the Philippines. The beneficiaries of this resource transfer, however, were the Philippine sugar planters and millers. The quota partly explains why sugar planters and millers are much better off than rice, corn and coconut farmers. In fact, much of the political and social power of the sugar bloc in the Philippines before the 1960s probably came from the implicit subsidy provided by the U.S. government.

#### Effect of Price Interventions on Intersectoral Factor Flows

When government interventions are pervasive and the agricultural sector is a large component of the economy, a commodity-by-commodity analysis may be misleading because it does not fully take into account resource constraints such as labor and land. The estimates presented in Table 4.1, for example, assume that wages remain constant despite the increase in output that is expected to occur if the government shifts to a free-trade, non-intervention regime. When the increase in output is large and the sector is important, wages may increase and reduce some of the effect on output. The wage rate regressions in Chapter 7 indicate that

most of the increase in output would be absorbed by the unemployed and underemployed. Therefore the overriding constraint appears to be land, not labor. Policy reforms favoring agriculture would substantially increase the demand for land, raising land values and rent, and hastening intercrop substitution. That is, the cross-price elasticities of output used in the study are low in the long run.

This section focuses on the effect of government interventions on intersectoral resource flows. Specifically, it looks at the migration of labor from the agricultural sector to the non-agricultural sector and the rate of domestic capital formation in agriculture.

Between 1960 and 1983, the agricultural-non-agricultural terms of trade improved; after then they deteriorated almost continuously until 1983. David (1983) ran a regression of the internal terms of trade with the ratio of the world agricultural prices to the world non-agricultural prices, and with the peso-dollar rate. The former, the world commodity price ratio, turned out to be statistically insignificant; the exchange rate was statistically significant. These findings suggest that the internal terms of trade are influenced by government price interventions, especially the exchange rate. Similarly, the estimates in Chapter 3 indicate that government price interventions have a significant bearing on the terms of trade between the agriculture and non-agricultural sectors.

The percentage of the labor force represented by agricultural workers declined from around 55 percent in 1962 to about 50 percent in 1983. This reduction implies that about 1.2 million agricultural laborers "migrated" from the agriculture sector to the non-agriculture sector.

Given the policy bias against agriculture during the past two decades, the rate of labor migration out of agriculture seems to be rather slow. There are two probable reasons for this.

One reason involves the pattern of labor migration out of agriculture. This pattern can take the form of transfer of location from an agricultural to an urban, metropolitan area, or it can mean a shift in employment within one area. Studies of inter-regional migration in the Philippines during the past two decades (Flieger, 1977; Pernia, et al., 1983; Perez, 1985) reveal two important migration streams: a movement toward the Manila-Southern Tagalog corridor (the predominant one), and a movement toward the more frontier regions of Mindanao. The first migration stream is away from agriculture; the second stream is primarily within or into agriculture. Thus, one response to the policy disincentives against agriculture could be a locational shift from a marginal agricultural area (e.g., Eastern Visayas) to an (intramarginal) agricultural area (e.g., Southern Mindanao).

Another reason for the slow migration of labor out of agriculture may relate to the high concentration of manufacturing activities in and around Metropolitan Manila. Because the islands of the Philippines can widely dispersed, a shift in employment normally requires an expensive transfer to the Manila environs. In addition, the industrial protection system has tended to favor capital-intensive techniques and industries. This practice has inhibited the rate of labor absorption. As a result, increases in the labor force have been accommodated primarily in the services and agricultural sectors and, since the mid-1970s, in the foreign labor market. Thus, agriculture remains a labor reserve sector, with a substantial segment of the agricultural labor force not fully employed.

#### Capital Formation in Agriculture

Pricing disincentives in agriculture reduce the returns from investments in agriculture. Other things being equal, therefore, pricing disincentives should reduce private investment in agriculture relative to

other sectors. Public investment in agriculture may or may not increase depending on whether the government attempts to compensate for the pricing disincentives against agriculture.

The rate of gross capital formation in agriculture between 1955 and 1983 was estimated and the results are presented in Table 4.4. The rate of capital formation in agriculture appears to have been adversely affected by agricultural pricing disincentives.<sup>3</sup>

Notes

1. Gross investment in agricultural machineries and tractors at constant 1972 prices is the gross investment in these products at current prices, deflated by the implicit price index for durable equipment. Source of Data: National Accounts Staff, NEDA: National Income Accounts, 1946-1975 (Link Series).

2. Investment in livestock and poultry is the value of the change in inventory (or stock) of carabao, cattle, hogs, and chicken. The 1972 prices per unit used in computing the stock value of livestock and poultry are: carabao - P777.76 per head; cattle - P668.03; hogs - P215.50; and chicken - P4.68. The unit prices were taken from the 1974 values of the BAEcon, Ministry of Agriculture, "Survey of Capital Formation in Agriculture in the Philippines, Crop Years 1974-75" (April, 1978). The 1974 prices were deflated to this 1972 constant price using the implicit price index for the gross value added from livestock and poultry in the National Income Accounts. Data on the number of inventory of carabao,

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3/ Research and extension services are not included in this computation of public investment in agriculture, in keeping with the physical definition of capital used in this section. Also, note that investment in agro-processing and post-harvest facilities is not considered.

cattle, hogs and chicken are given in Crops and Livestock Statistics of the Bureau of Agricultural Economics; the 1969-79 figures are from IAPMP, Ministry of Agriculture (1981).

3. Gross capital formation in grains is the change in the value (at 1972 prices) of the inventory of rice and corn. The quantities and the 1972 prices of rice and corn stocks were taken from Mears (1974), M.A.F. Policy Analysis Staff and BAEcon records.

4. Gross investment in perennials is the change in the value (in 1972 prices) of the stock of trees of various perennial crops, especially coconut, coffee, bananas, cacao, abaca, mango, lanzones, jackfruit, papaya, and calamansi. The value in 1972 prices of the stock of trees of coconut, coffee, cacao, and bananas was computed by multiplying the number of trees by the 1972 prices of the tree, for each of the four crops. Data on the number of trees were taken from the data files of Cristina David (using BAEcon data), the price per tree was derived from the 1973 data on perennial crops in the BAEcon "Survey on Capital Formation in Agriculture in the Philippines, Crop Years 1974 and 1975" (April 1978). The value of the stock of abaca was computed from adjusting the 1974 value of stock of abaca at 1972 prices by yearly changes in the area of abaca production. The 1973 value in 1972 prices of the stock of "other perennials" was adjusted by a weighted index of the trees of mango, lanzones, jackfruit, papaya and calamansi. The 1973 value of stock of abaca and "other perennials" came from the BAEcon 1978 Survey of Capital Formation in the Philippines. The number of trees were taken from C. David's data files.

5. Irrigation investment in 1972 prices is irrigation investment at constant prices deflated by the implicit price index for government construction in the National Income Accounts.

## Chapter 5

### The Impact on Government Budget and Bureaucracy

The government's agricultural policy is closely interconnected with its budget policy: to a large extent, taxation and expenditure allocations define and delimit the government's agricultural policy. The government budget constraint ties the government's agricultural policy to its policies vis-a-vis the rest of the economy.

Government taxation and expenditures in agriculture cover intrasectoral, intersectoral and (intertemporal) considerations. Much of the policy discussions and research in agriculture policy focus on the latter two. Intrasectoral issues relate to relative pricing and policy biases among the various agricultural subsectors or commodities. For example, should export crops be taxed in order to subsidize food production? Intersectoral issues relate to the agricultural-non-agricultural terms of trade and transfer of resources. The terms of trade pertains to the relative price of agricultural goods vis-a-vis non-agricultural goods and the price of agricultural inputs relative to the price of non-agricultural inputs into agriculture. The government's position on using the agricultural sector as a net provider of resources to the non-agricultural sector lies at the heart of its development strategy.

The intertemporal issue determines the form of government intervention in agriculture, particularly, the choice between price and non-price interventions. Thus, for example, should current agricultural output be taxed in order to pay for public investments and services in the agricultural sector? The issue of intertemporal tradeoffs is relatively more complex for agriculture than for industry because many agricultural investments (e.g., irrigation, research) generate externalities and/or

"public good" benefits. The existence of these benefits makes the government the most feasible provider of the investment goods. The dilemma centers on the conflict between the need to tax in order to finance the investments and the adverse effects of taxation on incentives and agricultural production.

The government budget constraint forces the government to make tradeoffs among intrasectoral, intersectoral, and intertemporal issues in making its taxation and expenditure decisions. These decisions are further tempered by administrative feasibility and efficacy considerations.

#### Budgetary Effects of Agricultural Pricing Policy

Agricultural pricing policy is undertaken primarily through the imposition of taxes on, or the granting of subsidies to, agricultural outputs and inputs. Thus, agricultural pricing policy almost invariably results in an increase or decrease in government revenue or expenditure.

#### Revenue Effects

The revenue effects of Philippine agricultural pricing policy during the 1960s and 1970s came about primarily through explicit export taxes, tariffs on imported food and agricultural inputs, and a special levy on marketed copra output. The implicit taxation of export crops, as indicated by the operating profits of parastatal marketing corporations, was negligible because the parastatal bodies had incurred mostly losses. (However, farmers may have been taxed more than they would have been with a more efficient marketing system.)

#### Export Taxes

Explicit taxation of exports began in the Philippines in 1970. Initially, it was adopted as a temporary stabilization measure to counterbalance the peso devaluation in that year. However, because of its substantial revenue yield, export taxation became a more permanent feature

of the Philippine tax system. In 1973, the export tax schedule was formally included in the Tariff and Customs Code.<sup>1</sup>

The export taxes were levied almost exclusively on agricultural, mineral, and forestry products. In addition to the revenue goal, taxes were structured in order to promote more highly processed exports. For agricultural goods, this meant a higher export tax rate for copra and centrifugal sugar exports (10 percent ad valorem initially, and 6 percent from 1973 through the rest of the decade) than for molasses, coconut oil, copra meal or cake, and desiccated coconut (8 percent initially, and 4 percent from 1973 and thereafter). Canned pineapple, abaca, tobacco and bananas were also levied the lower rate for "processed agricultural products".

In February 1974, a premium duty was levied on top of the export tax, creating the stabilization tax. The premium duty was levied on the excess of the f.o.b. unit value at the time of shipment over an administratively set base price, initially set at 80 percent of the f.o.b. price. The premium duty has been imposed on copra, centrifugal sugar, molasses, desiccated coconut, copra meal or cake, and coconut oil. The premium duty was 30 percent on copra and 20 percent on the other products.

Table 5.1 presents the total amount of collectibles and actual collections of export taxes and premium duties during 1970-83. No data are available on the actual collections by commodity before mid-1979; what is

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<sup>1/</sup> The export crop sector was implicitly taxed by the 20% retention scheme during 1962-65. Under this scheme exporters had to surrender 20% of their export receipts at the official exchange rate instead of the higher free market peso-dollar rate. However, the "tax revenue" went to the Central Bank, not to the Treasury.

presented in Table 5.1 are the export tax and premium collectibles by commodity as computed by the Bureau of Customs. As expected, sugar and coconut products are the major sources of export tax revenue among agricultural exports. Sugar products were subject to a higher average unit ad valorem export tax and premium duty rate than coconut products. However, copra producers also had to pay the Coconut Consumer Stabilization Fund levy on top of the export tax and premium duty. Clarete and Roumasset (1983, p. 15) estimate that the "effective taxation" of copra exports (export tax, premium duty, CCSF levy) averaged about 26 percent during 1974-81. Thus, coconut producers have been taxed more heavily than sugar producers.

#### Import Taxes

Import tariffs on agricultural goods were applied to imported food and agricultural inputs. The key imported agricultural inputs are fertilizer, agricultural machinery, pesticides, and feeds (i.e., yellow corn and soybean meal). Other imported inputs and foods include raw cotton, wheat grains and flour, rice and rice flour, and corn products.

Imported goods are levied taxes and charges in addition to the import tariff. These additional taxes include a tax on certain imported and locally produced articles for domestic consumption, a compensating tax on importers for their own use of imported goods, an advance sales tax, and other fees and dues collected by the Bureau of Customs: wharfage dues, arrastre charges, and tonnage dues.

Table 5.2 summarizes the expected tariff and taxes due (i.e., collectibles) from commodity imports. The collectibles are computed by the Bureau of Customs based on the imposed tariff and tax rates. The table also presents the ratio of tariff due to the value of imports by commodity. Corn grain imports received the highest tariff and tax rates among the

major imports of agricultural products and inputs. The statutory tax rate for corn grain imports averaged 33 percent during 1968-73 and 86 percent during 1974-82. Wheat and muslin imports had the lowest statutory rate, averaging 12 percent during 1968-73, and 18 percent during 1974-82.

Although there are no time series data on the collections of tariffs and taxes on commodities, actual collections can be expected to be much lower than collectibles during the 1970s. The key reason for this is the emergence of the tax-exempt National Food Authority (NFA), which became the principal importer of wheat, corn and soybean meal. NFA and its predecessors had monopoly control of international trade in corn from the 1960s. In 1975, NFA became the sole importer of wheat, providing duty free wheat grain to domestic flour millers so that they could produce wheat flour within the government-mandated price ceiling. In 1978 another presidential decree gave the agency the exclusive right to import soybean. Because the National Food Authority could import corn duty free, the domestic price of corn was only 25 percent higher than the border price during 1974-82 despite the statutory tax rate of about 86 percent during that period.

#### The CCSF Levy

On top of the export tax on coconut, in 1973 the government imposed a special levy on copra production called the Coconut Consumer Stabilization Fund (CCSF) levy. The CCSF initially was imposed when coconut prices shot up in order to generate funds to subsidize domestic producers of coconut-based consumer products (especially cooking oil). These producers were squeezed by rising input costs and government-imposed price ceilings on their products. The CCSF levy was akin to a specific tax. It was initially set at P150 per metric ton of copra, but this rate changed several times through the 1970s, reaching as high as P1,000 per metric ton during the latter part of 1974.

The CCSF levy was meant to be terminated after the passing of the "cooking oil crisis". However, just as with export taxation, the levy was continued with wider uses. It was used to finance payment of the premium duty on coconut exports, coconut replanting, and the investments of the Philippine Coconut Authority in (primarily) the United Coconut Planters Bank. The latter became the conduit through which major coconut oil mills were purchased, allegedly on behalf of coconut farmers. The CCSF levy became one of the most controversial taxes, mainly because of the way the funds were distributed.

Official data on the yearly collections of the CCSF levy are not available. However, audited collections from 1973 until 1982 amount to P9,695 billion (NEDA, 1985, Table 4.11). In comparison, actual collections of export taxes and premium duties during 1970-82 amounted to only P8,123 billion.

#### Expenditure Effects

Subsidies on output, consumption and inputs represent the expenditure aspects of agricultural pricing policy in the Philippines during 1960-83. Output subsidies were applied to rice. Consumption subsidies were applied to coconut-based consumer products and rice. Input subsidies were applied to fertilizer, credit, and irrigation. Table 5.3 summarizes estimates of these subsidies during the 1970s.

Fertilizer and irrigation subsidies provide two contrasting examples of the impact of subsidies on farmers. The government became involved in fertilizer pricing and marketing during the 1970s when international prices of fertilizer rose and domestic rice output was low. In order to increase output, the government implemented a crash rice production program called "Masagana-99". This program relied on a new rice technology which required irrigation and greater use of fertilizer. The

fertilizer subsidy took the form of foregone input levies on fertilizer imports and a cash payment to domestic fertilizer producers and importers equal to the difference between the world price and the government-mandated domestic price. Despite the subsidy domestic fertilizer prices were higher than border prices between 1974 and 1982 (see Appendix Table A3.4), although the average rate of nominal protection is lower than what is implied by the statutory rate.

Irrigation is the most important production subsidy the government provides to rice farmers. The irrigation subsidy in Table 5.3 is computed as the difference between government expenditures on capital, maintenance, and operations for irrigation and the amount of fees collected for irrigation. This method of computing the irrigation subsidy may overestimate the amount of subsidy to farmers during the period because it assumes that future irrigation fees will only be able to cover maintenance and operations expenditures on the irrigation systems. Irrigation fee collections probably will not pay for the capital cost of future irrigation systems, for several reasons. Current fee collections have not been sufficient to cover all operation and maintenance costs. In 1983, for example, they only covered 80 percent of operation and maintenance costs (Cruz, et al., 1985). Sison (1985) estimates that the per hectare subsidy for the national irrigation systems in 1982 amounted to 77 percent of the total annualized cost, even assuming a 100 percent collection rate for irrigation fees. In fact, collections averaged only 14 percent of current and back charges during 1975-83 (Sison, 1985, Table 6).

The consumption subsidy on coconut products applies primarily to cooking oil but also covers laundry bar soap and copra meal. All of the subsidy did not go to the agricultural sector, although it was funded by the copra producers through the CCSF levy.

The government subsidy on rice contains both consumption and output components. The output component, given in Table 5.3, was estimated by multiplying the volume of palay procured by the National Food Authority (or its predecessors) by the difference between the purchase price of NFA and the average producer price. The subsidy presumably accrued to the rice farmers who sold their output to NFA, although the extent of the subsidy actually received may have been less than what is indicated in Table 5.3 because farmers dealing with NFA incur higher transactions costs.<sup>2</sup> The consumption component was computed by multiplying the volume of NFA sales of rice by the difference between the Manila retail price and the NFA selling price. The subsidy on rice consumption given in Table 15.3 may be an overestimate to the extent that the Manila retail price is higher than the retail price in other parts of the country.

The government's pricing policy for rice has included a price support for rice farmers and a price ceiling for consumers. The dual expenditure-financing decision is how much to subsidize the marketing margin. The amount depends on the government's level of rice procurement and the amount of financing available to the government marketing agency. In effect, how much is the marketing subsidy? To the extent that the government marketing agency is less efficient than the private sector, the

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<sup>2/</sup> Unnevehr (1983) reports: "Farmers who sell to NFA must hold passbooks issued by provincial NFA offices. The passbook entitles a legally recognized operator of rice farms to sell a certain amount per hectare to NFA. Rice in excess of this amount or rice produced by illegal tenants cannot be sold to the government agency. Rice of poor quality may also be refused. Furthermore, NFA pays by check, and farmers must travel to certain banks to obtain payment." (p. 18).

sum of the production and consumption subsidies on rice underestimates the total expenditures of government intervention in marketing.

The marketing subsidy is equal to the sum of the procurement cost and marketing cost, minus the revenue from sales. The government subsidized transportation and storage costs during the 1960s, and primarily storage costs during the mid-1970s and early 1980s (Unnevehr, 1983). The government procured a negligible amount of domestic rice during the 1960s and early 1970s; the total then accounted for less than 2 percent of production between crop years 1962/63 and crop year 1973/74. The principal role of the government then consisted of importing and disbursing rice. As the country moved from being a net importer to a net exporter, the government procurement program was stepped up. Government procurement accounted for about 6.5 percent of total production during the second half of the 1970s.

The experience of the National Food Authority during the 1970s and early 1980s illustrates the pitfalls of government intervention in food pricing without adequate budgetary discussion and resources. Because of inadequate budgetary support from the Treasury, the National Food Authority had to rely on "profit centers" to support its losing operations or have access to subsidized credit. The profit centers of NFA were its importation and sales of wheat, yellow corn, and soybean meal. NFA parlayed its tax exempt status to eventually obtain control over imports of the three commodities. Table 5.4 presents the Authority's net income from operations; the table indicates the importance of wheat and soybean meal as profit centers.

Table 5.5 presents the net income of the National Sugar Trading Corporation (NASUTRA) from 1978 to 1983. The table indicates that the corporation incurred losses throughout the period, except when world prices

peaked in 1980 and 1981. The losses appear to have resulted from the large financial costs of repaying the loans incurred earlier by PHILEX and from large trading costs, possibly due to the layering of the domestic sugar marketing chain.

#### Net Budgetary Effects

Table 5.6 summarizes the budgetary effects of agricultural pricing policies during 1960-82. The revenue effects are estimates of actual collections. Here it is assumed that there were no tariff collections from wheat, corn, soybean meal, and fertilizer imports during much of the 1970s because of the tax-exempt privileges of the importing institution and firms. The table indicates that there was a net revenue effect during the 1960s and a net expenditure effect during the 1970s and early 1980s. In addition, agricultural pricing took up a greater share of the budget during the 1970s than it did during the 1960s.

#### The Agricultural Budget

There are other taxes and expenditures on agriculture other than those directly associated with the government's agricultural pricing policy. Other tax revenues can be obtained from the share of agriculture in other taxes such as the income tax, documentary stamp tax, and land tax. Other government expenditures are made for research and extension, rural roads and bridges, and other agricultural support services such as agrarian reform and general agricultural administration. The sum of all taxes from agriculture and government expenditures on agriculture make up the agricultural budget.

Table 5.7 presents the level and percentage distribution of taxes on agriculture. Before 1970, agricultural taxes consisted of tariffs and special duties on imports of agricultural inputs and products, tobacco inspection fees, the share of agriculture in the income tax, documentary

stamp tax, land tax, and other taxes and fees (see Macaranas, 1973 for the estimation). During the 1970s, export taxes and the CCSF levy were added.

Table 5.7 indicates the importance of export taxes and the CCSF levy in raising the rate of agricultural taxation. Nonetheless, explicit agricultural taxation in the Philippines still constitutes only a small portion of total tax revenues. Indirect taxes contribute a greater share to revenues, largely because direct taxation involves such high administrative costs. The difficulties of direct taxation are further aggravated in the Philippines by poor land titling and inadequate (cadastral) surveys and land valuation.

Because of the public nature of governmental services, it is often difficult to determine the amount of government expenditures on agriculture. This section discusses only direct expenditures on programs that are specifically concerned with agriculture. Thus, the agricultural budget centers on the Ministry of Agriculture and Food, the Ministry of Public Works, the Ministry of Agrarian Reform, and related or affiliated public enterprises. Data were taken from the annual budget documents, when they are presented as "actual" expenditures except during 1979 and 1981-82; for those years data are presented as "estimates". Data for irrigation expenditures were taken from the National Irrigation Administration.

Table 5.8 presents the level and percentage distribution of government expenditures on agriculture. Government expenditures are classified into infrastructure, research and extension, and other agricultural support services. Infrastructure includes rural roads and bridges, irrigation, and storage and warehouse costs. Other support services include stabilization, agrarian reform, and general administration.

The table indicates the growing importance of irrigation in government expenditures on agriculture. This reflects the primacy of rice in the country's food policy, since almost all of the irrigation goes to rice farms. The development of new high yielding rice varieties since the mid-1960s has increased the economic returns from irrigation. In addition, the drop in rice production in the early 1970s when international prices were high increased the urgency of building irrigation systems. However, despite these incentives investments in irrigation did not increase substantially until international development finance and aid institutions provided the financial backing in the form of long-term loans.

Research and extension is needed to sustain vigorous agricultural development. Because of the locational specificity of crops, agricultural growth requires a strong domestic research community. Furthermore, much agricultural research is not patentable and cannot be internalized by firms; hence, the need for government support of agricultural research. Table 5.8 indicates that the share of expenditures on research and extension in the agricultural budget declined during 1960-82. This decline partly reflects the sharp increase in irrigation investment during the period. More importantly it indicates a waning of government support to agricultural research and extension during the 1970s.

Estimates of government expenditures on agricultural research and extension by Sardido and Evenson (1975) confirm the decline in government support to research and extension. These estimates are presented in Table 5.9. They are based on the "report of operations", annual reports, reports of stations and regions drawn from the auditing and budget offices of various government offices, five state universities, and three research granting institutions. Their estimates are lower than the estimates in Table 5.8 because they consider only the actual expenses expressly

programmed for research and extension. They do not include, for example the administrative expenses of a largely research and extension agency such as the Bureau of Soils. Nonetheless, both estimates confirm the declining share of research and extension in total national government expenditures.

The expenditures on stabilization consist primarily of the current operating expenditures of the Rice and Corn Administration (later the National Grains Authority and still later the National Food Authority) and program expenditures for price stabilization of the Philippine Coconut Authority and the Philippine Sugar Commission. Table 5.8 indicates that budgetary expenditures for price stabilization account for only a small proportion of government investments in agriculture. (The values in Table 5.8 differ from those in Table 5.6 because the subsidies estimated in Table 5.6 include foregone tariff revenues, while subsidies in Table 5.8 are actual expenses of the "price stabilization" agencies).

Table 5.10 presents government expenditures on agriculture as a share of total government expenditures and as a share of gross value added in crops and livestock. Table 5.11 summarizes the agricultural budget. As a share of agricultural output, government expenditures on agriculture increased markedly. However, as a share of total government expenditures they did not increase much at all. Thus, the increase in the share of agricultural expenditure to agricultural (output) largely reflects the declining share of the gross value added in crops and livestock to the gross national product. What rose perceptibly is the share of agricultural taxes in total government tax revenues. Although Table 5.11 shows that for much of the period the government spent more on agriculture than it brought in in agricultural taxes, the implicit taxation of agriculture (discussed in Chapter 6), rendered the net expenditure on agriculture inadequate.

Government Investment and Expenditure Bias

To determine the government investment bias, the following ratio was computed:

$$GIB = \frac{GI_A / GI}{GDP_A^{NI} / GDP}$$

where

$GI_A$  = national government expenditures on irrigation, rural roads and bridges, storage and warehouse, and research and extension

$GI$  = national government capital outlay

$GDP_A^{NI}$  = gross value added at current prices in agriculture (crops and livestock) in the absence of interventions, as estimated by the sum of the actual gross value added in agriculture and net total transfers from agriculture

$GIB$  = government investment bias

Similarly, the government expenditure bias was computed as follows:

$$GEB = \frac{GE_A / GE}{GDP_A^{NI} / GDP}$$

where

$GEB$  = government expenditure bias

$GE_A$  = national government expenditures in agriculture

$GE$  = total (national) government expenditures

Given that the Philippines has a comparative advantage in agriculture, a government investment policy that was supportive of agriculture would show  $GIB > 1$ . Similarly, a government expenditure policy

that was supportive would satisfy  $GEB \geq 1$ . Table 5.12 presents the estimates of GIB and GEB during 1960-82. Although all of the data on agricultural investment during the early 1960s may not be included, Table 5.12 indicates that the government neglected the agricultural sector in its investment portfolio during the decade. The government investment policy was more favorable toward agriculture during the 1970s; but it appears to have neglected agriculture again in its investment program during the early 1980s.

The estimates of GEB indicate that the government did not favor agriculture over the non-agricultural sector during the 1970s and early 1980s; the annual estimates of GEB are all less than one. Even if government expenditures on education, health, communications, and justice had been included in estimating the GEB, the picture of a "countryside transformed" (Marcos, 1976), would not emerge. The government appears to have paid only lip service to its agricultural development policy during the past two decades.

#### Administrative Impact of Interventions

Increased government intervention in the economy almost always implies an increase in the government workforce to administer the interventions. The Philippines is no exception to this. The "New Society" of the Martial Law regime was led by an activist government which encouraged the expansion of the government bureaucracy. Table 5.13 presents a summary of government employment by branch of government and by nature of service as reported by the Civil Service Commission. The period of fastest growth in government personnel occurred during the early years of the New Society, when increased government revenues and a larger external debt allowed the government to expand its activities and investment expenditures. The increase in government personnel also

coincides with the increase in the government's share of the gross national product.

The agricultural bureaucracy appears to have expanded during the 1960s and 1970s, although a time series on government personnel in agriculture-related bureaus cannot be constructed from the files of the Civil Service Commission. Fragmentary reports on the personnel-related expenditures of agriculture-related agencies show some expansion of the agricultural bureaucracy.

One agriculture-related agency that expanded tremendously (though with great variability) is the National Irrigation Administration (NIA). NIA's personnel incurred from 2,736 in mid-1966 to 23,051 in 1984 (NIA Annual Report, various years). The expansion of NIA reflects the government's heavy emphasis on irrigation in its investment program, the timing and bunching of irrigation construction projects, and the availability of financing for irrigation maintenance personnel.

Another agriculture-related agency that grew during the 1970s is the National Grains Authority (NGA). NGA had a total personnel complement of about 1,000 staff during 1966-67 (Drilon, 1967). In 1984, after it had been renamed the National Food Authority (NFA), it employed 11,207 staff.

The personnel complement of the other agriculture-related agencies grew more modestly. The Bureau of Agricultural Extension, the government's key extension agency, increased from 8,137 staff in 1974 to 9,838 staff in 1981. The secretariat of the Philippine Council for Agricultural and Resources Research and Development increased from 22 in 1973 to 1,370 in 1982. The Fertilizer and Pesticide Authority expanded from 10 persons in 1973 to 77 persons in 1983. Surprisingly, the personnel complement of the government agencies in charge of sugar and coconut did not increase much at all. The Philippine Coconut Authority had 1,391 personnel in 1974, and

1,297 in 1983. The Philippine Sugar Institute/Philippine Sugar Commission/National Sugar Trading Corporation had 1,325 personnel in 1973 and 1,481 in 1982. However, the personnel complement of these government agencies does not include the employees of companies and private organizations (e.g., COCOFED, COCOBANK) through which the agencies administered some of the government programs in sugar and coconut. Taking into account the private entities, the total bureaucracy in sugar and coconut also expanded substantially though probably not as much as NIA and NFA did.

#### Institutional Framework of Stabilization

The longest running direct government price intervention in agriculture is embodied in the activities of the government's rice and corn agency. It therefore is worthwhile to take a closer look at the development of this agency in assessing the administrative impact of government interventions.

The first government agency tasked with stabilization of rice prices was the National Rice and Corn Corporation (NARIC), originally created in 1936 as a subsidiary of the National Development Company. NARIC was reactivated after the war in 1945. It became an independent corporation in 1947, then merged with the Price Stabilization Corporation (PRISCO) in 1950, after which it was reconstituted as a corporation in 1951. In 1962, the functions of the corporation were given over to the Rice and Corn Administration (RCA), created under the office of the President. In 1972, RCA was supervised by the National Grains Authority (NGA), under the office of the Secretary of Agriculture. The NGA was expanded into the National Food Authority in 1981, again attached to the Office of the President with its head holding the rank of a Cabinet Minister. Since mid-1986, the National Food Authority has been relocated

in the Department of Agriculture and its head no longer has the rank of a Cabinet Secretary. The agency is once again in the process of reorganization.

The organizational changes in NFA over the years were not merely cosmetic. Changes were instituted partly to effect personnel changes and to generate a "fresh start". More importantly, changes were needed to handle the progressive expansion of the agency into new commodity groups. NARIC and RCA were involved exclusively in rice and corn; NGA expanded into wheat grain, mungbean, soybean and sorghum; NFA further expanded into the trading of fruits and vegetables, fish and marine products, meat and poultry, groceries, drugs and health foods, school supplies, etc. In addition, NGA and NFA gained regulatory control over the grain (NGA) and food (NFA) trade, provided insurance to approved warehouses against damage caused by natural calamities, and established a national post-harvest research institute.

The government attempted to stabilize rice prices primarily by controlling imports and setting farm support prices and consumer price ceilings. During the 1950s and 1960s, the government's ability to stabilize rice prices depended crucially on the accuracy of its projections of import requirements, since there were many legal constraints on importing rice and many fluctuations in domestic production. During the 1970s and 1980s, NGA and NFA were given more flexibility to use imports as a tool in stabilizing domestic prices.

During the 1950s and 1960s, certification was needed from the National Economic Council (NEC) that there was an existing or imminent shortage of rice before any imports could be authorized by the President. The Inter-Agency Committee on Rice and Corn Production and Consumption at NEC was tasked with reporting on the rice situation and preparing monthly

projections to use in making a decision on imports. NARIC, and later, RCA were responsible for importing the rice. However, during the Macapagal administration (1962-65), the law abolishing NARIC and creating RCA prohibited RCA from importing rice. Instead, rice was imported by private parties upon payment of corresponding taxes. When a rice shortage developed, the Macapagal administration resorted to importing rice through the Armed Forces of the Philippines, using as justification protecting the security of the State (Drilon, 1967, p. 239). In 1966, Congress passed an amendment allowing RCA to import rice and corn provided that NEC certified, in consultation with the Department of Agriculture and National Resources, that there was a critical shortage of such gravity as to constitute a national emergency and that the total importation would not exceed the amount necessary to cover the certified shortage (Republic Act 4643, reported in Apiraksirikul, 1976, pp. 34-45).

With the imposition of Martial Law and the replacement of RCA by NGA in 1972, the certification requirement was abolished; NGA could import rice upon the authorization of the President.

During the years that rice was being imported prices could only be stabilized through well-timed rice imports of sufficient quantity to meet the gap between domestic consumption and domestic production. The legal barriers to importing rice made it important to accurately project rice production and consumption levels and to obtain timely approval from the government to import. However, the quality of projections was less than satisfactory because of the variability of rainfed rice production and because the method of projecting import requirements was inadequate. Import requirements were estimated as a residual of the projected production and consumption requirement. The latter was obtained by multiplying fixed per capita consumption coefficients for adult males,

females, and children by the relevant rice consuming population. Added to this were estimates for seeds, feeds, and waste which also were based, respectively, on fixed ratios of rice hectareage, total requirements net of seed, and rice production. No allowance was made for income and price adjustments (see Mangahas, 1969; Apiraksirikul, 1976).

Mangahas (1969, p. 23) estimates that the forecasting error on requirements has been around 10 percent. Interestingly, Apiraksirikul, (1976, p. 83) indicates that actual imports during 1959-67 were much lower than the projected import requirements computed by the Inter-Agency Committee. This was probably due to budgetary constraints on NARIC/RCA, administrative obstacles to importation, policy decisions not to import despite the Interagency Committee projections, or foreign exchange constraints. The difference may explain why the domestic price of rice was higher than the border price during the period. Note that the method used by the government in projecting the import requirement implicitly assumes that the real price of rice is constant (hence, stable).

In addition to using import controls, the government set consumer price ceilings, producer price supports, and undertook domestic buying and disbursements of rice. The consumer price ceilings and producer price supports have been revised over time to take into account increases in the cost of production and allow for trading mark-ups. The government did not explicitly target the domestic price in relation to the border price. The leaders of the rice and corn agency have maintained that the agency need not handle a major portion of the domestic rice trade in order to stabilize prices. The Rice and Corn Administration only procured an average of 2.4 percent of total production during 1962-71 (Unnevehr, 1983, Table 1). RCA and NARIC focused more on rice disbursements than rice purchases in stabilizing prices. As the country became self-sufficient in rice

production during the latter 1970s, NGA became more involved in rice purchases, stockholdings, and some rice exports. Government procurement averaged about 7.2 percent of total production during 1975-81 (Unnevehr, op. cit.).

Traditionally, the rice and corn agency tended to cater to the lower income groups in its rice disbursements. Therefore its imports were of low quality and its price stabilization was set in terms of an ordinary variety of rice. Ceiling prices were imposed uniformly. There was some regional differentiation in producer support prices under RCA; under NGA, the support price was uniform across the whole country.

Since support and ceiling prices are not regionally differentiated, the impact of the government's procurement and disbursement activities depends somewhat on which regions participated in the procurement and disbursement. During the 1960s, much of the rice disbursement occurred in Manila, the country's largest net consuming area. The emphasis on Manila would have little effect on the prices in other regions as long as the transportation network were well developed and efficient. The rice prices of the major rice trading areas in the country (e.g., Iloilo, Cotabato) tended to move very closely with Manila prices. However, some rice deficit regions with poor infrastructures (e.g., the Bicol region) had much higher rice prices (Mears, 1974, pp. 211-215).

During the 1970s and early 1980s, rice disbursement and procurement became more spread out geographically. Manila's share of rice disbursements dropped from about 40 percent to 16 percent. Central Luzon's share of rice procurements dropped from 31 percent to 14 percent (Lantican and Unnevehr, 1986, p. III. 34). NGA shifted its procurement to Cagayan Valley in the far north of the country and Central Mindanao in the far south, in part because both regions had become important rice surplus regions.

The government appeared to be prepared to "lose money" in its rice trading interventions (Drilon, 1967). For example, it subsidized the operations of the rice and corn agency as a means of squeezing the marketing margin. During the RCA years, the difference between the ceiling price and the support price was very small and at times even negative. In setting official prices, NGA and NFA included milling and transportation costs but not storage costs (Unnevehr, 1983, pp. 10-11).

The financing of the rice marketing subsidy changed during the period. During the 1960s, RCA obtained financing from the budget or from loans from the Philippine National Bank. During the 1970s, NGA obtained the subsidy not only through the budget and loans but also through the profits from its import monopoly on wheat, corn, and soybean. NGA's borrowing capacity and the monopoly income from the three commodities appear to have encouraged unnecessary expansion of its facilities. Some of its major investment decisions at that time proved to be overdesigned and grossly underutilized during rice shortages (Public Administration Service, 1984).

In recent months, the Aquino government has been restructuring the National Food Authority. NFA's responsibilities are being narrowed to include only rice and corn, and there are plans to sell some of its facilities to the private sector. NFA also has lost its monopoly control over wheat, corn, and soybean imports. Therefore, implicit financing of NFA's trading operations has been done away with; instead, there appears to be a return to explicit financing through the budget and, possibly, bank loans.

#### Agricultural Administration

Uncoordinated growth in the number of agricultural institutions during the 1970s gave rise to a more complex and unstable agricultural

bureaucracy. Duplication of efforts was not uncommon, pay scales of agricultural personnel in the regular bureaus differed from those in institutions with corporate power, and coordination was hampered by the growing power and fiscal resources of a few commodity-oriented "authorities" (e.g., the National Food Authority, Philippine Coconut Authority). These entities had so much power that the head of the National Food Authority actually was made a member of the Cabinet together with the Minister of Agriculture and Food.

The duplication of efforts is probably best exemplified in the provision of extension services. At least three agricultural institutions have had large groups of extension personnel: the Ministry of Agriculture and Food, the National Food Authority, and the Philippine Coconut Authority. Some of the smaller institutions also have extension personnel in their project areas.

Duplication of efforts also was visible in the generation of statistics on agricultural production and consumption. Both the National Food Authority and the Bureau of Agricultural Economics gathered information about rice in the country, and when these data did not agree, arguments between the two agencies would break out about the rice situation. Data from the Bureau of Agricultural Economics on coconut production have differed from that of the Philippine Coconut Authority. Similarly, data on sugar production from the Bureau of Agricultural Economics have differed from that of the Philippine Sugar Commission.

The increase in the number of power centers in the agricultural bureaucracy made it difficult to coordinate agricultural programs and develop a coherent policy framework. As a result, it is debatable whether the delivery of agricultural services improved despite the proliferation of credit and extension programs and the infusion of budgetary and other resources to the sector.

In addition to policy reform, one challenge facing the Philippine government is how to improve the administrative machinery in delivering agricultural support services. Efforts have been made during the past two years to reorganize the agricultural bureaucracy, primarily by providing the Secretary of Agriculture greater control over agriculture-related institutions. Moving the National Food Authority from the Office of the President to the Department of Agriculture is one sign of this, as is making its leader an Undersecretary of Agriculture rather than a member of the Cabinet. In a similar fashion, the Philippine Sugar Commission has reverted to being essentially the Sugar Regulatory Authority.

Nevertheless, many administrative challenges remain for the Department of Agriculture. The heads of the National Food Authority and the Philippine Coconut Authority may not need to be made Undersecretaries of Agriculture, when the heads of a number of agricultural agencies have lower positions. The differences in pay among agricultural agencies and the research and extension system need to be eliminated. The extension system needs to be reorganized and better financed.

#### Observations on Government Intervention in Agriculture

The Philippines provides an example of how the implicit taxing power of national government entities is tied in with the supposed development function of these entities. For example, NGA financed its trading in domestic rice and corn and its so-called "industry development" activities largely from the profits it derived from controlling wheat, yellow corn, and soybean imports during the 1970s. NGA was able to make these profits primarily because it imported the grains duty free and sold them locally at prices far above border prices. Had these commodities been imported by the private sector, private traders would have had to pay tariff duties. In effect, the profits were like tariff revenues earmarked for NGA.

The NGA experience demonstrates that earmarked implicit taxation encourages inefficient use of resources. NGA grew from less than 2,000 personnel in 1967 to more than 11,000 personnel in 1984. Furthermore, it undertook investment projects that proved to be expensive and wasteful, such as, the Southern Grains Complex in Cotabato. Because the source of financing was almost automatic, investment decisions and expansion of the bureaucracy were undertaken with less scrutiny than they would have received had NGA been funded primarily from the budget.

The NGA experience indicates the need to minimize the tie-in between the taxing and spending powers of government. That is, explicit and implicit taxation should be done within the framework of the overall tax program of the government and collected by the appropriate tax agencies rather than government corporations. Similarly, budgetary allocations should be made within the context of the overall expenditure program of the government. In the process, investments like the Southern Grains Complex would be compared with the investments of the rest of the government.

However, separating the taxing and spending functions presumes the existence of an efficient and well-functioning budgetary department. If the budget process is slow, then the operational flexibility of government agencies like NGA will deteriorate. Therefore, the policy challenge for the government is to carefully examine each case of earmarked taxation or policy change.

The Philippine experience also demonstrates a case where government intervention in an industry expanded along the lines set at the start of the intervention. For example, government intervention in rice and corn from the outset relied on a government agency to undertake domestic purchases and sales, and to manage a buffer stock. When the agency was expanded to include other grains like sorghum, soybean, and

wheat, the methods of intervention employed were similar to those used for rice and corn. Similarly, use of the coconut levy to finance the coconut industry's vertical integration and replanting programs during the 1970s had its roots in the levy imposed on coconut farmers to finance the establishment of post production facilities (e.g., copra driers) before the World War II. The Coconut Consumer's Stabilization Fund (CCSF) levy of 1973 was essentially a follow-on to the COCOFUND levy of 1971 which financed investments in processing and banking facilities for coconut farmers. Although the CCSF levy originally was instituted to stabilize consumer prices, it soon began to be used as a source of funding for the investments originally envisioned with the COCOFUND levy.

The evolution of government interventions along set lines might reflect the absence of better modes of intervention to reach the same goals. However, it probably is better explained by organizational inertia and bureaucratic interests. The option of stabilizing domestic rice prices through the use of variable tariffs/taxes and heavier reliance on the private sector for imports and exports would have meant a leaner rice and corn agency and might have imparted an image of less control over price stabilization efforts. Furthermore, the government might have chosen to tax copra producers to finance its investment programs instead of financing them under the government's investment program because some of the coconut investment projects would have been given lower priority in the government investment program. In the process, the coconut bureaucracy would have been smaller and less powerful.

In the Philippines, when the government took on actual trading of produce, it was less efficient than the private sector. The Philippine government has been trading in rice and corn since the late 1930s; it traded in sugar during the 1970s and early 1980s. The UPSE report,

An Analysis of the Philippine Economic Crisis, (1984) shows the relative inefficiency of the government sugar trading company (NASUTRA) vis-a-vis the private sector. NASUTRA's trading costs were from 8 to 17 percent of the average selling price and from 11 to 21 percent of the purchase price. In contrast, the industry average before the monopoly was 8 percent (p.85). The trading costs of the government rice and corn agency have also been higher than those of the private sector. Mears, et al. (1974, pp. 252-253) estimate that the government's marketing cost in moving one sack of rice from Central Luzon to Manila in 1970 was about 9 percent higher than that of private traders. However, this computation of the government's costs did not include the cost of stock losses and leakages which sometimes were substantial during the 1950s and 1960s; they also did not include administrative costs. Therefore, the government's marketing costs were more than 9 percent higher than those of private traders.

Although there were many people who objected to the government's monopoly on sugar trading, there were few objections to the government's rice and corn agency (the National Food Authority). In fact, popular support recently has called for increasing the government's financial support so that it could meet its price stabilization objective. This suggests that the agency's price stabilization objective for rice and corn has assumed the character of a public good that the government must provide. Since NFA's trading costs are higher than those of the private sector, the government has to subsidize the trading operations of the agency. However, the amount of the subsidy to NFA rice and corn trading operations has been limited by competition with all of the other government expenditure programs.

## Chapter 6

### Transfers

At the heart of a country's development strategy is the extent to which government interventions affect resource transfers between the agricultural sector and the non-agricultural sector. This chapter attempts to estimate net transfers into and out of agriculture for the Philippines from the 1960s up to the mid-1980s. This analysis should reveal the sectoral bias in the Philippines' development strategy during the past two and a half decades.

#### Method

Two types of transfers were estimated: transfers which relate to the sector as a whole, and transfers directly related to price interventions in outputs and inputs. For the former, the major transfers into agriculture consist of government expenditures on irrigation, research and extension, roads, and agricultural support services. The major transfers out of agriculture consist of sectoral or economy-wide taxes such as the income tax. For the latter, the per unit transfer from direct output price interventions in a particular commodity is equal to the difference between the domestic producer price and the non-intervention price at the producer level (i.e., in the absence of direct price interventions). The per unit transfer from total price interventions in a particular commodity is equal to the difference between the domestic producer price and the non-intervention price at the farm level. Similarly, the per unit transfer from input price interventions is equal to the difference between the border price and the domestic price, except for the credit subsidy which was largely based on the estimates of the national government. For inputs, per unit transfers were multiplied by the farm

inputs consumed at the national level in order to get the aggregate transfers from price interventions. For output, per unit transfers were multiplied by the output produced in order to get the aggregate transfers from price interventions.

Two transfers series were estimated. In the "nominal" transfers series, the nominal transfers were deflated by the actual GNP implicit price index (or GNP deflator). In the "real" transfer series, the transfers were deflated by the non-intervention GNP deflator.

Specifically, the nominal price-related transfers due to output and input price interventions were computed as follows:

For outputs:

$$TD_i = \frac{1}{\overline{GNPI}} [P_i - P_i'] Q_i$$

$$TT_i = \frac{1}{\overline{GNPI}} [P_i - P_i^*] Q_i$$

For inputs:

$$-TD_j = \frac{1}{\overline{GNPI}} [P_j - P_j'] Q_j$$

$$-TT_j = \frac{1}{\overline{GNPI}} [P_j - P_j^*] Q_j$$

where:

$TD_i$  ( $-TD_j$ ) = direct transfers to (from) agriculture due to direct output price (input price) interventions

$TT_j$  ( $-TT_j$ ) = total transfers to (from) agriculture due to total output price (input price) interventions

$P_i$  = producer price of output  $i$

$P_i'$  ( $P_i^*$ ) = border price at the official (free trade equilibrium) exchange rate at the producer level

$P_j$  = domestic price of input  $j$  at the wholesale level  
(no data available at the producer level)

$P_j'$  ( $P_j^*$ ) = border price of input  $j$  at the official (free trade equilibrium) exchange rate

$Q_i$  = actual production of output  $i$

$Q_j$  = consumption of (demand for) input  $j$

The real transfers based on output and input price interventions were computed as follows:

$$RTD_i = \frac{P_i Q_i}{\bar{GNPI}} - \frac{P_i' Q_i}{\bar{GNPI}'}$$

$$RTT_i = \frac{P_i Q_i}{\bar{GNPI}} - \frac{P_i^* Q_i}{\bar{GNPI}^*}$$

$$-RTD_j = \frac{P_j Q_j}{\bar{GNPI}} - \frac{P_j' Q_j}{\bar{GNPI}'}$$

$$-RTT_j = \frac{P_j Q_j}{\bar{GNPI}} - \frac{P_j^* Q_j}{\bar{GNPI}^*}$$

where

RTD (RTT) = real transfers due to direct (total) price interventions

GNPI' (GNPI\*) = GNP implicit price index in the absence of direct (total) price interventions

Transfers due to non-price interventions consist of other taxes from agriculture and government expenditures in agriculture (e.g., irrigation, agricultural research, and extension). The deflator for the nominal transfer series was the actual GNP implicit price index; the deflator for the real transfer series was the non-intervention GNP implicit price index (i.e., GNPI' or GNPI\*).

$$TNP = \frac{TNPG}{GNPI} - \frac{TNPOT}{GNPI}$$

$$RTNP = \frac{TNPG}{GNPI^{NI}} - \frac{TNPOT}{GNPI^{NI}}$$

where

TNP = transfers at constant prices due to non-price interventions

RTNP = "real" non-price transfers

TNPG = transfers at current prices due to government expenditures in agriculture

TNPOT = transfers at current prices due to other taxes from agriculture

GNPI<sup>NI</sup> = non-intervention GNP implicit price index, i.e., GNPI' or GNPI\*

Thus, the net nominal direct and total transfers to agriculture (i.e., transfers to, less transfers out) are:

$$STD = TD_i - TD_j + TNP$$

$$STT = TT_i - TT_j + TNP$$

where

STD (STT) = net nominal transfers to agriculture due to direct (total) interventions

and the net direct and total real transfers to agriculture are:

$$SRTD = RTD_i - RTD_j + RTNP$$

$$SRTT = RTT_i - RTT_j + RTNP$$

where

SRTD (SRTT) = net real transfers to agriculture due to  
direct (total) interventions

Another method of estimating net transfers to agriculture is to use the value added approach. Under this approach, the nominal transfers due to output and input price interventions on the four crops were computed based on the difference between the estimated actual per unit value added and the estimated non-intervention per unit value added. Real transfers were estimated based on the difference between the actual per unit value added deflated by the actual GNP deflator and the non-intervention per unit value added deflated by the non-intervention GNP deflator. The differences in per unit value added were multiplied by the actual volume of output to obtain the estimates of nominal and/or real instantaneous transfers due to output and input (i.e., fertilizer) price interventions on the four crops. Transfers due to fertilizers not allocable to the four crops and due to agricultural machinery and credit were added to the transfers in order to get the sum total of price-related transfers.

One major difference between the first approach and the value added approach is that the estimates of per unit value added are really approximations of the returns to the farmers' labor and capital (including land); they do not include the returns to hired labor and rentals to landowners. In contrast, the first approach includes the returns to hired labor and landowners. This means that estimates of the transfers to and from the farmers using the value added approach would be a smaller share of the agricultural value added than estimates of the transfers to and from the agricultural sector using the first approach. The difference between the two estimates may provide a rough estimate of the impact of price

interventions on transfers to and from agricultural laborers, landowners, and other non-farmers in the agricultural sector.

### Results

In estimating the transfers due to output price interventions, the producer and border prices at the producer level used were the same as those used in estimating the nominal rates of protection in Chapter 3. Transfers on fertilizer inputs consisted of the sum of the computed transfers for urea, ammonium sulfate, ammonium phosphate, complete fertilizer and muriate of potash. The volumes of fertilizer inputs are the estimates of national consumption of fertilizer by grade. Transfers on four wheeled tractors were computed from the difference between the domestic sales price and the unit peso value of imports (c.i.f.); the volume is the estimated volume of sales of machinery dealers. The credit subsidy during 1976-84 was based on NEDA reports of government subsidies. For 1973-75, the credit subsidy was computed for three major supervised credit programs of the government: "Masagana 99" for rice, "Maisan 99" for corn, and "Gulayan sa Kalusugan" for vegetables. The subsidy was based on the difference between the actual interest rate charged on subsidized credit and the reference nominal interest rate. The latter was assumed to be equal to the prime commercial rate or the interest rate on government securities adjusted by the estimated unit cost of agricultural lending.

The non-price transfers consisted of export taxes from agricultural exports other than coconut and sugar, other taxes (millers tax, tobacco inspection fee, and the share of agriculture in income taxes), government infrastructure investments in irrigation, storage, and warehousing facilities and in rural roads and bridges, and government expenditures in research and extension and other agricultural support services. The data are presented in current prices in Chapter 5.

The estimates of the nominal transfers (at constant prices) and real transfers due to output and input price interventions are presented in Tables 6.1 and 6.2. The tables present two estimates for sugar, one using the export unit value as the border price and one using the ISA price. The estimates of transfers presented are a share of either the agricultural value added or the gross national product.

As a share of gross value added in agriculture, real transfers from direct output price interventions during 1967-84 averaged -1.4 percent per year for rice, 1.2 percent per year for corn, -1.1 percent (using the ISA price) to -6.2 percent (using the export unit value) per year for sugar, and -2.7 percent per year for coconut. Excluding 1973-75, real transfers as a share of gross value added in agriculture averaged 0.6 percent per year for rice, 1.5 percent per year for corn, 2.5 percent per year (based on the ISA price) to -3.0 percent per year (based on the export unit value) for sugar, and -2.8 percent per year for coconut.

Real transfers from direct output price interventions and the overvaluation of the peso during 1967-84, as a share of agricultural value added, averaged -6.8 percent per year for rice, -0.3 percent per year for corn, -5.8 percent (based on the ISA price) to -12.6 percent (based on the export unit value) per year for sugar, and -8.5 percent per year for coconut. Excluding 1973-75, the average shares of real transfers are -4.3 percent per year for rice, 0.1 percent per year for corn, -1.4 percent per year (based on the ISA price) to -8.2 percent per year (based on the export unit value) for sugar, and -8.6 percent per year for coconut.

Real transfers from direct input price interventions during 1967-84 consisted primarily of negative transfers from fertilizer pricing which averaged 0.7 percent per year of agricultural GVA, negative transfers from machinery pricing which averaged 0.8 percent per year of agricultural GVA, and positive transfers from agricultural credit which averaged 0.8

percent per year of agricultural GVA (during 1973-84). Net real transfers from direct output and input price interventions averaged -10.1 percent per year of the agricultural GVA during 1967-84. Excluding 1973-75, net real transfers from direct price interventions averaged -4.7 percent per year of agricultural GVA during 1967-84 (-0.4 percent of GNP per year during 1960-84). Net real transfers from direct output and input price interventions and the overvaluation of the peso averaged -28.3 percent per year of agricultural GVA during 1967-84 (-3.9 percent per year of GNP during 1960-84). Excluding 1973-75, net real transfers from total price interventions averaged -21.3 percent per year of agricultural GVA during 1967-84 (-3.1 percent per year of GNP during 1960-84).

The results in Tables 6.1 and 6.2 show that the government's output and input price interventions resulted in net price-related transfers out of agriculture during 1967-84. They also show that a significant share of the transfers out of agriculture occurred during 1973-75, adversely affecting the incomes of farmers during these years. The averages also indicate that the country's access to the higher priced U.S. sugar market during the 1960s provided a substantial source of transfers into the agricultural sector during the decade. Finally, the tables reveal the dominant role of the peso overvaluation as a source of negative transfers from the agricultural sector, accounting for about 64 percent of the net transfers from price interventions during 1960-84.

The results of the estimates of real transfers using the value added approach yield similar results, although the magnitude of transfers to and from the farmers is smaller (see Tables 6.3 and 6.4). Net real transfers due to direct output and input price interventions averaged -7.3 percent per year of agricultural GVA during 1971-84 (-3.1 percent per year

if 1973-75 is excluded). The net real transfers due to direct price interventions and the peso overvaluation averaged -22.0 percent per year of agricultural GVA during 1971-84 (-16.6 percent per year if 1973-75 is excluded). This indicates that the peso overvaluation is the dominant source of negative real transfers from farmers.

The net transfers to agriculture are presented in Tables 6.5 and 6.6. The results show that the government's agricultural policy during the 1960s and 1970s resulted in net transfers out of agriculture due to output and input price interventions and positive transfers into agriculture due to nonprice interventions. The results also show that, although the nonprice transfers moderated the negative price-related transfers, they did not fully offset them. Net transfers due to direct price interventions including other taxes and government expenditures on rural roads and bridges averaged -5.5 percent (using the XUP price) or -1.0 percent (using the ISA price) per year of the gross value added in agriculture during 1967-82; they averaged -0.4 percent (using the XUP price) or 0.5 percent (using the ISA price) per year of the gross national product during 1960-82. Net transfers due to total price interventions averaged -18.2 percent (using the ISA price) or -23.9 percent (using the XUP price) per year of the GVA in agriculture during 1967-82. They averaged -2.1 percent (using the ISA price) or -3.2 percent (using the XUP price) of real GNP during 1960-82.

To summarize, direct output price interventions resulted in generally positive transfers during the 1960s. However, they caused negative transfers during the 1970s for rice and sugar farmers, positive transfers to corn farmers dating from the late 1960s, and negative transfers from coconut and sugar farmers during the 1960s and 1970s. The magnitude of the negative transfers out of agriculture was larger during

the 1970s than the 1960s. This was because explicit export taxes and levies were imposed and implicit taxation from government-sanctioned monopsonies in the two key agricultural exports intensified during the 1970s.

Direct input pricing interventions resulted in consistently negative transfers from agricultural machinery taxation, consistently positive transfers from credit subsidy, and negative transfers from fertilizer pricing interventions. However, the peso overvaluation balanced out the negative transfers from agricultural machineries and turned the negative transfers from direct fertilizer pricing interventions into positive transfers. Nonetheless, more important sources of positive transfers to agriculture were the government expenditures in rural infrastructure, agricultural research and extension, and agricultural support services and administration. Dominating the resource flows out of agriculture over the entire period was the overvaluation of the peso.

Finally, when we turn to the net total transfers--total transfers to agriculture less total transfers out of agriculture, the results indicate that in most years the net flow of resources was out of agriculture into the rest of the economy. Furthermore, the volume of resource transfer was quite large, averaging 2.1 percent (based on ISA) to 3.2 percent (based on XUP) of the gross national product during 1960-82. These figures, though large, still underestimate the net transfers out of agriculture because they do not include the direct effect of support prices on manufactured goods purchased by the rural households.

## Chapter 7

### Income Distribution Effects of Interventions

#### Income Distribution and Poverty in the Philippines

The Philippines has a highly uneven distribution of income and a high incidence of poverty. There has been no significant improvement in the distribution of income during the past three decades.

Table 7.1 presents the quintile income shares and average incomes of urban and rural families in the Philippines between 1961-85. The figures are based on the family income and expenditure surveys that were conducted during those years. The share of the bottom 20 percent declined during the mid-1960s but picked up during the 1970s and 1980s. The share of the top 20 percent declined continuously during the 1960s, picked up during the mid-1970s, and then declined again until 1985. Therefore, it may appear that there has been some improvement in the distribution of income. However, since an economic crisis tends to hurt the middle and upper income classes more than the lower income classes, the figures for the 1975 and 1985 crisis years probably overstate the gains in income distribution.

The ratio of rural to urban average family income increased from around 40 percent during the early 1960s to 48 percent during the 1970s and early 1980s. The increase during the latter 1960s is somewhat surprising. It may reflect a change in the statistical definition of urban between the 1960s surveys and the later family income and expenditure surveys. The rural to urban income ratio deteriorated between 1971 and 1985, especially if using data from the quarterly household surveys, which measure the labor force and unemployment.

The Gini ratio remained fairly high over the period, by international standards--around .50. The distribution of incomes in the country is more unequal than in other countries in the region, since the income share of the bottom 20% in the Philippines is lower and the share of the top 20% higher than the corresponding shares in Korea, Hongkong and Taiwan (WB, 1985, p. 98).

Estimates of absolute poverty in the Philippines vary depending on which basis is used to determine the poverty line. The most frequently used basis is the food threshold, i.e., the minimum cost diet that takes into account nutritional requirements, food variety, and food habits. A second method is to adjust the price of rice in the consumption equation by the share of non-rice items in the total food budget. A third method, the total threshold method, estimates the minimum budget required for food, clothing, and shelter. It divides the food threshold by the share of food in the total budget.

Despite some data limitations, most studies indicate that the incidence of poverty in the Philippines is high. Using the food threshold, Abrera (1976) estimates that 25% of families in urban areas, 48% of families in rural areas, and 48% of families in the country overall were poor in 1971. In addition, Abrera estimates that the incidence of poverty (i.e., the number of poor families as a share of all families) increased by more than 20 percent for the whole country during 1965-1971. The World Bank 1985 report estimates that the incidence of poverty in urban areas was 35%, in rural areas 57%, and in the country as a whole 51% in 1971. Based on the alternative poverty thresholds used by Abrera, the World Bank and NEDA, the incidence of poverty in the Philippines in 1985 was between 48-60 percent for all families in the country.

Both the Abrera and World Bank studies show the incidence of poverty in rural areas to be much higher than in urban areas. The NEDA (1986) study of the bottom 30 percent of all families in 1985 yielded the same conclusion: more than 70 percent of the bottom 30 percent are agricultural families. Quisumbing and Cruz (1986) report an even higher share of agricultural families in the bottom 30 percent of all families during 1980-83 (80%).

A further breakdown of the incidence of poverty by main source of family income in rural and urban areas is presented in Table 7.2. The table indicates that farmers, agricultural laborers, and fishermen have the highest rates of poverty in the country. The table also indicates that the rice farmer is relatively better off than other farmers, fishermen, and agricultural laborers. This finding is consistent with the fact that the rice farmers benefited most from government programs in agriculture (e.g., irrigation, land reform) during the past two decades.

The regional dimension of poverty and income inequality in the Philippines is shown in Table 7.3. The four poorest regions in the country, measured as those having the lowest per capita regional domestic product (GRDP), are Eastern Visayas, Bicol, Cagayan Valley, and Ilocos. These regions accounted for nearly 25 percent of the total Philippines population in 1985. Nearly 50 percent of the population of Eastern Visayas and Bicol and 21 percent of the population of Ilocos belonged to the bottom 30 percent of all families in the Philippines. The second richest region in terms of per capita GRDP is also the most populous: Southern Tagalog, which is adjacent to Metro Manila. Although Western Visayas has a moderate GRDP, its distribution of income is much more uneven. More than 40 percent of its population belonged to the poorest 30 percent of families in the Philippines. Central Visayas, which had a higher GRDP than Western Visayas

in 1985, nevertheless had the highest percentage of its population belonging to the poorest 30 percent category. Together, Central and Western Visayas contributed one fourth of the country's poorest 30 percent category in 1985. Metro Manila, the wealthiest city, had a GRDP that was more than twice the national average plus that of Southern Luzon. Fewer than 6 percent of Metro Manila's population in 1985 belonged to the country's poorest 30 percent category. Thus, poverty in the Philippines is located primarily outside of Manila.

Table 7.4 presents regional per capita incomes during 1972-85. The general pattern for the country as a whole is one of increases during the 1970s followed by declines during the 1980s. The declines began earlier in some regions than in others, and the average growth rates among regions also varied.

One way of classifying per capita growth of the regions is as follows:

Average Annual Growth Rate (%)	Classification	Regions
≤ 0.5	stagnant	Cagayan Valley, Eastern Visayas, Western Visayas
≤ 1.0	sluggish	Southern Mindanao, Metro Manila, Bicol
≤ 1.5	average	Southern Tagalog, Central Luzon, Central Visayas, Northern Mindano
≤ 2.5	moderate	Ilocos
2.5 or more	high	Western Mindanao, Central Mindanao.

A comparison of Tables 7.3 and 7.4 shows that three of the poorest regions (Eastern Visayas, Cagayan Valley, and Bicol) and three relatively

well-off regions (Western Visayas, Southern Mindanao, and Metro Manila) had stagnant or sluggish growth rates of per capita income. Four regions, all average to well-off, registered average growth rates of per capita income comparable to the national average. Interestingly, the three regions with comparatively moderate to high growth rates were the muslim-dominated regions (Western Mindanao and Central Mindanao) and the home of President Marcos and other top ranking government officials (Ilocos).

To summarize, the distribution of income in the Philippines is more unequal in rural areas than in urban areas, and most of the poor are located in rural areas. Given the need to alleviate poverty in the rural sector, it is worthwhile to examine the effects that government price interventions in agriculture have had on income distribution.

#### Effect of Price Interventions on Producer Income

This section attempts to measure the instantaneous, short run, and cumulative effects of government price interventions on the distribution of income of farmers.

The instantaneous income effect on producers assumes that the price interventions do not affect output; therefore, actual output is used. The short run direct income effect on producers does take into consideration the short run output effects of direct price interventions. The cumulative total income effect on producers takes into account the cumulative output effect of direct and indirect (i.e., exchange rate) price interventions. The output effects were transformed into income effects through the use of per unit value added. Nominal incomes were deflated by the actual general price index or by the non-intervention general price index.

The availability of data on value added and the share of farm income to total income dictated the level of disaggregation of income

distribution effects. These effects are estimated by region; hence, the discussion addresses the regional impact of price interventions.

Method

The instantaneous real income effect of direct (total) price interventions on the producers of crop  $i$  in region  $j$  was estimated as follows:

Let

$$ANY_i^j = M_i^j \phi_i^j v_i^j Q_i^A$$

$$INY_i^j = M_i^j \phi_i^j v_i^{j'} Q_i^A$$

$$INY_i^{j*} = M_i^j \phi_i^j v_i^{j*} Q_i^A$$

where

$ANY_i^j$  = actual nominal income of producers of crop  $i$  in region  $j$

$INY_i^j$  = nominal income of producers of crop  $i$  in region  $j$  in the absence of direct price interventions

$INY_i^{j*}$  = nominal income of producers of crop  $i$  in region  $j$  in the absence of direct and indirect (i.e., total) price interventions

$M_i^j$  = marketable surplus ratio,  $0 < M_i^j < 1$ . For sugar and coconut, it is assumed that  $M_i^j = 1$  in all cases

$\phi_i^j$  = share of total national production of crop  $i$  in region  $j$

$v_i^j, v_i^{j'}, v_i^{j*}$  = per unit value added (actual, non-direct intervention, and non-total intervention)

$Q_i^A$  = actual national output of crop  $i$

then,

$$ARNY_i^j = ANY_i^j + GRDP^j - ANY_i^j$$

$$IRNY_i^{j'} = INY_i^j + GRDP^j - ANY_i^j$$

$$IRNY_i^{j*} = INY_i^{j*} + GRDP_i^j - ANY_i^j$$

and

$$ARRY_i^j = ARNY_i^j / GPI$$

$$IRRY_i^{j'} = IRNY_i^{j'} / GPI'$$

$$IRRY_i^{j*} = IRNY_i^{j*} / GPI^*$$

finally,

$$ID_y = \frac{ARRY_i^j - IRRY_i^{j'}}{IRRY_i^{j'}}$$

$$IT_y = \frac{ARRY_i^j - IRRY_i^{j*}}{IRRY_i^{j*}}$$

where

GRDP<sup>j</sup> = gross regional domestic product at current prices of region j

GPI = actual general price index, i.e., the GNP deflator

GPI'(GPI\*) = general price index in the absence of direct (total) price interventions

IRNY<sup>j'</sup> (IRRY<sup>j'</sup>) = nominal (real) regional gross domestic product of region j in the absence of direct price interventions

IRNY<sup>j\*</sup> (IRRY<sup>j\*</sup>) = nominal (real) regional gross domestic product of region j in the absence of direct and indirect price interventions.

The above method was modified to take into consideration the difference between irrigated and non-irrigated farms (for rice) and between mechanized and non-mechanized farms (for sugar). That is, the actual and non-intervention nominal income effects of price interventions on the producers of crop  $i$  in region  $j$  are the sum total of income effects on producers with attribute  $k$  ( $k$ =irrigated or mechanized) of crop  $i$  in region  $j$  and the income effects on producers without attribute  $k$ . The volumes used for per unit value added were by region and by attribute  $k$  for each crop  $i$  ( $i$ =rice, sugar).

The estimation of the short run income effect of direct price interventions on producers of crop  $i$  in region  $j$  is similar to the estimation of the instantaneous income effect of direct price interventions. The only difference is that here the actual national output is replaced by the national output in the absence of direct intervention ( $Q'_i$ ). That is,

$$SD_y^{\wedge} = \frac{ARRY^j - SRRRY^j}{SRRRY^j},$$

where,

$$SRRRY^j = \frac{M_i^j \cdot \phi_i^j (V_i^j Q'_i - V_i^j Q_i^A) + GRDP^j}{GPI^j}$$

The cumulative total real income effect of direct and indirect price interventions on the producers of crop  $i$  in region  $j$  is as follows:

$$CT_y^* = \frac{ARRY^j - CTRRY^{j*}}{CTRRY^{j*}}$$

where

$$CTRRY^{j*} = \frac{M_i^j \cdot \phi_i^j \cdot (V_i^{j*} Q_i^* - V_i^j Q_i^A) + GRDP^j}{CPI^*}$$

$Q_i^j$  = national output of crop i in the absence of direct price interventions

$Q_i^*$  = national output of crop i in the absence of direct and indirect price interventions

The non-intervention general price indices,  $GPI^j$  and  $GPI^*$ , were computed as follows:

$$GPI^j = a_A GPI_A^j + (1-a_A) P_A$$

$$= \frac{GPI^j}{1+d^0}$$

where

$$d^0 = a_{\text{rice}} NPRD_{\text{rice}} + a_{\text{corn}} NPRD_{\text{corn}} + a_{\text{sugar}} NPRD_{\text{sugar}} + a_{\text{oil}} NPRD_{\text{copra}}$$

$NPRD$  = net protection rate from direct price interventions for rice, corn, and sugar at the retail level and copra at the wholesale level

$a_i$  = output or expenditure share of i; 1 = rice, corn, sugar, and fats and oils (coconut)

$P_{NA}$  = non-agricultural price index

and

$$GPI^* = a_A GPI_A^* + (1 - a_A) P_{NA}^*$$

$$= \frac{GPI^*}{1 + d_A^* + d_{NA}^*}$$

where

$$D_A^* = a_{\text{rice}} NPRLT_{\text{rice}} + a_{\text{corn}} NPRLT_{\text{corn}} + a_{\text{sugar}} NPRLT_{\text{sugar}} + a_{\text{oil/coconut}} NPRLT_{\text{copra}}$$

$$d_{NA}^* = (1 - \alpha) \left( \frac{P_{NA} - P_{NA}^*}{P_{NA}^*} \right)$$

$$P_{NA}^* = \beta P_{NAT} \left( \frac{E^*}{E_0} \right) \left( \frac{1}{1 + t_{NAT}} \right) + (1 - \beta) P_{NANT}$$

NPRLT<sub>i</sub> = net protection rate from direct and indirect price interventions for rice, corn, and sugar at the retail level and copra at the wholesale level

### Estimates

In estimating the effect of price interventions on the distribution of producer incomes, the volumes of per unit value added by crop and by region were computed for 1978 using data from studies of the Ministry of Agriculture and Food: Valiente, et al. (various years); Almeda and Caddarao (various years). The values for non-intervention per unit value added were computed as follows:

$$VA_i^A = VAR_i \cdot P_i ; VA_i^{NI} = VAR_i^{NI} \cdot P_i^{NI}$$

$$VAR_i = 1 - a_{if} \left( \frac{P_f}{P_i} \right) - a_{i nf}$$

$$VAR_i^{NI} = 1 - a_{if} \left( \frac{P_f^{NI}}{P_i^{NI}} \right) - a_{i nf}$$

where

VA<sub>i</sub><sup>A</sup>, VA<sub>i</sub><sup>'</sup>, VA<sub>i</sub><sup>\*</sup> = per unit value added (actual, non-direct interventions and non-added interventions

P<sub>i</sub>, P<sub>i</sub><sup>'</sup>, P<sub>i</sub><sup>\*</sup> = output price of crop i

Pf, Pf', Pf\* = price of fertilizer  
aif (ainf) = cost share of fertilizer (non-fertilizer)

NI means no intervention

The values for actual and non-intervention per unit value added for 1978 were extrapolated to the early 1970s and the early 1980s using the above formulas and the output and fertilizer prices during the period.

The share of region j in the national output of crop i was computed using the annual crop estimates of the Bureau of Agricultural Economics during 1971-86. The marketable surplus ratios for sugar and coconut were assumed to be equal to one in all regions. The regional marketable surplus ratios for corn were computed based on estimates by the Bureau of Agricultural Economics of the amount of corn sold and used for purposes other than home consumption for some years during the 1970s. The regional marketable surplus ratios for rice were based on the annual national ratios for 1971-82 and the regional marketable ratios for the 1960s in Mangahas et al. (1970), the latter adjusted for the 1970s. The annual estimates of the percentage of mechanized sugar farms by region were extrapolated and interpolated from the PHILSUCOM estimates for crop years 1976-77 and 1981-82.

Four estimates of income distribution effects from price interventions were estimated for each crop. They are: (1) the instantaneous (nominal and real) income effects of direct price interventions, here termed instantaneous direct income effects; (2) the instantaneous (nominal and real) income effects of direct and indirect price interventions, here termed instantaneous total income effects; (3) the short run real income effects of direct price interventions; and (4)

the cumulative real income effects of total (direct and indirect) price interventions, here called cumulative total real income effects.

The instantaneous effects at the national level for each crop are presented in Table 7.5, where the income effects are measured as a percentage of actual and non-intervention gross national product. The estimates indicate that the nominal and real incomes of sugar and coconut farmers were adversely affected by the direct price intervention, while the nominal and real incomes of corn farmers were favorably affected by them. The nominal income effects during 1971-84 averaged about -0.5 percent for sugar and coconut farmers, -0.2 percent for rice farmers, and 0.1 percent for corn farmers. The instantaneous real income effects during the same period averaged -0.2 percent for sugar and coconut farmers, 0.1 percent for rice farmers, and 0.4 percent for corn farmers. The magnitude of income effects across crops follows the expected pattern: the lowest income losses occur in the nominally protected import substitute crops (e.g., corn) and the most income losses occur in traditional export crops. This pattern reflects the typical design of protection and disprotection to crops in less developed countries.

A comparison of the instantaneous direct real income effects and the instantaneous direct nominal income effects in Table 7.5 reveals the importance of the cost of living factor. During 1971-79, rice and coconut farmers generally had nominal income losses but real income gains; sugar farmers had large nominal income losses but small real income losses; and corn farmers had small nominal income gains but large real income gains. The difference between nominal and real income effects is explained by the cost of living. In nominal terms, the disprotection to coconut, sugar and rice farmers during the 1970s meant that the cost of living was lower with the direct price interventions on the four crops than it would have been

with no direct price interventions. Moreover, for rice and coconut farmers, the welfare gain from reductions in the cost of living was substantial enough to outweigh the nominal income losses. Conversely, in the years when the crops had large positive nominal protection, the domestic price was higher than the non-intervention case; the price effect was substantial enough that the welfare loss from the reduced purchasing power outweighed the nominal income gains of the farmers.

Table 7.5 shows the large potential income losses that farmers experienced during 1971-84 because of the overvaluation of the peso. When the peso overvaluation is taken into consideration, the positive real income effects of direct price interventions on corn and rice farmers turn into large negative income effects, averaging -2.5 percent and -3.0 percent of GNP, respectively. Similarly, the negative real income effects on sugar and coconut farmers become larger negative effects when the peso overvaluation is taken into account. The income losses are large because producers are not only earning less than they should be but they also are paying more than they should for non-agricultural products under the industrial protection system.

Table 7.6 presents the short run real income effects of direct price interventions and the cumulative real income effects of total price interventions on each crop during 1971-84. The estimates indicate that the cumulative total real income effects are all negative and larger than the instantaneous and short run direct real income effects.

Note, however, that the methodology used here in estimating the cumulative total output effects, and hence the income effects, leaves much to be desired. In the long run, the farmers could shift from the disprotected crops to protected crops or to the non-agricultural sector. Furthermore, the pricing policy affects the allocation of investment in

research and probably even in infrastructure, both of which affect the technology, overall cost, and value added of crop production. The methodology used in the study does not successfully capture these important dynamic adjustments to the price interventions. Nonetheless, the estimates of the short run direct and cumulative total real income effects are useful in providing some measure of the range of real income effects if output adjustments are taken into consideration.

The concentration and importance of crops in each regional economy determines the extent to which the regions will be vulnerable to government price interventions and the vagaries of international market developments. Table 7.7 presents the regional shares in the national output of rice, corn, sugar, and coconut and the contribution of the four crops to regional incomes for 1971 and 1985. The table indicates that there is some amount of regional concentration among the four crops. Sugar is the most regionally concentrated, with more than 50 percent of national output produced in Western Visayas. Rice is the least regionally concentrated, with the most important rice-importing region (Central Luzon) accounting for less than 20 percent of national output. Corn and coconut also tend to be regionally concentrated, with two regions accounting for about one-half of the national output of each crop: Southern Mindanao and Central Mindanao in the case of corn, and Southern Mindanao and Southern Tagalog in the case of coconut.

The regions differ in their reliance on the four crops for generating incomes. The regions most dependent on the four crops are Cagayan Valley, for rice and corn, Southern Mindanao, for corn and coconut, and Eastern Visayas, for coconut. To a lesser extent Bicol depends on rice and coconut, and Western Visayas depends on sugar and rice. The poorest regions are Eastern Visayas, Bicol, and Cagayan Valley; the other

two are among the well off regions. The regions least dependent on the four crops are Southern Tagalog (including Metro Manila), Central Visayas (including Metro Cebu), Central Luzon, and Northern Mindanao. All of these regions have large industrial bases. The Ilocos Region depends on other crops such as tobacco.

The regional impact of direct and indirect price interventions on the four crops is presented in Tables 7.8 and 7.9. Table 7.8 shows that, on the whole, direct price interventions led to real income losses for Western and Eastern Visayas, Western, Southern and Northern Mindanao, Southern Tagalog, Central Luzon, and Bicol but led to real income gains for Central Mindanao, Central Visayas, Ilocos, and Cagayan Valley. The regions which had the largest income losses were Western and Eastern Visayas; they also were hit hard by the decline in the world price of sugar and the volatility in the world price of copra. The other coconut producing regions--Bicol and Western Mindanao--also were hit hard by the government price interventions in coconut and the volatility in world copra prices. The regions which were favorably affected by the government price interventions were Ilocos, Central Mindanao, Cagayan Valley, and Central Visayas; the last three are corn producing regions which benefited from the positive protection on corn. All the regions suffered real income losses from the government's direct and indirect price interventions.

Insurgency in the Philippines historically has been based on agrarian conditions such as agricultural performance, tenurial relations, and degree of poverty and income inequality in the regions. The state of economic welfare in the regions, in turn, has been strongly influenced by international market developments and the government's pricing and non-pricing interventions.

Between 1930 and the early 1960s insurgency in the Philippines was centered on Central Luzon. During the 1970s and early 1980s, the geographical center of the insurgency shifted to the regions with low, largely stagnant or sluggish per capita incomes: Eastern Visayas, Western Visayas, Bicol, Cagayan Valley and Southern Mindanao (see Table 7.4). Most of these regions were hit hard by the government's direct price interventions (see Table 7.2) and the international market developments in sugar and coconut. Political insurgency also erupted during the 1970s in Muslim-dominated Western Mindanao and Central Mindanao, the two regions which registered the highest growth rates in per capita real income. However, insurgency here was primarily associated with the drive of some Muslim groups for political independence from the Philippines. Insurgency in Southern Mindanao is also partly related to this independence cause.

While the other regions were protesting, Central Luzon benefited from the government's agrarian reform efforts, being the country's rice granary and having a large share of irrigated rich lands. The region particularly benefited from the improvement in rice yields and the government subsidy in irrigation during the 1970s. As Table 7.4 indicates, Central Luzon registered an average growth rate in per capita real income.

The link between agricultural performance and insurgency in the Philippines is best exemplified by the case of the country's foremost sugar producing province, Negros Occidental in Western Visayas. Political insurgency in the province was negligible during the sugar boom years of the 1960s and early 1970s, although there was an undercurrent of discontent over the feudalistic structure and wide disparity in incomes. Government interventions in sugar production during the latter 1970s, the sugar crisis of the early 1980s, and the resulting impoverishment of the lower classes highlighted the contrasts in social conditions and brought on greater insurgency in the province during the 1980s.

Effect of Price Interventions on Agricultural Laborers

Agricultural laborers make up a large portion of the agricultural population, and they are among the poorest of the agricultural population. Therefore, it is worthwhile to explore the impact of agricultural pricing policies on them.

There are no annual time series data on agricultural laborers in the Philippines. Nonetheless, the results of the 1975 NCSO National Households Survey the 1980 Census of Agriculture and some village studies point to the importance of agricultural laborers in the agricultural economy and in rural society. Makil and Fermin (1978) report that, based on the 1975 NCSO National Households Survey, about 48 percent of all agricultural workers are farm laborers and other landless workers and 52 percent are landed farm owners (including a small number of farm managers, administrators, and overseers). About 69 percent of farm laborers in 1975 worked in rice and corn, 11 percent in sugarcane, 9 percent in coconut, and 11 percent in the other agricultural sectors (Makil and Fermin, 1978, Table 8, P.22).

The Census of Agriculture estimates that there were about 3.4 million farm operators in 1980. These operators hired from 0.76 million to 0.96 million permanent paid agricultural workers and from 8.3 million to 10.1 million temporary or seasonal workers in 1980 (1980 Census National Summary, pp. 26, 43). The figures on temporary or seasonal workers are based on reports by farm operators of how many agricultural laborers they hired. Since one temporary or seasonal worker may work on several farms during one season, the total given in the 1980 Census overestimates the number of actual seasonal or temporary workers.

Based on several village studies it appears that agricultural laborers make up at least one-third of the agricultural working population

in the Philippines. Ledesma's (1982) study of the two major rice producing provinces in the Philippines, Nueva Ecija and Iloilo, shows 33 percent of all households to be landless agricultural laborers and another 10 percent to be engaged mainly in nonfarm activities. Similarly, C. David's (IRRI) project on the effect of technical change in rice producing regions, also conducted in these two provinces, found that about 36 percent of the working population is hired agricultural workers and another 20 percent engage in nonfarm activities (see Bautista, 1987, Table 2, p. 23).

The landless agricultural laborers belong to the lower rung of the agricultural ladder. In Ledesma's study, they are the "worst off" in terms of household increases and socioeconomic indicators, although they do more work in the rice farming operations than the tenant farmers themselves (Ledesma, 1982, p. 181). In David's study sites, the household income of landless agricultural laborers constitutes an average of only 35 percent, 39 percent, and 51 percent of the household incomes of farmers in favorable, semifavorable, and unfavorable rice communities, respectively (Bautista, 1987). On the national level, the poverty incidence among landless agricultural laborers during 1982-83 was the second highest (after corn farmers) among groups in the rural sector and was considerably higher than that of rice farmers (see Table 7.2).

#### Effect of Price Interventions on Incomes of Agricultural Labor

The instantaneous effect of agricultural pricing policies on agricultural laborers only views agricultural laborers as consumers of agricultural produce since the wage rate, work effort, and laborers' income do not change immediately. To the extent that agricultural pricing policies increase the actual price of agricultural produce relative to its border price, then laborers as consumers are adversely affected. Where export taxation makes the price of agricultural produce lower than border prices, agricultural laborers as consumers are favorably affected.

The extent of the effect of agricultural pricing policies on the real incomes of agricultural laborers depends on the difference between domestic and border prices for each commodity and on the total expenditure shares of rice, corn, sugar, and cooking oil in the typical diet of an agricultural laborer.

The instantaneous real income effect of agricultural pricing policies on agricultural laborers is measured by the following:

$$\widehat{ID}_{y_w} = \frac{CPI'_w}{CPI_w} - 1$$

$$\widehat{IT}_{y_w} = \frac{CPI^*_w}{CPI_w} - 1$$

where

$\widehat{ID}_{y_w}$  = instantaneous direct income effect

$\widehat{IT}_{y_w}$  = instantaneous total income effect

Table 7.10 presents the results of the analysis. The table indicates that farm workers as consumers generally were favorably affected by the government's direct price interventions during the 1970s and early 1980s. Workers benefited from price controls when world prices were high during 1973-75 and from the disprotection of rice, sugar and coconut during the latter 1970s. Workers were adversely affected as consumers primarily when the domestic price of rice was allowed to be higher than the border price, in 1971-72, 1976, and 1982. The overvaluation of the peso counterbalanced the adverse effects of the direct price interventions, resulting in further net positive welfare effects to farm workers during the period.



- LNPPAPN = logarithm of the ratio of the agricultural  
(crops and livestock) price index to the non-  
agricultural price index
- LNPPiPN = logarithm of the ratio of the price index of  
commodity i (rice, corn, sugar, coconut) to the  
non-agricultural price index
- LNKLR = logarithm of the capital-labor ratio in the rural  
sector, defined as pesos per working day
- LNGNPME = logarithm of the index of real GNP of Middle  
East countries
- LNPPSEY = logarithm of the share of public sector  
expenditures to GNP
- LNGCAP = logarithm of the real GNP per capita

The values in parenthesis are t-values.

1. Real Wage Rate for Rice (or Palay)

$$\begin{aligned} \text{LNWPAL} &= -14.056 & -0.296 \text{ LNPPAPN} & + 0.909 \text{ LNWUCM} \\ &(-2.67) & (-1.08) & (2.61) \\ &-0.005 \text{ UN} & + 1.635 \text{ LNKLR} & + 1.891 \text{ LNGNPME} \\ &(-0.31) & (2.38) & (2.59) \end{aligned}$$

$$\begin{aligned} \bar{R}^2 &= 0.78 & \text{Rho hat} &= 0.90 \\ \text{D.W.} &= 2.37 & \text{F} &= 8.8 \end{aligned}$$

Sample Period = 1967-1980

2. Real Wage Rate for Corn

$$\begin{aligned} \text{(a) LNWCOR} &= 6.435 & -0.747 \text{ LNPPiPN}(-1) & + 1.726 \text{ LNWUCM} \\ &(0.38) & (-2.03) & (2.54) \\ &-0.036 \text{ UN} & -0.706 \text{ LNKLR} & + 1.941 \text{ LNGNPME} \\ &(-1.16) & (-0.32) & (2.17) \end{aligned}$$

$$\begin{aligned} \bar{R}^2 &= 0.45 & \text{Rho hat} &= -0.01 \text{ n.s.} \\ \text{D.W.} &= 1.54 & \text{F} &= 2.7 \end{aligned}$$

Sample Period: 1968-1980

$$(b) \text{ LNWCOR} = 0.191 + 0.001 \text{ LNPIPN}(-1) + 0.823 \text{ LNWPAL}$$

(1.13) (1.15) (6.90)

$$\bar{R}^2 = 0.91 \quad \text{Rho hat} = 0.57$$
$$\text{D.W.} = 1.32 \quad \text{F} = 40.8$$

Sample Period: 1968-1980

3. Real Wage Rate for Coconut

$$(a) \text{ LNWCOP} = -17.190 + 0.089 \text{ LNPIPN}(-1) + 0.650 \text{ LNWUCM}$$

(2.39) (1.30) (2.08)

$$-0.027 \text{ UN} + 2.244 \text{ LNKLR} + 0.243 \text{ LNGNPME}$$

(1.36) (2.30) (0.71)

$$\bar{R}^2 = 0.61 \quad \text{Rho hat} = 0.91 \text{ n.s.}$$
$$\text{D.W.} = 1.91 \quad \text{F} = 4.1$$

Sample Period: 1968-1980

$$(b) \text{ LNWCOP} = 0.118 + 0.077 \text{ LNPIPN} + 0.673 \text{ LNWPAL}$$

(0.52) (2.12) (7.88)

$$\bar{R}^2 = 0.77 \quad \text{Rho hat} = -0.39 \text{ n.s.}$$
$$\text{D.W.} = 2.29 \quad \text{F} = 14.2$$

Sample Period: 1968-1980

4. Real Wage Rate for Sugar

$$(a) \text{ LNWSUG} = 0.27 + 0.189 \text{ LNPIPN}(-1) + 0.616 \text{ LNWPAL}$$

(0.72) (0.56) (2.14)

$$\bar{R}^2 = 0.26 \quad \text{Rho hat} = -0.36 \text{ n.s.}$$
$$\text{D.W.} = 1.80 \quad \text{F} = 2.4$$

Sample Period: 1968-1980

$$(b) \text{ LNWSUG} = 0.383 + 0.735 \text{ LNWPAL}$$

(1.30) (3.71)

$$\bar{R}^2 = 0.38 \quad \text{Rho hat} = -0.21 \text{ n.s.}$$
$$\text{D.W.} = 1.95 \quad \text{F} = 5.0$$

Sample Period: 1967-1980

5. Real Wage Rate for Urban Areas

$$(a) \text{ LNWUCM} = 37.37 - 1.081 \text{ LNPAPN}(-1) + 0.011 \text{ UN} \\ (3.73) \quad (-1.65) \quad (0.69) \\ -4.786 \text{ LNGCAP} + 1.753 \text{ LNGNPME} - 0.0122 \text{ LNPSEY}$$

$$\bar{R}^2 = 0.94 \quad F = 43.8 \\ \text{D.W.} = 2.00 \quad \text{OLS}$$

Sample Period: 1966-1980

$$(b) \text{ LNWUCM} = 0.81 + 0.917 \text{ LNWPAL} \\ (1.29) \quad (2.18)$$

$$\bar{R}^2 = 0.21 \quad F = 4.8 \\ \text{D.W.} = 0.18 \quad \text{OLS}$$

Sample Period: 1966-1980

The above equations show that the coefficient for the commodity price ratios is either not statistically significant or has the wrong sign, suggesting that agricultural pricing policies--which aim at changing the commodity prices relative to non-agricultural prices--do not have a significant direct impact on real wages in the short run. While a labor surplus exists, this finding is not surprising. Improving agricultural commodity prices may help to absorb the pool of unemployed and underemployed even though it has little direct impact on the price of labor.

The results of the regressions show that the government-mandated minimum nominal wage rates in plantation agriculture were not effectively enforced and that paid labor is fairly mobile in switching to different crops in the sector. Because agricultural laborers in rice and corn production make up two-thirds of all agricultural laborers, their wage rates are influential in determining the real wage rate throughout the agricultural sector. The real wage rate regressions for sugar, which include the urban wage rate and the urban unemployment rate, were very poor statistically and so were not included. On the other hand, the real wage

rate for rice explains about 2/5 of the total variation in the real wage rate for sugar. Similarly, including the real wage rate for rice instead of the real urban wage rate in the regressions for corn and coconut increases the explanatory power of the regressions.

The interrelationship of rural and urban labor markets through migration also is indicated by the positive relationship between the urban wage rate and the agricultural wage rate. This is especially evident in the real wage rate for rice which is influenced by the real urban wage rate. At the same time, the real urban wage rate appears to be influenced partly by the real wage rate for rice. Thus, the regressions indicate some interdependencies between the rural and urban labor markets which reflect the relative ease of mobility of labor between the two sectors. Therefore, developments in the non-agricultural sector, through the urban labor market and wage rate, influence the real wage rate and earnings of rural laborers.

Three other observations from the regressions are worth mentioning. The first is that changes in urban unemployment do not help to directly explain the changes in either the rural or urban real wage rate. This probably reflects the impact of the large pool of underemployed in the rural and urban sectors. The second is that the capital-labor ratio appears to be positively related to the real wage rate in agriculture but negatively related to the real urban wage rate. (In the real urban wage rate regression, the capital-labor ratio is proxied by the real GNP per capita.) This contrast may reflect, on the one hand, the widely-held view that the capital stock in agriculture is so inadequate that an increase in the capital-labor ratio increases the productivity of labor and, presumably, the real wage rate. On the other hand, it may reflect the higher-than-optimum capital intensity of the manufacturing sector which unduly limits labor absorption in this largely protected sector. Third,

the real wage rate regressions suggest that the pace of economic activity in the Middle East had a positive effect on the real wage rate in the Philippines through the export of Filipino labor, especially during the latter 1970s. At this time the number of government-processed overseas employment contracts (mainly to the Middle East) rose from 36,000 (in 1975) to 266,200 (in 1981). The export of temporary labor together with permanent emigration helped to reduce the absolute number of unemployed and the rate of unemployment. In 1979, for example, the number of unemployed would have been about 24 percent higher if the export of foreign labor and emigration had not occurred (Tidalgo, 1984).

#### Effect of Price Interventions on Incomes of Consumers

In computing the instantaneous income effect of direct or total price interventions on consumers, it is assumed that the nominal incomes and food habits of consumers remain constant. The consumers were disaggregated into four income classes: "poor," "lower middle," "upper middle," and "rich," using the 1971 and 1985 Family Income and Expenditures Surveys. The poor consist of families whose average family income is P2,999 or less in 1971 or P29,999 or less in 1985. The lower middle class includes families earning P3,000-P5,000 in 1971 or P30,000-P59,999 in 1985. The upper middle class includes families earning P6,000-P9,999 in 1971 or P60,000-P99,999 in 1985. The rich are those earning more than P10,000 in 1971 or more than P100,000 in 1985.

Based on the above income classification, 68.5 percent of all families in the Philippines in 1985 were poor, while 28 percent belonged to the middle classes and 3.5 percent were rich.

The instantaneous income effect of direct price interventions on consumer k was estimated as follows:

$$ID_{y_k}^{\wedge} = \frac{CPI_k'}{CPI_k} - 1 = \frac{1}{1 + d_k^o} - 1$$

where  $d_k^o = \sum a_i^k NPRD_i$  ,  $i = \text{rice, corn sugar, copra}$

$a_i^k = \text{expenditure share of } i \text{ in consumer } k\text{'s budget}$

$NPRD_i = \text{net protection rate from direct price interventions for crop } i$

Similarly, the instantaneous income effect of direct and indirect price interventions on consumer  $k$  was estimated as follows:

$$CT_{y_j}^{\wedge} = \frac{CPI_k^*}{CPI_k} - 1 = \frac{1}{1 + dA_k^* + dNA_k^*} - 1$$

where

$$dA_k^* = \sum a_i^k NPRLT_i$$

$$dNA_k^* = (1 - \sum a_i^k) \frac{PNA - PNA^*}{PNA^*}$$

$$PNA^* = \beta P_{naT} \left( \frac{E^*}{E_o} \right) \left( \frac{1}{1 + t_{naT}} \right) + (1 - \beta) P_{naNT}$$

### The Estimates

The income effect on consumers of price interventions in food items can be expected to have the largest relative impact on the poorer income classes since food constitutes a larger proportion of their total budget. The price interventions would have a larger absolute impact on the richer families (unless the food item is an inferior good) but a smaller relative impact because food represents a smaller share of their budget.

The expenditure shares of the four crops by income class for 1971 and 1985 are given in Appendix Table A7.6. It is assumed that the expenditure shares in 1971 are relevant for the period 1966-1977 and that the expenditure shares in 1985 are valid for the period 1978-1986.

Table 7.11 presents the instantaneous income effects on consumers of direct price interventions; Table 7.12 presents the instantaneous income effects of total price interventions.

The income effects of direct price interventions on consumers were highest for the poor and lowest for the rich. This finding, which holds for the Philippines as a whole and for each of the three locations (i.e., Metro Manila, other urban areas, and rural areas), reflects that the four commodities take up a larger share of the budgets of the poor than of the rich.

During the period 1966-86, consumers in rural areas, other urban areas, and the Philippines as a whole were adversely affected by direct price interventions. In contrast, consumers in Manila were on the average better off with the direct price interventions. The income effects over time can be roughly subdivided into negative effects during the latter 1960s and early 1980s and positive effects during much of the 1973-1981 period. This pattern has been strongly determined by the nature, direction and magnitude of the protection/disprotection afforded to rice producers. It is not surprising given the larger share of rice expenditures in the family budget.

Interestingly, it is not the urban poor but the rural poor who are most vulnerable to domestic price interventions. Thus, the consumers that will be hardest hit by a price increase are the rural poor, who are net consumers of rice, sugar, corn, and coconut.

Table 7.12 presents the instantaneous income effects on consumers of total price interventions. It shows that the poor, and especially the rural poor, benefited the most from the total price interventions during the 1966-86 period; the rich benefited the least. The poor spend relatively more on agricultural products than do the rich. The rich spend relatively more on non-agricultural products than do the poor. Compared to non-agricultural commodities, agricultural goods were disprotected as a result of total price interventions.

To sum up, price interventions seem to have aggravated the incidence of absolute poverty in the rural areas of the Philippines. Farmers received lower incomes with direct and indirect price interventions than they would have without them. The estimates also indicate that the price interventions in the agricultural sector benefited the net consuming poor, especially the net consuming farmers and landless laborers who make up the poorest rural groups. This suggests that the price interventions tended to be a leveler of incomes in the rural economy of the Philippines. Finally, the estimates show that the regions with highly unequal distributions of income and/or higher rates of poverty were the hardest hit by the direct and indirect price interventions. Understandably, these regions tended to be centers of insurgency during the late 1970s and early 1980s.

## Chapter 8

### Variability

A major goal for the Philippine government in intervening in agricultural trading was to minimize the presumed adverse impact of price shocks on Filipino consumers and producers. The government's involvement in the trading of rice, corn, sugar, and copra was precipitated by "crises" of declines in supplies and sharply rising prices. Government intervention in agricultural trading modifies the transmission of price shocks in two areas: between domestic prices and world prices and between producer prices and consumer prices. This chapter examines the impact of the government's interventions on the relative variability of prices.

Tables 8.1 and 8.2 show how domestic prices have been stabilized by presenting two measures of variability of the price ratios: the variance and the Z-statistic. The Z-statistic is defined as

$$Z = \frac{\sum (X_t - X_{t-1})^2}{N-1}$$

for a variable X with N observations. The variances and Z-statistics were computed for the whole period 1961-86 and for two subperiods, 1961-72 and 1973-86.

One way to test the government's success at stabilizing domestic prices is to compare the domestic relative price variability, whether at the producer or consumer level, and the variability of its corresponding relative border price, either at the official exchange rate or at the free trade equilibrium exchange rate. Tables 8.1 and 8.2 indicate that, with the exception of one instance, domestic relative prices have shown less

variability than border relative prices during the whole period and during the two subperiods. The tables also show that the ratios of domestic price variability to border price variability in rice, corn and sugar were generally lower during 1973-86 than during 1961-72. This is because the Philippine government gave more attention to stabilizing the prices of the three crops during the more turbulent years between 1973 and 1986.

The only case in which domestic prices were less stable than world prices pertains to copra at the producer level during 1973-86. Here the actual relative producer price was more variable than the relative border price at the official exchange rate. This result is probably due to the imposition of the coconut levy during this period. The levy was varied several times and functioned as a specific tax. Therefore, the variation in the price of copra had a disproportionate effect on the copra price at the farm level.

A comparison of the variability of the domestic relative producer price ratios with the variability of the domestic relative consumer price ratios for rice, corn, and sugar (given in Tables 8.1 and 8.2) yields the following, where  $P_p$  is variability ( $P_p/PNA$ ) and  $P_c$  is variability ( $P_c/PNA$ ):

	1960-1972	1973-1986	1960-1986
1. Rice			
Variance	$P_p < P_c$	$P_p < P_c$	$P_p < P_c$
Z-statistic	$P_p < P_c$	$P_p < P_c$	$P_p < P_c$
2. Corn			
Variance	$P_p < P_c$	$P_p < P_c$	$P_p < P_c$
Z-statistic	$P_p < P_c$	$P_p < P_c$	$P_p < P_c$
3. Sugar			
Variance	$P_p > P_c$	$P_p > P_c$	$P_p > P_c$
Z-statistic	$P_p < P_c$	$P_p > P_c$	$P_p > P_c$

These results reveal a number of interesting points. First, stabilization of sugar prices is strongly biased in favor of the consumer. Table 8.1 indicates that, when world sugar prices began to fluctuate during 1973-86, the domestic relative consumer price of sugar fluctuated less than it had between 1961-72. Meanwhile the variability of the domestic relative producer price of sugar increased with the increase in the variability of world sugar prices.

Second, the government's stabilization of corn prices appears to be biased in favor of producers. This probably reflects the fact that yellow corn is an import substitute crop and the government wanted to encourage its domestic production through relatively stable support prices. Moreover, since yellow corn is primarily used for feeds, consumers are not expected to pressure for its price to be stabilized (although the livestock industry did lobby for a secure supply and stable prices).

Third, the government's stabilization of rice prices was biased in favor of producers. Producer prices were more stable than consumer prices during the 1960s. Since the Philippines was a net rice importer during the early 1960s and the early 1970s, the government rice and corn agency had to manage its rice buffer stock well or else consumer prices would be more variable. Studies indicate that the rice and corn agency actually did a poor job of managing its buffer stock, which in turn accentuated the seasonal fluctuations in prices during the 1960s. It is perhaps because of the government's failure to smooth out consumer prices that rice became an important political issue during the early 1960s. The apparent continued success at stabilizing producer prices compared with consumer prices during the 1970s and early 1980s might be explained by the decline in real rice prices during the late 1970s, making price less of a concern for consumers then.

Finally, the relative border prices at the free trade equilibrium exchange rate are more variable than the relative border prices at the official exchange rate. This is because the free trade equilibrium exchange rate is more variable than the official exchange rate. Thus, one benefit of the government's intervention in the foreign exchange market (primarily through external borrowing during the 1970s) was its moderating effect on the variability of domestic prices.

Table 8.3 presents the variances of, and correlations between, per capita output, per capita consumption, and the relative retail price for each crop. The results corroborate the observations made above based on the variances of the domestic and border prices.

Table 8.3 indicates that government policy favored sugar consumers over sugar producers during the 1970s. This is revealed by the much lower variance in per capita sugar consumption compared with per capita sugar output.

Table 8.3 also reveals the government's policy bias toward corn producers during the 1970s. The variance in per capita corn output was much less than the variance in per capita corn consumption. Similarly, the variance in per capita rice output was less than the variance in per capita consumption, suggesting that the government was more successful in stabilizing producers prices than consumer prices.

In summary, the comparisons among per capita output, per capita consumption, and relative retail prices reinforce the conclusions in the previous analysis based on crop prices. This is not at all surprising since government price interventions and pricing policy biases have corresponding impacts on output and consumption.

## Chapter 9

### Price Intervention Regressions

Contrary to what is depicted in the economic literature, government decisions are the result of a complicated policy choice process and do exert endogenous effects on the economy. The government behaves with its own objective function, set of constraints, and policy choice variables. What differentiates it from all other economic actors is that because it is the largest collectivity in the economy, its decisions are usually not undertaken with dispatch like those of an individual or a small group. They are shaped instead by the pressures of its various constituencies.

This chapter does not attempt to formulate a model of policy decision making where the interplay of economic and non-economic variables is explicitly considered. Instead, it presents simple price intervention regressions in an attempt to determine the importance of economic factors in the government's pricing intervention behavior. Thus, this chapter focuses only on the reduced form regressions and the economic determinants. Despite the absence of an explicit model and the exclusive focus on economic factors, the chapter is useful in identifying which economic variables are important in the government's pricing interventions.

The form of the price intervention regressions is:

$$INV = a_0 + b Z + u$$

where  $INV$  = a measure of price intervention

$Z$  = a set of determinants

The regressions were applied to the four agricultural crops.

Alternative specifications of INV at the producer or consumer levels were used; namely:

1. Direct price interventions

$$\text{NPRD} = \frac{P^d / \text{PNA}}{BP_o / \text{PNA}} - 1$$

2. Total direct and indirect interventions

$$\text{NPRLT} = \frac{P / \text{PNA}}{(P^b / \text{PNA}^*) (E^* E_o)} - 1$$

3. Producer price deflated by non-agricultural price:

$$P_p / P_{NA}$$

4. Consumer price deflated by non-agricultural price:

$$P_r / P_{NA}$$

5. Absolute price wedges between the border price and domestic producer or consumer price:

$$P_p - BP_o ; P_p - BP^*$$

$$P_r - BP_o ; P_r - BP^*$$

Recent studies have used a number of variables to explain econometrically the variation in the government's price interventions. The first one is the border price; it was used to determine whether the government tends to insulate domestic prices from variations in the border prices. If the government tries to insulate domestic prices, then it is postulated that there would be a negative relationship between the price intervention variable (in this case, NPRD or NPRLT or the peso price difference) and the border price. Specifically, the direction of intervention is assumed to be  $\frac{\Delta P}{\Delta BP} < 1$  and  $\Delta (P - BP) < 0$ , suggesting that the government insulated the domestic economy from external price

shocks; the degree of intervention is indicated by the absolute values of  $(\Delta P/\Delta BP) - 1$  and  $\Delta (P - BP)$ . Similarly, the elasticity of the domestic producer or retail prices (relative to the non-agricultural price) with respect to the border price (deflated by the domestic price level) would be less than unity.

A second variable that has been used to explain the price intervention behavior of governments is import capacity. The hypothesis is that the larger the import capacity of a country (i.e., the larger the exports receipt and foreign exchange reserves), the more willing the government will be to import a good  $i$  or to reduce exports of good  $i$  in order to reduce the domestic price in relation to the border price. Hence, there is a presumed negative relationship between the price intervention measure and the country's import capacity.

A third variable used in policy intervention regressions is the rate of inflation, either during the current year or lagged one or several years. The hypothesis is that the government tries to dampen the rate of inflation by dampening domestic retail prices. Thus, it is assumed that there is a negative relationship between the price intervention variable and the rate of inflation. However, it also can be argued that the relationship is not clear-cut, especially for commodities which have a significant weight in the cost of living index (e.g., rice). Moreover, to the extent that movements in the CPI are allowed to proxy for movements in the average cost of production, there could be a positive relationship between inflation and the intervention measure at the producer level.

Finally, the variability of the border prices of tradable agricultural crops has been considered in price intervention regressions. The presumption is that the government will try to insulate domestic prices

from short run fluctuations of border prices around the trend, rather than from long run trends.

Other factors also have been used in the various studies; however, they relate to the specific model presented in the studies. In this study, only the four variables mentioned were used. It should be noted that the hypothesized relationships between the price intervention measures and the set of determinants assume that price stabilization is an overriding objective of the government's price interventions.

#### The Estimates.

The regression results for the four commodities at the producer and consumer levels are presented in Tables 9.1 to 9.4. Almost all of the regressions show the hypothesized relationships between the various price intervention measures and the border price (either at the official exchange rate,  $BP_0$ , or at the free trade equilibrium exchange rate,  $BP^*$ ) deflated by the non-agricultural price index. Moreover, the coefficients are statistically significant.

The price intervention regressions show negative coefficients for the import capacity variable (MCAP) both for the lagged and the current year, especially for rice and in some cases for corn. Thus, the regression results are largely consistent with the hypothesized relationship and are indicative of the government's price stabilization efforts. The results appear to show that the country's import capacity has been an effective constraint even for rice, the country's primary foodgrain, during the rice importing years.

Most of the coefficients for inflation (INFLTN) and for the variability of the border price (VAR3, a three-year moving average of the square of the absolute value of the residuals from trend) are not statistically significant. The noteworthy exceptions are the positive

coefficients of INFLT<sub>N</sub> (-1) in the regressions for rice and corn. The statistically significant, positive coefficients of the lagged inflation rate in the rice and corn regressions are consistent with the government's method of determining the producer support prices for rice and corn. This method is based largely on the cost of production rather than explicitly on the border price.

Two other points should be mentioned. First, most of the regressions have high values of the coefficient of determination; this indicates that the variables used in the regressions explain much of the variation in government price intervention. Second, the regression results indicate that the government price interventions contributed, either deliberately or inadvertently, to domestic price stabilization.

## Chapter 10

### Political Economy of Agricultural Pricing Policies

#### Characteristics of the Political System

There are several important characteristics of Philippine politics that have persisted over most of the period in view. Most important, perhaps, is the predominance of individual loyalties over economic group interests in the political power structure (Abueva and de Guzman, 1969, pp. 156, 210). The two major political parties during the 1950s and 1960s were characterized by patron-client relationships from the national down to the local political level, with each party supported by similar mixes of the social and economic strata. Neither party had permanently been associated with a particular economic group and therefore intra-party loyalty tended to be weak. Popular leaders have found it easy to suddenly switch parties and bring with them their clients down the line.

Organized economic interests do exist, of course, and rice landlords, sugar planters, and coconut producers have associations which promote their interests on particular issues. There are also labor organizations, associations of small farmers, and chambers of commerce and industry. However, their influence has been weak compared to the vertical patron-client pattern of political relationships. In short, there has been no important political party that has represented the particular interests of any of these economic groups.

Beyond satisfying their clients, leaders at the national level must try at least to create an image that will attract votes. They must secure the interests of their clients in the vertical chain, and they must exhibit at least a minimal concern for popular interests. Beyond that,

however, there is much room for discretion in pursuing individual interests.

One implication of this is that political leaders have greater leeway to defend a policy position on the basis of personal conviction about the national interest than would be the case if they were beholden to powerful economic interest groups. Of course convictions can differ so that often legislators who have virtually identical chains of client followers will be found on opposite sides of a debate.

The relative independence that political leaders enjoy from interest groups also gives them greater freedom to pursue their own personal interests or those of the landed and business elite, as long as they meet the narrow interests of their clients and show some minimal concern for the interests of the masses.

The implication here is that political decisions on economic issues in the Philippines may not be governed by the consequences for different economic interest groups. These decisions are driven more by a perception as to the "correct" policy needed to achieve national goals. An example of this is the decision to maintain a fixed peso-dollar exchange rate at the pre-war parity after World War II. This decision might better be explained by a consensus about the "right" policy to pursue for economic stability than by a preponderance of weight exerted by special interest groups.

Another important implication of this view is that political leaders will moderate their stands on economic policy measures so as to avoid appearing to seriously harm any particular interest group. Again, by way of example, the government has rather consistently avoided adopting pricing policies for rice which strongly favor either consumer or producer interests. When strong measures have at times been taken, the outcry from

the injured group has almost invariably brought an early retreat to the action.

As a result of these influences, it appears that price interventions have not systematically been designed to hinder or harm the agriculture sector. The negative effects of "direct" price interventions instead are more a function of the ad hoc approach taken. There are examples for each commodity: for sugar it was sharing with consumers part of the premium from the U.S. quota; for rice it was the poor management of the trade monopoly; for coconut it was the opportunistic struggle for power by friends of the former president. Therefore, price interventions in agriculture have not been motivated by any systematic bias toward special economic interests. Even for yellow corn, which received positive protection during much of the period, the purpose of protection was as much the drive to substitute for corn imports as it was to allow the government grains trading agency (NGA/NFA) to make profits on its monopoly on corn imports.

There are two important exceptions to this conclusion. First, the "indirect" interventions have been dominated by the industrial protection system, and political support for industrial protection does imply priority for industry over agriculture. However, the nature and magnitude of the penalty imposed on agriculture by the industrial protection system had never been fully understood by policymakers. It was only in 1986 that the Ministry of Agriculture publicly acknowledged the serious adverse effects of the protection regime on agriculture.

Second, the political leadership comes overwhelmingly from the elite social class, and the interests of this class receive high priority in policy making. Although its origins were in the landed aristocracy, the elite class had long ago branched out into industry, commerce, finance and

the elite professions. Hence, the bias of the class is not necessarily for or against agriculture or any other economic sector. Rather, it is simply for the rich and powerful. As a result, the political leadership has been very successful in thwarting land reform and the development of a strong labor movement, despite the lip service it has paid to concern for the common man.

Another important political element is the strong role reserved for the central government in guiding and regulating the economy. Not only was this idea embodied in the Commonwealth Constitution, President Quezon made it clear at the outset of the Commonwealth in 1936 that he did not believe in a laissez-faire economy, but rather favored government leadership in economic planning (Gopinath, p. 116). In addition, the establishment of government corporations to participate directly in the economy was defended in 1937 on the grounds that there was no indigenous private entrepreneurship and that without intervention foreign capital would totally dominate the economy (Gopinath, pp. 121-127).

The first president's distrust of the market has persisted, making it easy and acceptable for the government to intervene with controls or direct government operations in the event of unexpected economic developments. Much of this distrust of the market is related to a widespread feeling that the market is manipulated by Chinese traders and multinational corporations. In any case, the Filipino people look to the government to provide them with an adequate supply of essentials at affordable prices and it is the government, not the market, that is blamed for any failure.

Another recurrent theme in the political economy of the Philippines is the influence of elections on economic policies. Researchers are familiar with the "blips" that occur at four-year intervals

in the time series for money supply and government spending. Import controls and food supply and pricing policies often are relaxed at this time in order to satisfy consumers during election years. Despite these and other tactics used by the incumbent, the opposition won four of the seven post-war elections prior to Martial Law (1972). This may reflect a tradition of strong opposition to abuse of authority as well as a modest degree of freedom and honesty in the electoral process.

External forces also have affected economic policies. Here the U.S. has been predominant, and with it the International Monetary Fund (IMF), and the World Bank (WB). The U.S. influence was built into the Trade Act that the Philippines was obliged to ratify as a condition for receiving rehabilitation aid after World War II. U.S. influence also stemmed from the Philippines' desire for development aid in the 1950s and a felt need to maintain an attractive climate for foreign capital. Philippine dependence on the IMF grew with each of the recurrent balance of payments crises and peaked with the debt crisis of the 1980s. The influence of the WB on economic policies became more substantial with the structural adjustment loans of the early 1980s.

Finally, the declaration of Martial Law in 1972 drastically changed the nature of political processes in the Philippines. The abolition of Congress virtually destroyed the political liaison system based on patron-client relations that had linked Manila to the provinces. At the central government level, the absence of Congress freed the hand of the President in policy making. At the same time, however, he relied heavily on his "technocratic" ministers, recruited from the business and academic communities. A workable, though uneasy, relationship evolved between the President and the technocrats, based on a reciprocal feeling that each could use the other to attain its goals.

The President's ambitions included wealth and fame. The latter he saw as dependent on economic development, which explains his commitment to it. Moreover, he also believed that the technocrats knew how to promote economic development. This gave the technocrats leverage in influencing the President on economic policy decisions. In return, they were willing to shield their eyes from the President's aggrandizements in the areas of power and wealth in order to enjoy this freedom in pursuing what they believed to be sound economic policies. Unfortunately for the Philippines, their policies were not all that sound and the costs of the President's aggrandizements turned out to be much greater than the technocrats had anticipated.

It is not surprising that the absence of Congress and any legal political opposition, together with the reign of the technocrats, coincided with the growth in the influence of the IMF and the WB. First, advice and recommendations coming from these organizations are more readily appreciated by technocrats than by politicians. Second, the technocrats were better insulated from the outcries of those who would be upset by the implementation of IMF and WB prescriptions. The election and convening of a new Congress in 1987 will undoubtedly imply a quite different relationship between the government and the IMF and World Bank.

#### The Political Economy of Direct and Indirect Interventions

Direct interventions are measured by the difference between domestic prices and border prices. The forms of direct interventions include the pricing policies of government marketing and regulatory agencies, export taxes and levies, and pricing, taxation and trade policies that affect agricultural inputs. Indirect interventions, in turn, are measured by departures from the free trade equilibrium exchange rate. The forms of indirect intervention include the current account deficit and,

more importantly for the Philippines, the industrial protection system which has supported an overvalued peso.

The authors maintain that most policy decisions regarding direct and indirect interventions have not been made jointly, nor has there been much evidence of conscious coordination between the two types of interventions over time. By and large the instruments are different, the motivations are different, and the agencies responsible are different. Of course, budget constraints have applied to all interventions but they influenced more the quantitative rather than the qualitative aspects of the policies adopted.

There is one important exception to the above finding: the coordination of explicit and implicit export taxes with devaluations of the peso. Each major devaluation was accompanied by an increase in export taxes as a way to control the increase in the domestic prices of the major exportables. Moreover, the pricing of rice and corn also was designed to offset (temporarily) the effects of devaluations.

Aside from this example, the overall lack of coordination between direct and indirect interventions makes it preferable to treat the two forms separately in analyzing political motivations and responses. Therefore, we will first consider the direct interventions for each crop and later the indirect interventions.

Before looking at direct price interventions, a brief comment is in order on the interaction between the quantitative effects of the various interventions estimated in Chapters 4 and 7, and the response of policymakers. In the Philippines, direct price interventions many times served to mitigate changes in the relative prices of agricultural products that came from other sources such as peso devaluations and fluctuations in world prices. Hence, the "effects" on production, incomes, etc., as

measured above are really partial effects to stronger external influences. Accordingly, we could not expect the government to react strongly, for example, to a negative output effect which was only a modest offset to a strong positive output effect.

#### Direct Price Interventions

Several factors appear to have motivated the government's direct interventions in the agricultural sector. The first is price stabilization, with its corollary, the prevention of "food crises". The latter basically means assuming adequate supplies and stable prices for food items, especially imports of rice and corn. Price stabilization implies that domestic prices remain stable regardless of fluctuations in border prices. This relationship is borne out by the measures of price variability in Chapter 8 and the results of price intervention regressions in Chapter 9.

Price stability basically was pursued for income distribution purposes. That is, the Philippine government did not tend to favor particularly either producer or consumer interests in its direct price interventions but rather was motivated to avoid seriously displeasing either side. The attempt to stabilize against either external shocks or domestic supply shocks served to avoid sudden movements away from pre-existing prices that might have been considered "unfair". This kind of motivation, which is consistent with the view of Philippine politics presented above, is best exemplified by the tendency of the government to intensify its agricultural interventions in times of "crises" involving domestic supply problems and/or sharply rising domestic prices.

The income distribution goal also is apparent in the pattern of protection or disprotection afforded rice and sugar farmers. The producer price of rice did not depart very much from the border price during 1960-86. The government's apparent lack of bias either for consumers or

against consumers of rice is not surprising. Rice farmers represent the largest group of farmers in the country, and rice takes up the largest expenditure share of any commodity for Filipino consumers.

The domestic producer price of sugar generally was lower than the border price but higher than the ISA price, especially during the 1960s. The difference is attributed to the government's transfer of part of the premium on U.S. sugar prices to Filipino sugar consumers. It did this by not allowing the domestic sugar price to rise to the level of the border export unit value. Again, this reflects the tendency of the government to avoid unduly hurting one group in favor of another, especially "poor" consumers relative to "rich" sugar producers. (It can be argued that, without the U.S. sugar quota in the 1960s, the Philippines could have contracted sales at prices in between the two alternative border prices for sugar; that is, at prices closer to actual domestic prices than either one of the alternative border prices used. Viewed this way, the domestic producer price of sugar did not depart very much from the border price.)

The domestic producer price of copra remained closer to the border price until the imposition of the CCSF levy and the establishment of UNICOM. At this time the producer price of copra dropped much lower than the border price. Although this would suggest that price interventions have been biased against producers, this was not the case. The price interventions after the "cooking oil" crisis were at least officially a form of short term taxation to producers in exchange for long-term benefits to them. The benefits would be conveyed through the restructuring of the ownership base of coconut processing and marketing and through productivity increases in coconut farming.

Only in corn production has government pricing policy consistently favored one group over another -- in this case producers over consumers. The positive pricing protection is a reflection of the government's drive for self sufficiency and the need for NFA to generate profits. It also helps to redistribute income in favor of the poor corn farmers.

The government's apparent lack of bias either for consumers or for farmers as a whole is indicated by the estimates of real transfers. Based on the XUP-related estimates, net price related transfers due to direct price interventions averaged -1.1 of GNP per year during 1960-82. However, if non-price transfers are included, the net transfers averaged only -0.4 percent of GNP per year during the period. Based on the ISA-related estimates, the net price related transfers due to direct price interventions and the net transfers averaged -0.2 percent and 0.5 percent of GNP per year, respectively, during 1960-82 (see Chapter 6). Thus, the direct price interventions and the non-price transfers were largely neutral in this effect on farmers and consumers.

The stability of prices and supplies also had a political basis during the pre-martial law years. The failure to maintain rice prices and the existence of rice shortages contributed to the downfall of incumbent administrations in 1961 and 1965. The political opposition tended to equate the incumbent administration's failure to adequately provide rice at a reasonable price as an indication of its weakness and inability to solve the country's economic problems.

Two factors which have influenced the nature of government intervention in agriculture are interrelated: the bias against "monopolistic" traders and the Filipinization of domestic and international trade. The idea that profits from agriculture have largely been going to foreign middlemen rather than to farmers has been very popular. As a

result, measures were enacted in the 1950s and 1960s to eliminate Chinese control of the retail and wholesale trade, as well as the milling and warehousing of rice and corn. Filipinos also were given priority in the allocation of import licenses during the 1950s as a means of nationalizing the import trade.

Government intervention in the export crops was partly justified as a way to strengthen the position of the Philippines vis-a-vis the multinational firms that were believed to control world markets. Before the 1970s, much of the copra trading and coconut oil manufacturing was controlled by foreigners. The government's establishment of coconut cooperatives during the 1960s was partly an effort to increase the control of Filipinos in the trading aspect of the coconut industry. The use of the coconut levy to purchase coconut oil mills, establish coconut marketing centers, and build coco-based chemical plants for coconut farmers, was designed to "dis-alienate" the coconut trading and processing sectors.

Recent papers (Canlas, et al., 1985; Ferrer, 1985; McCoy, 1982; Intal, 1987b) point out that political control and rent seeking also figured into the government's agriculture price interventions during the 1970s. These papers suggest that government decisions can be partly explained in terms of the generation of monopoly rent through the political process (e.g., the imposition of selective quotas or tariffs, exclusive franchises, etc.). Thus, the increase in income and economic power of a few individuals close to the president during the 1970s coincided with the increase in government control over certain economic sectors such as coconut and sugar (see, e.g., de Luna, 1986).

Finally, the generation of government revenue was another motive for imposing export taxes. Papers on public finance in the Philippines during the 1960s pointed out that the tax effort there was less

satisfactory than in other countries, and called for stronger efforts. Export taxes and premiums were a significant component of Philippine tax revenues during the early 1970s. Although these taxes have declined since then and were eliminated in 1986, revenue generation remains an important motive for export taxation. Therefore, it is not surprising that the proposals to completely eliminate export taxes on agricultural exports initially were opposed by the Ministry of Finance.

Since rice is the most important food crop, its price and availability have always been politically important, especially during election years. Rice crises even have contributed to the downfall of incumbent administrations. Moreover, it is not coincidental that the only time a president was reelected was in 1969 after the country attained temporary self-sufficiency in rice production through the new high yielding varieties. The goals of price stability and self-sufficiency dominated rice policy until a surplus for export finally was attained in the late 1970s. Indeed, in the development plan in the early 1960s, the importation of rice was proposed to be banned completely. Self-sufficiency was related to food security, especially because of the pervasive foreign exchange constraint during the 1950s and the 1960s.

During the 1950s, food price stability had macroeconomic implications. Low, stable food prices were needed to keep the rate of inflation low and thereby avoid aggravating the foreign exchange disequilibrium. Thus, overall price stability was an overriding concern of the Central Bank. The general price level declined during the early 1950s and barely increased during the latter 1950s. The stability in prices reduced some of the pressure on wages and helped to improve the profitability of the new manufacturing industries.

The nominal rate of protection on rice production from direct price interventions averaged 7 percent per year during 1960-82, and 1 percent per year during the same period excluding the crisis years 1961 and 1971. The unusually high NPRD for 1961 reflects the crisis in domestic rice supply which President Garcia attributed to weather and his political opponents attributed to poor planning. The crisis contributed to the President's defeat in his reelection bid in the 1961 elections.

The NPRDs for rice were negative during 1962-63. These negative values were followed by four years of large positive values. The negative values reflect the stabilizing role of rice pricing policy after the 1962 peso devaluation. However, the devaluation raised the profitability of export crops, which expanded at the expense of rice production (Treadgold and Hooley, 1967). The resulting shrinkage in rice supplies and increase in domestic prices during the next three years was an important political issue in the 1965 elections. It led to the defeat of the incumbent President Macapagal and the election of Ferdinand Marcos.

During his second year in office, President Marcos unveiled his "Rice and Roads Program" and predicted rice self-sufficiency within three years (Rama, 1967). The development of the high yielding rice variety and its quick adoption by farmers allowed the country to become self-sufficient in rice production during the late 1960s. The success of the "Rice and Roads Program" was important in the successful reelection bid of President Marcos in 1969.

The country's self-sufficiency in rice could not be sustained, however, because of rice tungro infestation and floods in 1971-72 and the less than favorable pricing policy during 1968-70. The nominal protection rate on rice due to direct price interventions dropped to almost zero during 1968-70 (see Table 3.1). As a result, the real producer price of

rice (i.e., the producer price relative to the non-agricultural price) fell substantially during those years.

Because of production shortfalls in 1971-72 and because the Philippines again became a rice importer at that time, the nominal protection rate from direct price interventions turned into large positive values. As a result, the real producer price of rice rose substantially during 1971-72 (see Figure 2.1a). When the world price of rice shot up in 1973-74, the government did not allow the domestic retail price to increase as far and this caused negative NPRDs. The real producer price of rice during 1973-74 remained at its 1971-72 level. In the meantime, the government was aggressively promoting the expansion of rice production through subsidized fertilizer and credit and through more intensive extension support services. The relatively favorable producer prices and the government's promotion of rice production programs allowed the country to regain self-sufficiency and to produce surpluses during the late 1970s.

The Philippines was a marginal rice exporter during the late 1970s and very early 1980s. At this time the real producer price of rice declined (see Figure 2.1a), a result of the declining real international price of rice and negative NPRDs. The economic crisis that occurred during 1983-86 made it difficult to obtain agricultural credit and reduced real government expenditures in irrigation maintenance and agricultural services. As a result, the Philippines became a net importer of rice again.

In summarizing rice pricing policies, there is no evidence of a persistent bias in favor of either producers or consumers. Producers benefited from the administrative obstacles placed on rice importation during the 1960s; consumers benefited from the rice and corn agency's reluctance to export during the latter 1970s. The years of large positive

or negative NPRDs largely reflect ineffective planning to avoid shortages or stabilize prices while world prices would fluctuate and foreign exchange would be hard to obtain. The real transfers associated with direct price interventions during 1967-86 averaged -1.1 percent of the agricultural value added (0.5 percent excluding 1973-74). The cumulative output effect of the direct price interventions amounted to 0 percent of the 1985 rice output. Thus, on the whole, there were no serious output or income losses caused by the price interventions, especially if nonprice government expenditures also are taken into account. The relatively neutral effect of the government's pricing policy for rice helps to explain the large gains in rice output during the 1970s.

However, one important group has suffered from rice pricing policies during the 1970s: rainfed rice farmers. While the domestic price of rice stayed close to the world price, the real price fell as productivity increased. The productivity gains accrued to consumers and lowland irrigated rice farmers rather than to rainfed farmers. For them there was no offset to the decline in the purchasing power of rice. As a result, the hectarage devoted to rainfed rice production declined during the early 1980s.

### Corn

Until the early 1960s, corn policy in the Philippines focused on the availability and price of white corn, which is a staple food for about 20 percent of the population in the Visayas and parts of Mindanao. White corn is not internationally traded, so corn policy did not become politically important until domestic shortages appeared and yellow corn had to be imported to replace it.

The expansion of hog and poultry production and the shift from backyard to commercial production in the late 1960s made corn import

policies an important issue in the 1970s. The sharp increase in the volume of yellow corn imports at the turn of the 1970s prompted the government to increase its efforts at attaining self-sufficiency in yellow corn production. The NPRD for corn averaged 32 percent per annum during 1967-86 (see Table 3.1). The positive NPRD encouraged output growth; at the same time, it supported the profit notions of the government monopoly importer, the National Grains Authority (NGA). NGA financed its support price for rice with profits from its importation of wheat, corn and soybeans.

Of the four commodities examined here only corn had positive cumulative output effects resulting from direct price interventions (see Table 4.1). Transfers to corn farmers were positive, amounting to an average of 1.3 percent of agricultural value added during 1967-86.

In corn pricing policies, producers appear to have been favored over consumers. It is difficult to gauge the extent of the preference, however, as high corn prices also served the goal of self-sufficiency and the revenue-generating interests of NGA. Corn pricing policy also has had a positive effect on income distribution -- favoring poor corn farmers (see Table 7.5) and penalizing middle- and higher-income consumers of chicken and pork.

Corn provides an excellent example of how pricing policies in the Philippines do not support the needs of special interest groups. Corn farmers are the second most numerous and geographically dispersed farmers in the Philippines. In addition, they are the least organized among the producers of the four major crops. The firms in the feed milling and livestock sectors, and middle class consumers of chicken and pork, on the other hand, are more concentrated and better organized than corn farmers. Despite these advantages, corn farmers have been better served by corn pricing policies.

The positive NPRDs for corn encouraged the production of domestic yellow corn. By the mid 1980s, the harvested area in corn exceeded the harvested area in rice. The current protection regime appears to be placing the country on the verge of self-sufficiency. The Department of Agriculture in fact recently (1988) considered subsidizing exports of yellow corn to prevent a glut in the domestic market and a decline in the producer price of corn.

The consistent protection of corn prices has provoked the anger of feed millers and livestock firms, who called for the resignation of the Secretary of Agriculture in 1988. Recent pressures to liberalize the import of meat and meat products under the World Bank-Philippine program of trade liberalization have exacerbated the policy dilemma between corn and livestock farmers. In the near future the Philippine Government may need to shift its support for corn production from protecting prices to providing yield-increasing technology, infrastructure, and extension support services. This would allow it to bring its protection of corn prices to a level consistent with the needs of the domestic livestock industry under a more liberalized trade regime.

#### Sugar

Before the imposition of martial law, the "sugar bloc" may have been the strongest economic interest group in the Philippines. The relatively small number of producers, the large number of plantations, and the export premium from the U.S. sugar quota led to wealth and political power for the sugar planters and millers. Nevertheless, the influence of the sugar "barons" on national politics has tended to wane over time. Philippine society has had an ambivalent attitude toward the sugar bloc: while its political influence was feared and respected, it also was resented. This was partly due to the arrogance and ostentatious living of

wealthy sugar families (Golay, p. 29). More importantly, they represented the old colonial economic relationship with the U.S. In this capacity they set themselves against the industrialization strategy of the 1950s and its system of import controls. Before that, they favored delaying independence and continuing rather than phasing out the free trade relationship with the U.S.

Therefore, as industrialization proceeded and new powerful economic interests took hold, the sugar bloc was increasingly seen as a reactionary force. The opposition to decontrols and devaluation in the 1960s was motivated in part by the perception that much of the gains would accrue to wealthy sugar interests and foreign interests.

With the imposition of martial law and the termination of the U.S. quota in the early 1970s the political power of the sugar elite was vastly eroded. The elite represented an old oligarchy that was a prime target of the emerging new oligarchy under the Marcos family. The sugar industry came under the control of the government and its appointed sugar administrator. The negative turn in world sugar prices in the second half of the 1970s and early 1980s left many sugar planters and millers heavily in debt and their sugar lands and mills mortgaged to the banks, principally the Philippine National Bank and the Republic Planters Bank. Both were controlled by the government.

The expansion of the sugar bloc helps put into perspective the competition between producer and consumer interests as well as the net effects of the intervention on sugar producers during the 1960s and 1970s. The nominal rate of protection due to direct price interventions to the sugar producers, using the (adjusted) ISA price as the relevant border price, fell from 101 percent per year during 1960-71 to -16 percent per year during 1972-81. It increased again, to 67 percent per year, during

1982-86. Using the export unit value as the relevant border price, the nominal rate of protection was even worse -- declining from -14 percent per year during 1960-71 to -21 percent per year during 1972-81 and -25 percent per year during 1982-86.

As discussed earlier, one can perceive an income distribution concern reflected in the allocation between consumers and producers of the premium from the U.S. quota during the 1960s and in attempts at price stabilization during the 1970s. During the 1960s, sugar producers were required to meet the domestic sales quota at prices lower than export prices in order to protect consumers from the adverse effect of the export premium from the U.S. sugar quota. Thus, the domestic sugar price was below the XUP border price and above the ISA price.

During the 1970s, the government pursued price stabilization in the face of volatile prices -- a process which favored consumers during the early 1970s and favored producers during the late 1970s. The government intervened primarily by taking control of the domestic and export trading of sugar. The performance of the government monopoly was spotty, however, and caused substantial losses (see Table 5.5). These losses eventually were shouldered by sugar producers through a lower buying price and proceeds were used to pay off the losses incurred by the government monopoly. Accordingly, the monopoly lost the support of planters and millers; acrimonious debates frequently broke out over the pricing and marketing strategies of the monopoly (Galang, 1984); and millers and planters many times requested the monopoly be abolished.

The Philippines was not prepared for the conditions in the world sugar market of the 1970s and early 1980s. Until the termination of the U.S. sugar quota in 1974, the Philippine sugar industry operated under a regime of relative certainty in export markets and prices. Its central

problem then was expanding sugar production fast enough to meet the quota requirements of the United States or else face a permanent reduction in the Philippine quota in succeeding years (see Marcos, 1967). That is why the export premium was not all taxed away; sugar producers would not have had the incentive to meet the quota. Moreover, the government encouraged the expansion of sugar production primarily by expanding sugar hectarage and establishing sugar mills.

The termination of the U.S. sugar quota forced the Philippine sugar industry to operate within a more volatile environment. The expansion in Philippine sugar output was accompanied by a decline in sugar yield due to reduced farm productivity and processing efficiency. This made the domestic sugar industry more vulnerable to the fluctuations in world sugar prices. Thus, the troubles of the Philippine sugar industry reflected the adjustment problems of an increasingly inefficient producer which no longer had access to a large and protected export market.

The government interventions aggravated the structural adjustment problems of the sugar industry by forcing farmers to shoulder the losses of the sugar trading monopoly. The government interventions of the 1970s failed because they focused on power, aggrandizement, and control of the export trade rather than on measures to increase productivity and diversify crops in the sugar regions.

Perhaps the most important source of rent seeking was the marketing margin charged by NASUTRA, which was much higher than the industry average before the monopoly. This came about partly from the layering of the domestic distribution network with "paper traders". The prohibition on industrial users and wholesalers from buying directly from private refineries allowed paper traders to generate rents from the quota rights. Another source of rent seeking occurred in the form of overpricing

the investment packages for establishing sugarmills financed by loan money or guaranteed by the Philippine National Bank (see Intal, 1987b).

Under the Aquino administration, the sugar trade has been returned to the private sector. The basic problems of productivity and diversification remain, however, and there is much uncertainty about how to implement land reform.

### Coconut

Government intervention in coconut pricing and marketing only became significant in the 1970s. The interventions were controversial, for a number of reasons. First, they affected nearly one-fifth of Filipino farmers, compared to about one percent in the case of sugar. Second, the interventions created a parastatal but legally private bureaucracy that was largely outside the purview of government auditing regulations; hence, records of financial transactions in most cases were not available for public scrutiny. Third, and perhaps most important, the interventions provided substantial opportunities for rent seeking (Intal, 1987b).

In 1973, the government imposed the coconut levy. Initially intended as a price stabilization measure for coconut-based consumer products under government-mandated price control, the levy eventually paved the way for the government's more active involvement in coconut pricing and marketing. This was achieved through its vertical integration and coconut replanting programs.

The vertical integration program was based primarily on the program of action advanced by the Philippine Coconut Producers Federation (COCOFED) in 1968. This program ostensibly was designed to increase the farmers' share of value added in the coconut industry by giving them indirect control of oil mills and other coconut-based industries. The program was essentially a reaction to the government's neglect of the

industry and the foreign domination of copra financing, trading, and coconut oil manufacturing. The vertical integration program is, in part, an effort to nationalize the coconut trading and processing sectors.

The coconut replanting program was funded from the coconut levy and was meant to address the low stagnating productivity in coconut farming. The program was designed to utilize one coconut hybrid variety, with all of the seednuts coming from the coconut farm owned and controlled by the government's coconut administrator, who happened to be a key business associate of the President. The exclusive reliance on the one variety was not warranted technically, however (Sangalang, 1987). The potential returns to the seednut farm appear to have been substantial because the development costs of the farm were financed from levy funds and because of favorable contract prices (Sacerdoti, 1982; ILMS, 1981).

Two other objectives are connected with the vertical integration program and associated creation of a government-mandated dominant coconut oil milling firm (UNICOM): the promotion of processing of the primary product, (copra) and the exploitation of rents from monopoly power in world trade. Of the two, the promotion of processing appears to have been the more important. Export taxes in coconut oil were lower than those on copra; the government actively promoted coconut oil manufacturing in the second half of the 1970s; and copra exports were barred in support of domestic coconut oil milling. The motives of nationalization, monopoly trading, and promotion of processing appear to have been mixed with the motives of wealth and power aggrandizement on the part of the President and his friends.

The policy interventions created an interlocking directorate in the coconut industry: the key policy formulating and implementing institutions in the industry were headed by the same individuals or their

representatives. The interrelationship between policy formulation and implementation in a selected few institutions and individuals provided room for personal aggrandizement, by allowing personal investments to merge with a public policy that endorsed monopoly rents. For example, with rent seeking in the United Coconut Planters Bank (UCPB) and UNICOM, individual co-owners had higher equity participation and lower equity contribution than did the farmers. As a result, the individual co-owners, who controlled the policy making institutions in the coconut industry, received a disproportionately higher share of the earnings of the two corporations. The profit sharing scheme for the top executives of UCPB also provided a form of rent seeking because funds from the coconut levy were deposited with UCPB interest free. Since UCPB's earnings were inflated by the fact that the levy funds were interest free, part of the incomes of the bank's executives from the profit sharing scheme reflect the foregone interest income of the farmers (Intal, 1987b).

The interventions during the 1970s and early 1980s hurt the coconut farmers. The nominal rate of protection, which averaged about -1 percent per year during 1960-69, fell from about -10 percent per year during 1970-73, to -19 percent during 1974-78, and -24 percent during 1980-86. The negative values for NPRD during 1970-72 represent the effect of the export tax plus, perhaps, some delay in the adjustment of domestic prices to the devaluation. The negative values during 1974-78 reflect the export tax plus the coconut levy. The negative values for 1980-86 reflect the addition of the monopsony power of the government-mandated coconut oil mill (UNICOM). Transfers from, or the foregone income of, coconut farmers as share of the gross national product averaged 0.05 percent during 1961-69, 0.43 percent during 1970-79, and 0.66 percent during 1980-84. These values bring out the irony of a scheme which was allegedly designed to

integrate production and marketing in the coconut industry on behalf of the small farmers.

### Inputs

Government input policies have aimed at providing partial or complete subsidies to farmers. Apart from research and extension and rural roads, input policies focused on irrigation, fertilizer, and agricultural credit.

Government expenditures for irrigation in the Philippines have gone almost exclusively to the rice industry. There are two noteworthy periods of investment in irrigation. The first was during the mid 1950s, when President Magsaysay used irrigation as part of his social amelioration program for the tenants. This investment was short-lived, in part because President Magsaysay died in office. The second period was during the 1970s and early 1980s. The sustained increase in irrigation investment reflects the government's recognition of the social benefits of irrigation.

Irrigation is the most important form of government subsidy to rice farmers. Water rates have been low and the fees collected have not been set high enough to recover the cost of operation and maintenance of the irrigation systems. Thus, the government has had to subsidize the operations of the National Irrigation Authority.

The government's involvement in fertilizer marketing and pricing has been predicated on subsidizing the fertilizer purchases of food (i.e., rice and corn) farmers. The first demonstration of this effort was the fertilizer subsidy program for rice and corn farmers administered by the Agricultural Credit Administration during the late 1950s and early 1960s. It was during the early 1970s however, that the government took a much more active role in fertilizer pricing and marketing. The Fertilizer Industry Authority was established to regulate prices and the domestic production

and marketing of fertilizer. Later it was expanded into the Fertilizer and Pesticide Authority and its regulation activities included farm chemicals.

When fertilizer prices shot up during 1973-75, the government imposed price controls on fertilizer for rice and corn farmers and subsidized domestic fertilizer producers (and importers) for their losses caused by the price controls. In order to protect the domestic fertilizer industry (and reduce dependence on foreign sources for a critical input) FPA only allowed imports to the predetermined level required to meet expected requirements. This policy of subsidizing domestic fertilizer producers and allowing a few authorized importers to control imports continued through the 1970s and early 1980s despite the fall in world fertilizer prices in 1976.

The government's fertilizer policy, originally fashioned to help farmers, instead turned out to support domestic fertilizer producers, importers, and the government (through taxes) and to hurt farmers (see Appendix Table A2.2). At the same time, however, the policy did not encourage the domestic production of nitrogen fertilizer because there are no domestic sources of raw material for nitrogen fertilizer. Domestic production of urea, the largest and cheapest source of nitrogen, was actually discontinued after 1976; the domestic consumption requirement was filled up by imports. In effect, the fertilizer policy failed to encourage domestic production and failed to provide cheap inputs to the farmers.

Studies of fertilizer policy during the 1970s and early 1980s were very critical. As a result of these studies the Aquino government in 1986 completely liberalized the importation of urea and other non-phosphatic fertilizers and waived tariffs on these fertilizer imports. Import liberalization increased the number of fertilizer importers and set the domestic prices of urea and other non-phosphatic fertilizers at near parity

with border prices. The current fertilizer policy issue facing the Aquino government is what kind and how much government support or protection should be provided to the partly government-owned and highly indebted phosphatic fertilizer firm.

The government's first major attempt to provide institutional credit to farmers was the credit program of the Agricultural Credit and Cooperative Financing Administration (ACCF), administered through the Farmers' Cooperative Marketing Association (FACOMAS) during the early 1950s. The government also encouraged the establishment of rural banks in the 1950s. The most ambitious agricultural credit program of the government, however, was the Masagana-99 program for rice farmers during the 1970s. This program tied the provision of agricultural credit to extension services and a package of inputs. Similar credit and extension programs also were undertaken for other commodities, such as fish and vegetables during the 1970s. In addition, beginning in May 1975 the government required banks to allocate at least 25 percent of their loanable funds for agricultural credit, either through direct lending or through the purchase of eligible government securities and the commercial paper of entities engaged in agricultural projects.

The performance of the various agricultural credit programs has not been encouraging. Problems in repaying loans caused the demise of many FACOMAS and made ACCFA insolvent. The volume of Masagana-99 loans dropped from a peak of P1.3 billion covering 54 percent of rice farmers during 1974-75 to only P224 million covering 6 percent of rice farmers in 1982-83. The growing incidence of loan delinquency made more and more farmers ineligible for the loans. The repayment rates for the other supervised credit programs are even lower than those for Masagana-99 loans. Although the banks have complied with the agricultural credit quota, commercial

banks and thrift banks have complied overwhelmingly by issuing securities investments rather than direct loans to the agricultural sector. The share of agricultural loans to total bank credit declined from 18 percent in 1966 to 8.0 percent in 1983 (TBAC, 1985).

The less than encouraging results of the agricultural credit programs are not very surprising. These programs are ultimately viable only if agricultural production is profitable. Thus, credit subsidies cannot be expected to fully offset the adverse effect on profitability of government policies that unduly tax agricultural production. Equally important, the credit subsidies and allocations were undertaken at a time when interest rates were very low and sometimes negative due to administratively set nominal interest rates, inflation, and peso overvaluation. Such a cheap interest rate policy places the agricultural sector at a disadvantage because of the inherently higher transaction costs and risk of agricultural lending.

The Aquino government has adopted a market-oriented interest rate and agricultural credit policy and has avoided subsidizing agricultural credit. After the agricultural credit crunch between 1983-86 and two major droughts in 1983 and 1987, the government is being criticized for being too market-oriented and not acknowledging the social value of temporary credit subsidization.

#### Indirect Price Intervention

The impact of indirect price interventions on agriculture has been greater than that of direct interventions. Of the sources of indirect intervention, protecting the domestic manufacturing market has been used more than current account deficits.

The basic character of the protection system was formed during the 1950s under the system of import controls which was established during the

colonial economic regime when the Philippines had problems adjusting to independence. Under reciprocal free trade with the U.S. before World War II, the Philippines had become heavily dependent on the U.S. market for its exports of sugar, copra and other primary commodities, while the diversification of its economy had been retarded by the free entry of American manufactures. Debates over the timing and conditions of independence--and even over its desirability--focused on how to wean the economy from dependence on the U.S. market and how to promote industrialization.

With independence in 1946 came the Bell Trade Act, which provided for eight years of continued reciprocal free trade followed by 20 years of gradually declining trade preferences. The Act also limited Philippine sovereignty in economic policy making by proscribing export taxes and requiring the permission of the American president to change the value of the peso vis-a-vis the dollar or to suspend its convertibility.

The Philippines faced the immediate postwar years with a devastated economy accompanied by widespread hunger and deprivation. U.S. aid to and expenditures in the Philippines supported large trade deficits, and the available foreign exchange was used to permit a recovery of consumption rather than for development investment. By the end of 1949, the Philippines faced a severe balance of payment crisis. The immediate causes were a sharp drop in U.S. expenditures, a steep fall in copra prices, recession in the U.S., election spending and the flight of capital caused by speculation about a devaluation of the peso. With the approval of the IMF and the U.S. President, foreign exchange controls were instituted as a temporary measure by the Central Bank to protect the nations's reserves. In 1950, another import control law was passed for a limited period; when Congress refused to extend it in 1953, the Central

Bank assumed the responsibilities for controlling imports through foreign exchange licensing. This system persisted until the end of the decade, with some modifications.

The immediate causes of the balance of payments crisis have been noted above. A more fundamental cause of the disequilibrium was the peso-dollar exchange rate that was maintained at the pre-war level despite high wartime inflation. This made the Philippines appear to be unable to compete in even the major primary exports. It was believed these could sell profitably only with preferential treatment in the protected American market. The failure of investors to respond to subsidies offered to new industries reflected the artificially cheap prices of duty-free dollar goods converted into overvalued pesos. While there was widespread concern over the lack of competitiveness of Philippine goods, this was generally attributed to economic backwardness rather than to the exchange rate, which was taken for granted.

What lay behind this attitude toward the exchange rate? No doubt the Bell Trade Act was an inhibiting factor, although permission to control the exchange rate still was sought and granted. Perhaps it was thought the move would be opposed because of the effect on the value of existing U.S. investments in the Philippines. Reinforcing this might have been a desire on the part of Philippine leaders to maintain an image of stability for the investment climate. Finally, however, even when the provision was eliminated in 1955 there was no stampede to devalue the peso. In fact, Central Bank Governor Cuaderno cites opinion from an influential newspaper that says the provision should not be repealed or irresponsible leaders would devalue the peso.

It is possible that Cuaderno, the most influential policy maker of the 1950s, was not himself bothered by the provision since it strengthened

his hand in defending a fixed exchange rate. Also reinforcing his unequivocal support of exchange rate stability was the fear of inflation, the fear of exchange market instability if the peso should slip, and the commitments in the Central Bank charter and to the IMF. Thus, despite arguments from influential members of the sugar block, the Philippines remained committed to the overvalued peso until close to the end of the decade. However, overvaluation implies some policy measures to defend it. The provision for free trade with the U.S. for eight years, to be gradually phased out thereafter, made tariff protection impractical until late in the decade. It is not surprising, then, that import controls, adopted initially as an emergency balance of payments measure, remained for a decade to defend the overvaluation of the peso.

Import controls soon became recognized as an instrument for protecting domestic industry in order to spur industrialization and reduce the economy's dependence on primary exports. Industrial protection was never rationalized, however, as an industrial development plan. Instead, the priority for industrial development came inadvertently as an adjunct to the priorities set for the use of foreign exchange. The latter was rationed on the basis of essentiality in use -- not on the basis of comparative advantage in production. Hence, import controls were administered in order of increasing restrictiveness for less essential products. "Essential" goods had priority over "semi-essential" and "non-essential" goods, and producer goods had priority over consumer goods. The result was a system that favored most the production of least essential consumer goods with the least proportion of domestic value added. The cost of saving foreign exchange under such a system was exorbitant at the same time that efficient foreign exchange earners (new exports), and efficient foreign exchange savers (underprotected import substitutes) were handicapped by the overvaluation of the peso that the system defended.

As industrialization proceeded and became more characterized by import substitution at the finishing stages of production, the political power of vested interests in support of the controls system strengthened. The allocation of import licenses to favor Filipino traders also lent support to the system.

On the other side, the system was criticized for favoritism and corruption in its administration. Smuggling and under-reporting of export earnings increasingly undermined the system. The tightening of controls on exports to prevent under-reporting added another impediment to the expansion of new exports. By the end of the decade shortages of needed supplies became more common as controls tightened.

Finally, the controls simply became unpopular with ordinary consumers. Although the system made all foreign goods seem artificially cheap, these goods were licensed to privileged importers who sold them at high prices. In election years incumbent administrations relaxed controls to attract popular support. The party out of power attacked the controls system for the same reason.

The failure of the controls system to keep pressure off the balance of payments led to various measures that, in effect, eroded the fixed exchange rate policy. Exporters of certain products were allowed to use their earnings for essential imports outside of the exchange control system. Margin deposit requirements on import letters of credit were established. Direct fees and taxes were levied on the sale of foreign exchange. Together these produced a system of multiple effective exchange rates that were varied in response to political and balance of payments pressures (Baldwin, Chapter 2).

In anticipation of the phasing out of free trade with the U.S., a tariff act was passed in 1957. This act established an escalating

structure of duties based on the same essentiality criteria as the import controls system. This, together with the various taxes and margin requirements on the purchase of foreign exchange, tended to reduce the gain from attaining import licenses and, therefore, the strength of one source of support for the system.

Ultimately, however, the system failed because it could not solve the balance of payments problem. The import dependence of the new industries and their extreme inefficiency in saving foreign exchange placed an ever greater burden on the primary exporting sector which in the end it could not bear (ILO, Chapter 1). By the end of the decade there was no further room for tightening restrictions on non-essential imports. The system could no longer serve its purpose.

The U.S. government and the IMF apparently played a role in hastening the decision of the Philippine government to decontrol imports and devalue the peso. According to one account, when Governor Cuaderno sought new loans in Washington in 1958, he was told by the IMF that his proposal for a 25 percent tax on foreign exchange was unacceptable to the U.S. government under the revised Trade Act agreement and that the condition was, instead, devaluation and decontrol (Villegas, p. 43). The next year Congress mandated gradual decontrol and Cuaderno, himself, reluctantly drew up the plans. In 1961, the Liberal Party won the presidency by making corruption in the controls system a major issue in its campaign. In 1962 the new president, Macapagal, bypassed the Cuaderno plan and implemented immediate and full decontrol. The previously floating free market rate was stabilized at P.3.90 per dollar and this became the official parity in 1965.

Now the tariff system was the principal instrument for intervention. Its structure provided protection similar to that of the

import control system and this feature was strengthened by tariff adjustments to mitigate the effects of removing the controls. Nevertheless, the overall force of protection of the domestic market was lessened, as evidenced by the extent of the devaluation.

At that time, it was popularly believed that the Philippines had at last opted for a liberal trade policy regime. However, later studies of the structure of protection revealed a continuing bias toward import substitution and against exports. Therefore, it is not surprising that industrial growth was sluggish and remained dependent on the primary sector.

In the second half of the 1960s the Marcos regime adopted a more expansionary monetary-fiscal policy which brought the balance of payments under new pressure. Spending for the President's re-election campaign in 1969 was at an all-time high, and another crisis was at hand. In the meantime, some modest controls on imports had been reinstated and external borrowing had risen sharply, including borrowing from the IMF and WB.

In his campaign Marcos had promised no devaluation, but when the consortium of lenders formed by the WB made the floating of the peso a condition for loan negotiations, Marcos capitulated (Villegas, p. 46). The rate rose to P6.40 by the end of the year.

By this time the technocrats finally understood that the Philippine development effort could not succeed unless the industrial sector was able to earn foreign exchange through exports. The Investment Incentives Act was followed by the Export Incentives Act; both contained subsidies to non-traditional exports in the form of tax concessions. In addition, an export processing zone and a system of bonded warehouses were established to promote non-traditional exports. As a result of these

measures, new exports grew more rapidly though still far slower than some East Asian neighbors. Moreover, growth was concentrated first in garments and later in semi-conductors, both of which were heavily dependent on imported inputs.

The technocrats viewed this promotion of new exports as a form of trade liberalization--i.e., as a substitute for a thorough reform of the protection system. In fact, the effort fell far short of offsetting the bias against exports (Bautista, Power and Associates, pp. 153 ff). As a result, growth was retarded by the same inefficient allocation of investment under the same distorted incentive system inherited from the 1950s. The economy remained overly dependent on a few primary exports, as the commodity price collapse of the early 1980s was to demonstrate.

During the second half of the 1970s, the Philippines' current account had large deficits. Therefore, it is important to look at this form of indirect interventions.

When the first OPEC oil price shock occurred, the Philippines had ample external reserves and a modest external debt. The technocrats opted to maintain growth during the ensuing world recession through countercyclical government spending. This added to the current account deficit, but the Philippines could afford such a strategy at that time. Instead of reducing its external borrowing where the world came out of the recession, however, the Philippines continued to borrow heavily--especially re-cycled petro dollars from commercial banks. The banks were eager to lend, interest rates were low, and the WB, IMF and the consortium endorsed it. The ratio of investment to GNP reached an all-time high of around 30 percent.

Thus, when the second oil price shock came in 1979-80, the Philippines' external debt already was high and its reserve position much

weaker than in 1973-74. Yet the technocrats again chose to maintain growth in the face of world recession. This time the result was disaster.

The disaster for the Philippines had two fundamental roots. The first was the inability to diversify the economy and reduce dependence on sugar, coconuts and other primary exports--a goal that had been recognized as essential even before independence. The second was the continuing inefficient allocation of investment of what had long been high levels of saving in relation to GNP. Both of these failures stem from the same cause --the excessive protection of the domestic market and the concomitant bias against export diversification. Added to this, however, was the increasing tendency to borrow abroad or to guarantee foreign loans for investment designed to augment the wealth and power of political leaders. Much of the savings and investment of the 1970s was wasted on "non-performing assets".

The most recent effort to reform the trade policy regime was initiated at the end of the 1970s--before the economic collapse and debt crisis. Tariff reform had been proposed by the Tariff Commission early in the 1970s, but this was foregone in favor of subsidies to promote exports. By the end of the decade the technocrats had come to realize that the latter strategy had not succeeded and that to offset the bias of the protection system adequately would require a fiscal program that would be unmanageable. Moreover, subsidizing exports no longer was feasible with the projected accession to GATT and with the United States reacting more strongly to such measures as its trade deficit grew. The technocrats were at last ready to discuss real reform of the system.

In 1978, a Presidential Decree empowered the Tariff Commission to make a sweeping review of the tariff structure with an eye toward reform. The following year preliminary talks were held with WB representatives concerning tariff reform as part of a structural adjustment loan program.

Gradual removal of import controls (which had been reintroduced in the 1970s) was to complement the tariff reform. The collapse of the economy in the early 1980s and the debt crisis that followed have handicapped efforts in this direction. Nevertheless, a first phase of tariff reform was somewhat successful in reducing excessive protection. Import controls were scheduled to be phased out by 1988.

The reform movement, however, is no longer in the hands of the technocrats. The newly elected Congress (May 1987) will strongly influence the direction of economic policy in the future. It is too early to predict if the new legislators have learned any lessons from the past. Whether or not they have, they face some powerful vested business interests as a result of three and a half decades of excessive protection and peso overvaluation.

References

- Abad, Anita G. The Tobacco Industry: Comparative Advantage and the Impact of Economic Policies. Unpublished MS Thesis, UPLB, 1982.
- Abrera, A. "Philippine Poverty Thresholds" in M. Mangahas (ed.) Measuring Philippine Development. Development Academy of the Philippines, 1976.
- Abueva, Jose V. and Raul de Guzman. Foundations and Dynamics of Filipino Government and Politics Bookmark, Manila, 1969.
- Amatong, J. G. Beltran and E. Boncodin. "Explicit Budgetary Contributions of National Government to Government Corporations" Mimeographed, PIDS, 1986.
- Aspiraksirikul, S. Rice Trade Policy as it Relates to National Objectives in the Philippines. MA Thesis, University of the Philippines, 1976.
- Baldwin, R. Foreign Trade Regime and Economic Development: The Philippines NBER-Columbia University Press, 1975.
- Bautista, R. "Rural Labor Market Adjustment to Differential Technical Change in Favorable and Unfavorable Rice-Based Villages in the Philippines" IRRRI Agricultural Economics Department Workshop Paper, March 1987.
- \_\_\_\_\_. "Effects of Major Currency Realignment on Philippine Merchandise Trade" Review of Economics and Statistics 1977, pp. 152-160.
- \_\_\_\_\_. "Production Incentives in Philippine Agriculture: Effects of Trade and Exchange Rate Policies," Draft of Research Report of International Food Policy Research Institute, 1986.
- \_\_\_\_\_, J. Power, and Associates. Industrial Promotion Policies in the Philippines. Philippine Institute for Development Studies, 1979.
- Bouis, H. Rice Policy in the Philippines. Ph.D. Dissertation, Stanford University, 1982.
- Bruce, R.C. "Land Use Mapping Under Different Agroclimatic Environments," in L.A. Gonzales, Philippine Agricultural Diversification: A Regional Economic Comparative Advantage Analysis, IFPRI Report to the Asian Development Bank, May 1984.
- Burley, T.M. The Philippines: An Economic and Social Geography. London G. Bell & Sons Ltd., 1972.
- Business Day. "Sugar: Sweet Taste of Power" January 20, 1970, p.4.
- Cabanilla, L.S. Economic Incentives and Comparative Advantage in the Livestock Industry, Ph.D. Dissertation, UPLB, 1983.

- Canlas, D., et al. An Analysis of the Philippine Economic Crisis. University of the Philippines, 1985.
- Castillo, G. Beyond Manila: Philippine Rural Problems in Perspective, IDRC, 1979.
- Clarete, R. and J. Roummaset. "The Philippine Coconut Industry" Philippine Institute for Development Studies Working Paper, 1983.
- Corpus, M. Supply Response of Corn to Price in the Philippines, 1957-1974, Unpublished M.S. Thesis, University of the Philippines at Los Banos, 1977.
- Cruz, C., R. Siy and W. Cruz. "Issues in Irrigation Water Management in the Philippines" in APWG Policy Issues on the Philippine Rice Economy and Agricultural Trade, UPLB-CDEM-CPDS, 1987.
- David, C.C. "Economic Policies and Philippine Agriculture" PIDS Working Paper 83-02. PIDS, Manila.
- \_\_\_\_\_. "The National Food Authority" Mimeographed, IRRI, 1984.
- \_\_\_\_\_, R. Barker and A. Palacpac. "Productivity in Philippine Agriculture" Department of Agricultural Economics, International Rice Research Institute, 1984.
- de Leon, M.S.J. "Government Expenditures and Agricultural Policies in the Philippines, 1955-1980" Working Paper No. 83-06 Philippine Institute for Development Studies.
- Drilon, J. "Rice Price Stabilization and the Rice and Corn Administration" Journal of Philippine Public Administration, July 1967, pp. 230-243.
- Dumayas, E. 1983. Supply Response Study of Coconut in the Philippines, Unpublished M.S. Thesis, Kansas State University, 1983.
- Ferrer, R. "Some Notes on Rent Seeking" Mimeographed, UP School of Economics, 1986.
- Flieger, W. "Internal Migration in the Philippines During the 1960s" Philippine Quarterly of Culture and Society, Vol. V (1977), pp.199-231.
- Golay, F. The Philippines: Public Policy and National Economic Development Ithaca, N.Y.: Cornell University Press, 1961.
- Gopinath, A. Manuel L. Quezon: The Tutolary Democrat, New Day, Quezon City, 1987.
- Habito, C. "Policy Issues in the Coconut Industry: A Survey" Paper Presented at the Workshop on Agricultural Policy, UP Los Banos, May 1985.
- Hayami, Y., et al. "Agricultural Growth Against Land Resource Constraint: Philippine Experience" Australian Journal of Agricultural Economics, Vol. 20, No. 3, 1976.

- Hill, Hal, and S. Jayasuriya "The Philippine Growth, Debt and Crisis" Working Paper No. 85/3. Development Studies Centre, The Australian National University, 1985.
- Hooley, R. Productivity Growth in Philippine Manufacturing: Retrospect and Future Prospects, Philippine Institute for Development Studies, 1984.
- Hooper, R. and J. Morton. "Fluctuations in the Dollar: A Model of Nominal and Real Exchange Rate Determination" International Finance Discussion Paper No. 168 (1980).
- Huke, R.E. Shadows on the Land: An Economic Geography of the Philippines Bookmark Inc., Manila, 1963.
- ILMS, The Coconut Subsidy Program: Who Pays, Who Benefits? Manila: Institute for Labor and Manpower Studies, 1983.
- International Labor Office. Sharing in Development: A Program of Employment Equity and Growth for the Philippines, Geneva, International Labor Office, 1974.
- Intal, P. Jr. Three Essays on the Philippine External Sector. Unpublished Ph.D. Dissertation, Yale University, 1983.
- \_\_\_\_\_. "Anatomy of the Philippine BOP Problem" Project Working Paper, PIDS, February 1984.
- \_\_\_\_\_. "Philippine Public Finance During the 1970s: A Review" PIDS Project Working Paper, November 1985.
- \_\_\_\_\_. "The Philippine Trade and Exchange Rate Regime" Discussion Paper No. 87-02 Department of Economics, University of the Philippines at Los Banos, 1987a.
- \_\_\_\_\_. "Government Interventions and Rent Seeking" Discussion Paper No. 87-04, Department of Economics, University of the Philippines at Los Banos, 1987b.
- \_\_\_\_\_. "Key Themes for National Development: A Strategic Industrial and Trade Policy" The Manila Chronicle, December 10, 1987 (1987c).
- \_\_\_\_\_, C. David and G. Nelson, "Government Policies and Agricultural Performance: A Review and an Agenda for the 1980s." Working Paper No. 85-01, Center for Policy and Development Studies, UP Los Banos, May 1985.
- Kalirajan, K.P. and J.C. Flinn. "Input Demand and Output Supply Response of Filipino Rice Farmers", International Rice Research Institute (IRRI) Agricultural Economics Department Paper 83-16, 1983.
- Khan, M. "Import and Export Demand in Developing Countries", IMF Staff Papers November, 1974.

- Lal, D. "Real Wages and Exchange Rates in the Philippines, 1956-78," World Bank Staff Working Paper No. 604, World Bank, Washington, 1983.
- Lamberte, M., et al. "A Review and Appraisal of the Government Response to the 1983-84 Balance of Payment Crisis." Philippine Institute for Development Studies Staff Paper Series 85-06, PIDS, Manila.
- Lantican, F. and L. Unnevehr. "Rice Price and Marketing Policy," Paper presented at the Workshop on Agricultural Policy, May 3-4, 1985.
- Ledesma, A. Landless Workers and Rice Farmers: Peasant Subclasses Under Agrarian Reform in the Philippines. Los Banos, International Rice Research Institute, 1982.
- Luna, N. de "The Reality of the Cojuangoo Empire," Business Day, April 17, 1986, p. 11.
- Macaranas, F. Development Issues Concerning the Impact and Incidence of Agricultural Taxation in the Philippines. Unpublished Ph.D. thesis, Purdue University 1975.
- Makil, L., and P. Fermin. Landless Rural Workers in the Philippines: A Documentary Survey, Quezon City: Institute of Philippine Culture, Ateneo de Manila University, 1978.
- Marcial, G. "The Politics of Rice", The Chronicle Magazine, July 20, 1963.
- Mangahas, M., et al., 1967. Production and Market Relationship for Rice and Corn in the Philippines, IRRI Bull. 9.
- Marcos, F. "Sugar Industry Crisis Self-Perpetuating". Speech before the National Federation of Sugarcane Planters, February 18, 1967.
- \_\_\_\_\_. Notes on the New Society, II Marcos Foundation, 1976.
- \_\_\_\_\_. "A Climate of Stability of the Sugar Industry". Address before the 17th Congress of the International Society of Sugarcane Technologists, February 4, 1980, Sugar News, February, 1980.
- McCoy, A. "In Extreme Unction: The Philippine Sugar Industry" in Third World Studies Program. Political Economy of Philippine Commodities University of the Philippines, 1983.
- Mears, L., et al. Rice Economy of the Philippines. Quezon City: University of the Philippines Press, 1974.
- Nasoi, R., et al., 1982. Supply and Demand Analysis for Selected Crops and Livestock in the Philippines, Center for Policy and Development Studies and Philippine Council for Agriculture and Resources Research and Development. Los Banos, Laguna.
- NEDA, Coconut Industry Study, Manila, 1985.
- NEDA, Study on Government Assistance to Low Income Groups with Inadequate Access to Institutional Credit (Draft) April 1986.

- Nelson, G. and M. Agcaoili, "Impact of Government Policies on Philippine Sugar" PIDS Working Paper 83-04, PIDS, Manila.
- Oshima, H., et al. "Rising National Income Per Worker and Falling Real Wages in the Philippines in the 1970s", Conference on Development Alternatives and Prospects. University of the Philippines, December 5-6, 1986.
- Perez, A. "Spatial Mobility and Development in Retrospect", Work Agreement Paper No. 8, August 1985, Population Institute, University of the Philippines.
- Public Administration Service, "Organization and System Study for the National Food Authority", Draft Final Report to the Asian Development Bank (ADB), December 1984.
- Quisumbing, A. Estimating the Distributional Impact of Food Market Intervention Policies on Nutrition. Ph.D. Dissertation, University of the Philippines, 1985.
- \_\_\_\_\_, and C. Cruz "Rural Poverty and Poverty Programs in the Philippines". In APST, Agenda for Action in the Philippine Rural Sector, Los Banos and Manila, 1986.
- Rama, N. "Rice, Presidents and Politics", The Philippine Free Press, August 5, 1967, p. 5.
- Sacerdoti, G. "Cracks in the Coconut Shell", Far East Economic Review, January 8, 1982, pp. 42, 48.
- Sangalang, J. "The Coconut Replanting Program", Center for Policy and Development Studies Working Paper 85-09, CPDS, UP Los Banos, 1975.
- Sardido, M. and R. Evenson. "Public Investment in Agricultural Research and Extension in Philippines", Working Paper, Regional Productivity of Philippine Agriculture, UP Los Banos 1975.
- Schiff, M. "Real Exchange Rate", Note 1, January 1986.
- Senga, K. "A Note on Industrial Policies and Incentive Structures in the Philippines: 1949-1980", Philippine Review of Economics and Business, Vol. 20, Nos. 3 and 4, September/December 1983.
- Sicat, G. "A Historical and Current Perspective of Philippine Economic Problems". Address delivered before the 21st Annual Meeting of the Philippine Economic Society, December 1984.
- Sison, J. "Irrigation Policy in the Philippines -- Future Directions", Diamond Jubilee Professorial Lecture, November 29, 1985. CDEM, UP Los Banos, College, Laguna.

- Tan, E. "Philippine Monetary Policy and Aspect of the Financial Market: A Review of Literature" in PIDS Survey of Philippine Development Research I. PIDS, Manila, 1980.
- \_\_\_\_\_. "The Structure of Protection and Resource Flows in the Philippines" in Industrial Promotion Policies in the Philippines by R. Bautista, J. Power, et al., PIDS, 1979.
- \_\_\_\_\_. "The Philippines: the Structure and Causes of Manufacturing Sector Protection" in C. Findlay and R. Garnaut (eds.) The Political Economy of Manufacturing Protection: Experiences of ASEAN and Australia. Sydney, Allen and Unwin, 1986.
- Technical Board for Agricultural Credit. Agricultural Credit Study, April 1985. Manila.
- Tidalgo, R. and E. Esguerra, "Philippine Employment in the 1970s" PIDS Working Paper 82-02. PIDS, Manila, July 1982.
- Tuiza, E. "Some Measures of Comparative Advantage in Mango Production, Philippines, 1983". Class term paper, 1984.
- Treadgold, M. and R. Hooley. "Decontrol and the Redirection of Income Flows: A Second Look", Philippine Economic Journal, 1976.
- Unnevehr, L. "The Effect and Cost of Philippine Government Interventions in Rice Markets", Working Paper No. 9, Rice Policies in Southeast Asia Project. IRRI-IFPM-IFDC, December 1983.
- \_\_\_\_\_, and A.M. Balisacan. "Changing Comparative Advantage in Philippine Rice Production" PIDS Working Paper 83-03, PIDS, Manila.
- \_\_\_\_\_, and G.C. Nelson. "Structural Transformation in Philippine Livestock and Corn Markets" Mimeographed Paper, June 1985.
- Valdez, E. "Trade Policy and Its Effect on the External Agricultural Trade of Chile, 1945-1965", American Journal of Agricultural Economics, 55(2), May 1973.
- Valiente, et al. "Coconut Socio-Economic and Marketing Study", Special Studies Division, Department of Agriculture.
- Villegas, E. Studies in Philippine Political Economy, 2nd ed., Silangan Publishers, Manila, 1984.
- Williams, R., et al. International Capital Markets Developments. IMF, Washington, D.C.
- World Bank. The Philippines Recent Trends in Poverty, Employment and Wages, June 1985.
- \_\_\_\_\_. World Bank Development Report, 1984.



Table 1.1  
Basic Indicators

YEAR	TOTAL (in million)	POPULATION				URBAN as % of TOTAL		RURAL <sup>e/</sup> (in million)
		URBAN (in million)		Concentrated Ratio <sup>e/</sup>	Primary Index <sup>d/</sup>	I	II	
		I a/	II b/					
1948	19.234	5.184			2.42	27.0		14.051
1960	27.088	8.073	7.802	38	2.50	29.8	28.8	19.015
1970	36.684	12.069	10.739	32	2.75	32.9	29.3	24.616
1980	48.098	17.941	14.632	26	2.98	37.3	30.4	30.158

YEAR	LABOR FORCE (in million)	LABOR FORCE PARTICIPATION RATE (in %)	LITERACY RATE (10 years old and over)	ARABLE LAND PER PERSON EMPLOYED IN AGRICULTURE <sup>h/</sup> (in hectare/person)
1948			59.8	n.a.
1960	9.995	57.6 <sup>f/</sup>	72.0	0.94
1970	12.911	50.0 <sup>f/</sup>	83.4	0.72
1980	17.308	59.8 <sup>f/</sup>	89.7	0.53

Table 1.2  
Macroeconomic Indicators

Year	Real GNP (millio pesos)	Growth Rate (%)	Real GNP per capita (Pesos)	Growth Rate (%)	% Share to GNP of							
					Investment		Gross Domestic Savings	Imports		Exports		
					†	††		†	††	†	††	
1955	23,709	6.4	1,006	3.3	14.8	16.2	13.0	13.3	27.4	13.0	22.4	
1960	30,151	1.4	1,101	-1.6	16.2	17.2	16.6	10.6	20.7	10.8	16.9	
1965	39,520	5.0	1,244	2.0	20.9	21.1	21.8	17.3	19.8	17.3	22.2	
1970	50,035	4.3	1,358	1.3	21.5	21.7	21.0	19.7	20.0	19.4	17.5	
1975	68,530	6.2	1,622	3.8	31.2	27.7	26.0	25.4	19.7	18.6	14.5	
1980	92,629	4.4	1,918	1.8	30.6	28.7	25.5	26.0	21.0	20.4	19.6	
1985	87,766	-4.2	1,604	-6.7	14.4	12.7	15.4	18.2	16.0	21.3	22.0	
1986	89,094	1.5	1,591	-0.8	13.4	11.4	18.8	18.9	19.7	25.2	26.4	
Average												
1950-55		7.7		4.5	14.7	15.1	14.6	13.0	26.1	13.9	22.5	
1956-60		5.0		1.9	16.6	18.1	16.1	11.1	22.3	10.3	17.2	
1961-65		5.5		2.5	19.6	19.5	20.1	16.0	19.0	15.3	19.4	
1966-70		4.8		1.8	20.9	22.3	19.7	18.0	22.0	16.5	19.6	
1971-75		6.5		3.6	24.3	22.9	24.0	21.5	19.0	19.9	16.7	
1976-80		6.2		3.4	30.1	28.2	25.4	24.0	20.4	18.7	17.7	
1981-85		-1.0		-3.3	24.4	22.4	17.2	23.1	19.5	20.1	20.1	

Notes: † Using current prices †† Using constant 1972 prices

Sources of Data: 1951-1974 - NEDA, National Income Accounts (Link Series);  
1975-1984 - NEDA, Philippine Statistical Yearbook, 1987.

Table 1.3  
Agricultural Production, Exports and Imports

	% SHARE OF AGRICULTURE VALUE ADDED TO GNP					AGRICULTURAL EXPORTS‡		AGRICULTURAL IMPORTS‡	
	(In Nominal Terms)		(In Real Terms)			Level	% Share	Level	% Share
	1	2	3	4	5	(M\$)	to Total Exports	(M\$)	to Total Imports
1950	20.2	6.3	30.1		23.2				
1951	19.8	6.4	31.5		24.2				
1952	18.6	6.3	28.5		23.3				
1953	18.7	7.2	28.8		24.6				
1954	14.9	8.1	28.8		24.5				
1955	14.6	8.5	29.7		23.7				
1956	14.9	7.1	28.6		22.5				
1957	14.3	6.9	27.8		22.2				
1958	14.4	7.2	27.3		22.4				
1959	14.3	6.5	27.6		22.4				
1960	14.8	5.2	26.9		22.6				
1961	14.8	5.2	26.5		21.1				
1962	13.6	4.6	25.2		22.3	355.4	63.3	147.9	25.2
1963	13.1	4.5	25.9		21.5	507.0	62.3	179.0	29.0
1964	13.2	5.1	26.0		21.5	532.9	61.4	156.9	20.1
1965	13.1	5.3	25.2		20.6	479.4	60.4	188.7	22.6
1966	13.2	5.5	25.6		19.7	452.9	52.6	143.7	16.5
1967	12.9	5.2	26.2	15.9	19.5	428.4	48.0	180.6	17.0
1968	13.7	5.1	28.3	15.9	19.4	458.9	47.7	168.3	14.0
1969	14.1	5.2	28.8	15.3	18.4	399.3	40.6	159.7	13.5
1970	15.6	4.3	28.2	15.6	20.4	487.0	42.5	144.1	12.4
1971	16.3	4.6	29.8	15.5	20.1	572.0	48.1	177.0	14.0
1972	16.0	4.5	28.9	16.0	19.0	535.8	49.0	200.5	15.7
1973	17.3	4.2	29.4	14.8	17.4	782.1	42.6	232.8	14.6
1974	16.9	4.2	29.5	15.3	18.7	1559.4	57.2	347.0	11.0
1975	18.0	3.5	28.9	16.4	19.9	1276.5	55.6	355.4	10.3
1976	17.4	3.2	27.8	15.4	21.7	1237.6	48.1	349.1	9.6
1977	16.7	3.2	27.2	16.3	21.3	1580.9	50.2	371.2	9.5
1978	16.2	3.1	26.7	16.1	21.5	1438.8	41.9	380.7	9.0
1979	15.7	3.0	25.5	15.0	21.4	1688.4	36.7	442.8	7.2
1980	13.7	2.8	23.3	16.2	21.5	1977.4	34.2	578.4	7.5
1981	13.3	3.0	22.9	16.1	20.9	1891.5	32.9	640.1	8.1
1982	13.2	3.1	22.9	16.3	20.7	1575.7	31.4	721.0	9.4
1983	12.5	3.3	22.3	15.2	19.0	1446.0	28.9	665.6	8.9
1984	16.3	3.9	26.1	16.8	19.8	1584.0	29.4	519.1	8.6

NOTES:

- 1 - Gross Value Added for Crops only
- 2 - Gross Value Added for Poultry and Livestock
- 3 - Gross Value Added for Agriculture, Fishery and Forestry
- 4 - Gross Value Added for Agricultural Crops at 1972 prices from the National Income Accounts
- 5 - Value of Agricultural Crop Production at 1972 prices from the Philippine Statistical Yearbook
- ‡ - Includes Agricultural Crops, Poultry and Livestock only

Sources of Data: NEDA, National Income Accounts  
NEDA, Philippine Statistical Yearbook  
FAC, Trade Yearbook

Table 1.4  
Growth Performance of the Agricultural Sector, 1950-1984  
(Five year annual averages, in percent)

A.													
	Agriculture, Fishery & Forestry	Agricultural Crops				Rice		Corn		Sugarcane		Coconut	
		GVA		Q		GVA	Q	GVA	Q	GVA	Q	Q	
		BVA	Q	BVA	Q	BVA	Q	BVA	Q	BVA	Q	A*	B*
		-----											
1950-54	8.1		9.6 <sup>a/</sup>		5.2 <sup>a/</sup>		8.7 <sup>a/</sup>		20.7 <sup>a/</sup>			6.7 <sup>a/</sup>	
1955-59	8.0		3.9		3.2		5.9		7.3			3.4	
1960-64	2.3		4.2		0.9		5.1		3.5			7.1	
1965-69	5.1	3.2 <sup>b/</sup>	1.8	6.2 <sup>b/</sup>	3.1	10.4 <sup>b/</sup>	6.1	1.3 <sup>b/</sup>	0.6	-9.3 <sup>b/</sup>	0.3	-5.0	
1970-74	3.9	6.2	6.6	2.8	6.6	5.5	6.0	11.9	10.7	4.0	5.1	4.6	
1975-79	5.3	7.5	9.3	5.2	5.2	5.7	6.6	0.7	-0.7	12.7	17.8	9.9	
1980-84	2.4	2.0	-0.9	1.6	0.9	0.8	1.7	0.9	0.5	-5.1	-6.4	2.6 <sup>c/</sup>	

B.									
	Food		Non-Food		Importables	Exportables	Non-tradables		
	with	w/out	with	w/out					
	coco	coco	coco	coco					
1951-54	7.9	10.8	4.8	6.4	5.8	12.6	19.7		
1955-59	3.8	4.0	7.4	4.2	3.7	4.7	2.6		
1960-64	4.2	3.8	4.9	6.6	2.5	6.7	2.4		
1965-69	1.9	2.2	-1.5	-0.3	3.6	0.4	0.4		
1970-74	6.7	7.1	3.9	4.8	6.2	8.0	4.6		
1975-79	9.5	8.3	2.4	15.3	6.2	11.0	14.1		
1980-84	-0.4	0.7	4.4	-5.1	1.0	0.04	-5.0		

Notes: GVA is real gross value added; Q is production.

A\* - Based on the production estimates of the Bureau of Agricultural Economics, as published in the Philippine Statistical Yearbook.

B\* - Based on an indirect estimate of annual copra production as the sum of copra exports, manufactured oil (in copra terms) for domestic and export markets, and copra used for homemade oil. Source of data: UCAP and PCA given in NEDA, Coconut Industry Study, 1985, p. 2-5; 2-61.

<sup>a/</sup> Average for 1951-54 only.

<sup>b/</sup> Average for 1968-69 only.

<sup>c/</sup> Average for 1980-83 only.

For the time series data of the production indices during 1950-1984, see Appendix Table A1.1.

Table 1.5  
Per Capita Food Production and Apparent Consumption (Pesos per person  
at 1977-1978 prices)

CROP YEAR	LEVELS		INDEX (1977-78 = 100)	
	Per Capita Production (Pesos)	Per Capita Consumption (Pesos)	Per Capita Production	Per Capita Consumption
1969-70	635	437	78.21	89.0
1970-71	665	430	81.9	87.6
1971-72	677	449	83.5	91.5
1972-73	637	420	78.5	85.5
1973-74	654	419	80.6	85.3
1974-75	748	444	92.2	90.4
1975-76	814	479	100.4	97.6
1976-77	808	496	99.6	101.0
1977-78	811	491	100.0	100.0
1978-79	792	503	97.6	102.4
1979-80	803	512	99.0	104.3
1980-81	801	508	98.7	103.5
1981-82	788	505	97.1	102.9
1982-83	729	479	89.9	97.6
1983-84	663	475	81.7	96.7

Source of Basic Data: MAF Statistical Handbook in Agriculture (National Data)  
1985, Tables A.6, A.12.

Table 1.6  
Growth Rates of Output, Area and Yield (in percent)

	1951-55	1956-60	1961-65	1966-70	1971-75	1976-80	1981-85
<b>1. Grains</b>							
Rice							
Output	4.3	3.3	1.4	5.8	3.3	5.8	1.0
Area	3.8	4.6	-0.6	-0.5	3.2	0.03	-2.4
Yield	0.5	-0.9	2.0	6.6	-0.3	5.8	3.4
Corn							
Output	6.7	9.1	2.4	8.9	5.7	6.1	2.0
Area	9.1	6.1	1.0	4.8	5.2	1.0	0.8
Yield	-1.7	4.3	1.7	4.1	0.3	4.8	1.2
<b>2. Traditional Export Crops</b>							
Coconut							
Output	8.6	0.1	7.0	2.5	10.7	11.3	-8.1
Area	0.1	1.4	8.7	3.4	3.9	6.6	0.9
Yield	8.4	-1.2	-1.5	-0.7	6.7	4.4	-9.0
Sugarcane							
Output	15.9	8.4	2.6	5.5	5.8	-0.3	-2.2
Area	16.0	-1.8	8.3	1.1	9.3	-5.3	-0.2
Yield	-0.5	10.0	-4.2	4.4	-2.9	5.4	-1.2
Tobacco							
Output	3.7	17.1	-5.3	7.4	-1.0	-5.3	5.5
Area	3.7	13.6	-4.0	3.1	-0.3	-6.2	-2.2
Yield	0.04	4.0	-1.9	3.6	-0.6	0.7	5.2
Abaca							
Output	7.4	-1.4	7.5	-1.2	2.1	3.8	-11.4
Area	-5.5	-3.8	2.9	-2.7	1.1	6.5	-6.1
Yield	12.8	2.9	5.1	1.3	1.2	-1.0	-5.5

Table 1.7  
Farms: Number, Size and Tenure, Philippines

	Level		Tenorial Distribution		
	Number (Million)	Area (Million has)	Number (Million)	Area (Million has)	
A. 1971					
TOTAL	2.35	8.49	100	100	
Full-owner	1.36	5.34	58.0	62.9	
Part-owner	0.27	0.93	11.4	11.0	
For Share of Produce	0.57	1.38	24.2	16.3	
For Fixed Amount of Cash/Produce	0.05	0.13	2.1	1.5	
Others	0.10	0.71	4.3	8.3	
B. 1980					
TOTAL	3.42	9.73			
	a/		a/	b/	
	-		-	-	
Fully-owned	1.72	5.96	50.3	59.3	61.3
Owner-like Possession	0.43	1.09	12.5	14.7	11.2
For Share of Produce	0.93	1.99	27.3	33.2	20.5
For Fixed Amount of Cash/Produce	0.18	0.42	5.3	6.2	4.3
Others	0.16	0.27	4.6	5.4	2.8

a/ Percent share to total number of responses by tenure

b/ Percent share to total number of farms

Source of Basic Data: 1971 and 1980 Census of Agriculture  
(National Summaries)

Table 1.8  
Distribution of Production of Selected Agricultural Crops, By Region (in %)

REGION	Palay	Corn	Sugarcane	Coconut	Banana	Mango	Pineapple	Tobacco
Ilocos	8.4	1.5	0.5	0.1	3.5	14.8	†	65.6
Cagayan Valley	10.9	5.1	0.3	0.2	6.6	14.9	0.2	20.3
Central Luzon	18.6	0.5	1.5	†	1.0	11.5	†	1.8
NCR	1.2	0.4	0.4	0.4	0.1	1.2	†	0.8
Southern Tagalog	10.0	3.2	6.2	16.9	12.3	16.4	2.4	1.0
Bicol	6.6	3.0	2.0	14.8	2.6	1.4	0.4	0.6
Western Visayas	12.5	2.3	68.4	2.5	3.0	5	0.1	1.9
Central Visayas	2.3	11.7	9.1	4.6	5.2	5.2	†	3.1
Eastern Visayas	4.8	2.2	3.8	13.1	2.2	0.2	0.2	0.3
Western Mindanao	3.1	7.0	†	12.8	3.9	10.9	†	0.8
Northern Mindanao	3.7	16.5	4.0	9.5	11.0	8.4	32.8	2.0
Southern Mindanao	8.1	23.0	2.3	18.7	46.1	3.5	63.9	0.2
Central Mindanao	9.8	22.9	1.5	6.4	2.5	6.6	†	1.6
PHILIPPINES	100	100	100	100	100	100	100	100

† negligible

Source of Basic Data: 1980 Census of Agriculture

Table 2.1  
Public Finance

Year	Government Revenues	Government Expenditures (in million pesos)	Budget Deficit	Share of Budget Deficit to Total Expenditures (%)	GNP (%)
1957	1438	1606	-168	-10.5	-1.5
1958	1406	1430	-24	-1.7	-0.2
1959	1392	1513	-121	-8.0	-0.9
1960	1705	1697	8	0.5	0.1
1961	1856	2088	-232	-11.1	-1.5
1962	2051	1998	53	2.7	0.3
1963	2635	2750	-115	-4.2	-0.6
1964	2484	2455	29	1.2	0.1
1965	2533	2835	-302	-10.7	-1.3
1966	3038	3191	-153	-4.8	-0.6
1967	3576	3812	-236	-6.2	-0.8
1968	4056	4318	-262	-6.1	-0.8
1969	4510	5506	-996	-19.1	-2.8
1970	4849	4790	59	1.2	0.1
1971	5869	6052	-183	-3.0	-0.4
1972	5990	7001	-1011	-14.4	-1.8
1973	10367	8277	2090	25.3	2.9
1974	17722	15280	2442	16.0	2.5
1975	21426	22374	-948	-4.2	-0.8
1976	21027	23256	-2229	-9.6	-1.7
1977	24803	27526	-2723	-9.9	-1.8
1978	23826	23502	-2171	-9.2	-1.2
1979	29095	25417	-349	-1.4	-0.2
1980	34151	32561	-3385	-10.4	-1.3
1981	35478	38880	-12154	-31.3	-4.0
1982	37710	40821	-14414	-35.3	-4.3
1983	46299	44943	-6460	-14.4	-1.7
1984	57575	52197	-7946	-15.2	-1.5

Source: IMF, International Financial Statistics Yearbook, 1985

Table 2.2  
Budgetary Contributions to Government  
Corporations, Cash Basis (in million pesos)

Year	Current Contri- butions	Capital Contri- butions	Total	Share to Total Budgetary Expenditures (%)
A. Level				
1975	285	522	807	4.4
1976	392	1804	2196	10.7
1977	246	2252	2498	10.9
1978	632	2245	2877	11.0
1979	478	3391	3869	13.0
1980	505	4739	5244	13.8
1981	564	7862	8426	17.5
1982	889	8419	9308	17.7
1983	586	4821	5407	10.2
1984	429	9819	10248	15.4
B. The Top Beneficiaries of Current and Capital Contributions, 1975-1984				
I. CURRENT CONTRIBUTIONS				Amount (in million pesos)
1.	Philippine National Oil Company			94.5
2.	Fertilizer and Pesticide Authority			916.9
3.	National Food Authority			357.2
4.	National Kidney Foundation of the Philippines			353.4
5.	National Irrigation Administration			295.5
II. CAPITAL CONTRIBUTIONS				
1.	National Power Corporations			12,478.0
2.	Development Bank of the Philippines			7,339.0
3.	National Development Company			4,138.0
4.	National Irrigation Administration			3,599.0
5.	National Electrification Administration			1,863.0
6.	National Housing Authority			1,675.0
7.	Philippine National Bank			1,650.1
8.	Metropolitan Waterworks and Sewerage System			1,505.7
9.	Human Settlements Development Corporation			1,146.8
10.	Philippine National Oil Company			1,087.3

Source: J. Amatong, G. Beltran and E. Boncodin, "Explicit Budgetary Contributions of National Government to Government Corporations" Philippine Institute for Development Studies, (mimeographed, 1985)

Table 2.3  
Inflation Rate, Interest Rate and Wage rates

	Inflation Rate		Real Interest Rate <sup>1/</sup>	Index of Average Monthly Earnings of Wage Earners in Manila 1972 = 100		Index of Daily Ave. Wage Rate for Hired Farm Workers(w/out meals) 1972 = 100		Real Legislated Wage		
	GNP (%)	CPI Manila (%)		Nominal	Real	Nominal	Real	Metro Manila	Plantation Agriculture	Non-plantation Agriculture
1953	-1.9	-3.6								
1954	-3.7	-1.9								
1955	0.3	-1.0								
1956	1.3	6.8								
1957	3.7	1.4		50.3	111.0					
1958	1.9	3.1		50.7	108.6					
1959	2.4	-0.9		52.9	114.3					
1960	5.5	4.5	5.2	56.0	115.7					
1961	2.4	1.7	8.0	56.2	114.2					
1962	6.6	4.9	5.2	57.0	110.5					
1963	8.6	5.6	4.6	57.6	105.7					
1964	4.4	7.7	2.0	60.2	102.6					
1965	4.2	2.6	8.4	63.7	105.8					
1966	5.4	3.0	8.7	70.4	113.5					
1967	6.6	6.3	5.3	74.4	112.9					
1968	5.0	2.7	9.2	74.8	110.5					
1969	4.6	1.5	10.8	77.9	113.4					
1970	14.3	14.8	-1.8	83.8	106.2	80.8	109.0			
1971	12.5	6.6	7.0	90.6	107.7	91.4	105.7			
1972	6.8	18.9	-5.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1973	17.8	15.9	-1.6	101.9	87.9	112.1	96.7	87.7	85.5	85.5
1974	31.8	33.5	-15.9	111.9	72.3	142.4	91.2	82.0	90.3	90.3
1975	7.9	8.1	5.5	125.3	74.9	157.6	94.3	80.9	89.8	89.8
1976	9.5	5.3	7.7	143.8	81.6	187.7	102.0	91.6	109.7	97.3
1977	8.7	7.8	4.8	144.8	76.2	233.0	114.9	100.6	124.2	112.9
1978	8.1	6.9	3.8	164.4	80.9	248.0	114.1	120.0	126.4	115.8
1979	15.5	19.3	-6.5	204.6	84.4	262.8	103.1	131.4	160.0	124.5
1980	15.5	18.6	-5.3			282.5	93.9	123.5	175.5	132.7
1981	10.5	12.2	3.5			296.3	86.9	111.3	162.1	121.7
1982	8.8	11.0	3.2			320.9	85.5	132.7	147.3	110.5
1983	11.7	10.8	11.7			364.0	88.3		176.2	132.6
1984	49.8	49.3	-21.3			509.4	82.1			
1985	17.7	20.7	7.9							
1986	1.8	5.3	14.2							

Note: <sup>1/</sup> Real interest rate is nominal interest rate minus inflation rate (using CPI Manila). Nominal interest rates on credit granted by commercial banks plus 2% for 1973, the average annual yield for 364 days T-bills; and for 1974-83 weighted average of money market rates; for 1984-1986, average lending rate.

Sources of Data: NEDA, Philippine Statistical Yearbook, (various issues); ILO, 1974, p.232, Oshima, et.al., (1986); Central Bank Quarterly Financial Statistics (various issues); Alburo and Shephard (1985). IMF Recent Economic Development, 1986.

Table 2.4  
Average Effective Rates of Protection (%)

Industry Group	1965	1974	1985*
A.			
Consumption Goods	70	77	42
Intermediate Goods	27	23	33
Inputs into Construction	55	16	31
Capital Goods	16	18	25
Total Manufacturing	51	44	36
B.			
Agriculture and Primary		9	3
Manufacturing		44	36
Exports		4	12
Nonexportables		61	45
Import-competing		37	35
Import-noncompeting		148	67
Overall Average		36	28

\* Projected, by the assumption of a full implementation of the  
Tariff Reform Program

Source of data:

1965 : Power and Sicat, reported in Tan (1979)  
1974 : Tan (1979)  
1985 : Tan (1986)

Table 2.5  
The Current Account and Exchange Rate

Year	Current Account Deficit (\$ M)	Nominal Exchange Rate (₱/\$)		
		Actual Official	Actual Black	Estimated Equilibrium Rates <sub>a</sub> /
1960	5	2.02	3.53	2.54
1961	70	2.02	3.84	2.52
1962	-32	3.83	3.88	4.57
1963	-180	3.91	3.94	4.45
1964	-84	3.91	3.91	4.57
1965	-122	3.93	4.01	4.62
1966	-147	3.90	3.98	4.53
1967	42	3.93	4.10	4.76
1968	266	3.93	4.26	4.95
1969	253	3.93	4.95	4.95
1970	48	5.91	6.69	7.16
1971	2	6.43	7.01	7.71
1972	-5	6.67	7.03	7.94
1973	-473	6.76	7.20	7.63
1974	208	6.79	7.14	8.15
1975	923	7.25	7.90	9.20
1976	1105	7.44	7.91	9.66
1977	820	7.40	7.80	9.52
1978	1162	7.37	7.86	9.67
1979	1562	7.38	7.96	9.81
1980	2033	7.51	8.04	9.93
1981	2292	7.90	8.30	10.39
1982	3356	8.54	9.08	11.43

Table 2.5 (Cont'd)  
The Current Account and Exchange Rate

Year	Price Indices (1971=100)		Real Exchange Rate		Degree of Divergence		
	CPI Manila	World* WPIB/	Actual AC/ (P/P)	Equilib- rium e/ (P/P)	f/	g/	
1960	57.49	83.89	2.43	3.16	4.22	-25.1	35.5
1961	59.45	84.12	2.91	3.08	4.01	-23.3	30.4
1962	61.35	83.92	5.24	5.47	6.85	-20.1	25.2
1963	64.73	84.41	5.10	5.22	6.29	-16.9	20.3
1964	69.81	84.95	4.76	5.04	6.17	-18.3	22.4
1965	71.50	85.53	4.76	4.94	6.12	-19.2	23.8
1966	73.67	89.17	4.72	4.78	5.84	-18.1	22.1
1967	78.26	89.69	4.50	4.73	6.00	-21.3	27.1
1968	80.43	91.35	4.46	4.69	6.13	-23.6	30.9
1969	81.64	94.00	4.52	4.68	6.12	-23.6	30.8
1970	93.72	98.17	6.19	6.37	8.11	-21.4	27.3
1971	100.00	100.00	6.43	6.43	8.10	-20.6	25.0
1972	116.84	102.87	5.77	6.37	7.96	-20.0	25.0
1973	137.63	116.57	5.72	6.33	7.67	-17.4	21.1
1974	183.82	144.40	5.33	6.05	7.60	-20.4	25.7
1975	198.79	154.12	5.62	6.36	8.37	-24.0	31.6
1976	209.42	162.55	5.76	6.18	8.36	-26.1	35.2
1977	225.85	169.88	5.57	5.87	7.98	-26.4	33.9
1978	241.55	174.78	5.33	5.57	7.77	-28.2	39.4
1979	286.16	191.56	4.90	5.22	7.42	-29.6	42.0
1980	341.79	221.12	4.86	5.20	7.31	-28.8	40.4
1981	383.33	235.34	4.85	5.24	7.26	-27.9	38.7
1982	425.60	241.95	4.86	5.35	7.47	-28.3	39.5

Notes:

a/ See Appendix Table A2.1

b/ This is the trade weighted wholesale price indices of the U.S., Japan, Germany, Netherlands and U.K. The weights are the share to the total merchandise trade of the Phillipines with the five countries.

c/ Official exchange rate multiplied by the ratio of the trade-weighted "world" WPI to the CPI Manila (1971 = 1.00).

d/ Official exchange rate multiplied by the ratio of the trade-weighted "world" WPI to the price index for non-agriculture, Pna (1971 = 100).

e/ Equilibrium nominal exchange rate multiplied by the ratio of the trade-weighted "world" WPI to the adjusted Pna (Pna\*). See text for the derivation of the adjusted Pna.

$$f/ \left( \frac{\text{Actual}}{\text{Equilibrium}} - 1 \right) * 100$$

$$g/ \left( \frac{\text{Equilibrium}}{\text{Actual}} - 1 \right) * 100$$

Sources of Data:

IMF, International Financial Statistics, 1984.  
NEDA, Philippine Statistical Yearbook, 1985.  
Pick's Currency Yearbook (various issues).

Table 2.6  
Government Direct Intervention by Instrument and by Product.

Instruments	Palay	Rice	Corn (Shelled or Grits)	Sugar	Copra	Coconut Oil	Dessicated Coconut
1. Farm Support Price	X		X				
2. Consumer Price Ceiling		X	X	X		X <sup>a/</sup>	
3. Import Tariff			X				
4. Import Control/ Monopoly		X	X				
5. Export Tax				X	X	X	X
6. Export Ban					X		
7. Export Control/ Monopoly	X			X			
8. Levy on Producers					X		
9. Subsidized Irrigation	X		nil	nil			
10. Credit Subsidy- Production	X		X	X			
11. Credit Subsidy Processing		X	X	X		X	
12. Fertilizer Pricing	X		nil	X	nil		
13. Land Reform	X		X				
14. Minimum Wage	X	X	X	X	X	X	X

NOTE: X means that the instrument has been applied either continuously, intermittently or at least once during the period under study (1960-1982).

<sup>a/</sup> For the key coconut oil product, cooking oil

Table 2.7  
PHASES OF INTERVENTION

	Political Environment	International Developments	Macroeconomic Environment	Agricultural Policy and Developments
<b>A. PHASE V: MINIMAL GOVERNMENT INTERVENTION</b>				
Period				
1910-1934	American colonial government	* World commodity prices fluctuated substantially: rising sharply during WWI until 1919, dropping precipitously in 1921, recovering mildly through the 1920's, then declining sharply during the Great Depression	* Gold exchange standard: conservative fiscal and monetary policy fixed exchange rate peso in equilibrium	* Free trade with U.S. * Minimal intervention in food pricing
<b>B. PHASE I: EMERGENT GOVERNMENT INTERVENTION (1935-1971)</b>				
Period				
Pre-1950	Commonwealth government (1935-1941) Japanese Occupation (1941-1944) Political independence (1946-) Growing agrarian (Huk) insurgency	* Second world war * World reconstruction	* Massive wartime destruction * Wartime inflation * Post WWII trade deficit; reserves drawn down * BOP crisis in 1949 * Post WWII economic reconstruction	* Imposition of sugar allocation quota (since 1934) * Establishment of government rice and corn trading agency (1935) * Post WWII reconstruction
1950s	Republican form of government Decline of Huk insurgency Rise of economic nationalism	* Relatively stable world prices after Korean War * Deterioration in external terms of trade of the Philippines	* Foreign exchange and controls; peso overvalued * Conservative fiscal and monetary policy * Negligible inflation * Import substitution industrial strategy	* Continuation of sugar allocation * Government control of rice and corn importation * Government initiatives in cooperative marketing, rural banking, sharing arrangements in tenancy

Table 2.7 cont'd

1960s	<p>Republican form of government</p> <p>First ever reelection of Philippine president in 1969</p> <p>Increasingly volatile political situation (1969-1971)</p>	<p>Relatively stable world prices</p> <p>Increase in Philippine sugar export quota to U.S.</p>	<p>Decontrol and peso devaluation in early 1960s</p> <p>Expansionary monetary and fiscal policy and growing BOP difficulties in latter 1960s, followed by 1970 peso devaluation</p> <p>Tariff-based industrial protection</p>	<p>Rice shortage and positive protection in early 1960s; rice HYVs since mid 1960s; rice self-sufficiency and zero protection in late 1960s</p> <p>Encouragement of sugar production to meet increased U.S. sugar quota</p> <p>Commercialization of livestock industry and growing corn imports for feeds</p> <p>Implicit (1962-1964) and explicit (since 1970) taxation of agricultural exports</p>
<p>C. PHASE II: Extensive Government Intervention (1972-1982)</p>				
<p>Periods:</p>				
1972-1975	<p>Martial Law government</p> <p>Nonexistent Legislature</p> <p>Legislation through presidential decrees</p> <p>Start of expansion of government bureaucracy</p>	<p>World prices explode</p> <p>Oil crisis</p>	<p>High inflation</p> <p>Sharp rise in government expenditures</p> <p>Investment and export incentives</p> <p>Tariff-based industrial protection</p> <p>Stable exchange rate</p>	<p>Government control of sugar marketing</p> <p>Price controls</p> <p>Large consumer subsidies (explicit or implicit)</p> <p>Levy on coconut export tax premium on sugar, coconut and lumber</p> <p>Government control of wheat and feedgrain imports</p> <p>Fertilizer and agricultural credit subsidies</p> <p>Land reform in rice and corn</p>

Table 2.7 cont'd

1976-1982	Martial Law regime Ineffectual legislature	<ul style="list-style-type: none"> <li>‡ World prices plunged, rose (1980-81) then dropped again (1982)</li> <li>‡ Second oil crisis</li> <li>‡ End of U.S. sugar quota premium</li> <li>‡ Rise in world interest rate</li> </ul>	<ul style="list-style-type: none"> <li>‡ Expansionary fiscal policy</li> <li>‡ Growing trade deficits and external debt</li> <li>‡ High investment rate</li> <li>‡ Crony capitalism</li> <li>‡ Financial market instability and Dewey Dee scandal</li> </ul>	<ul style="list-style-type: none"> <li>‡ Government control in sugar, foodgrain and feedgrain marketing</li> <li>‡ Monopolization of coconut processing and trade</li> <li>‡ Increased irrigation investment</li> <li>‡ Marginal rice export surplus</li> <li>‡ Larger agricultural bureaucracy</li> </ul>
D. PHASE III/IV: Policy Reforms and Liberalization (1983-1987)				
Period:				
1983-1985	Aquino assassination (1983) Political crisis	<ul style="list-style-type: none"> <li>‡ Low world prices</li> </ul>	<ul style="list-style-type: none"> <li>‡ Economic crisis</li> <li>‡ Budgetary cutbacks</li> <li>‡ Major peso devaluation</li> <li>‡ Debt rescheduling problems</li> <li>‡ Modest tariff reform</li> </ul>	<ul style="list-style-type: none"> <li>‡ Increased multilateral and domestic pressures for agricultural policy reforms</li> <li>‡ Privatization of domestic sugar marketing</li> <li>‡ Interlocking directorates in coconut diluted</li> </ul>
1986-1987	February 1986 uprising Installation of new government Political liberalization, instability and consolidation Institution of legislature	<ul style="list-style-type: none"> <li>‡ World prices creeping upwards</li> </ul>	<ul style="list-style-type: none"> <li>‡ Economic recovery underway</li> <li>‡ Pump priming</li> <li>‡ Partial trade liberalization</li> <li>‡ Policy reforms enunciated; implementation still fluid</li> <li>‡ External debt overhang remains</li> <li>‡ Stable exchange rate</li> </ul>	<ul style="list-style-type: none"> <li>‡ Abolition of sugar and coconut monopolies</li> <li>‡ Abolition of export taxes on agricultural exports</li> <li>‡ Liberalization of fertilizer and wheat imports</li> <li>‡ Corn import ban</li> </ul>

Fig. 3.1a Domestic and Border Prices Relative to Pna: RICE

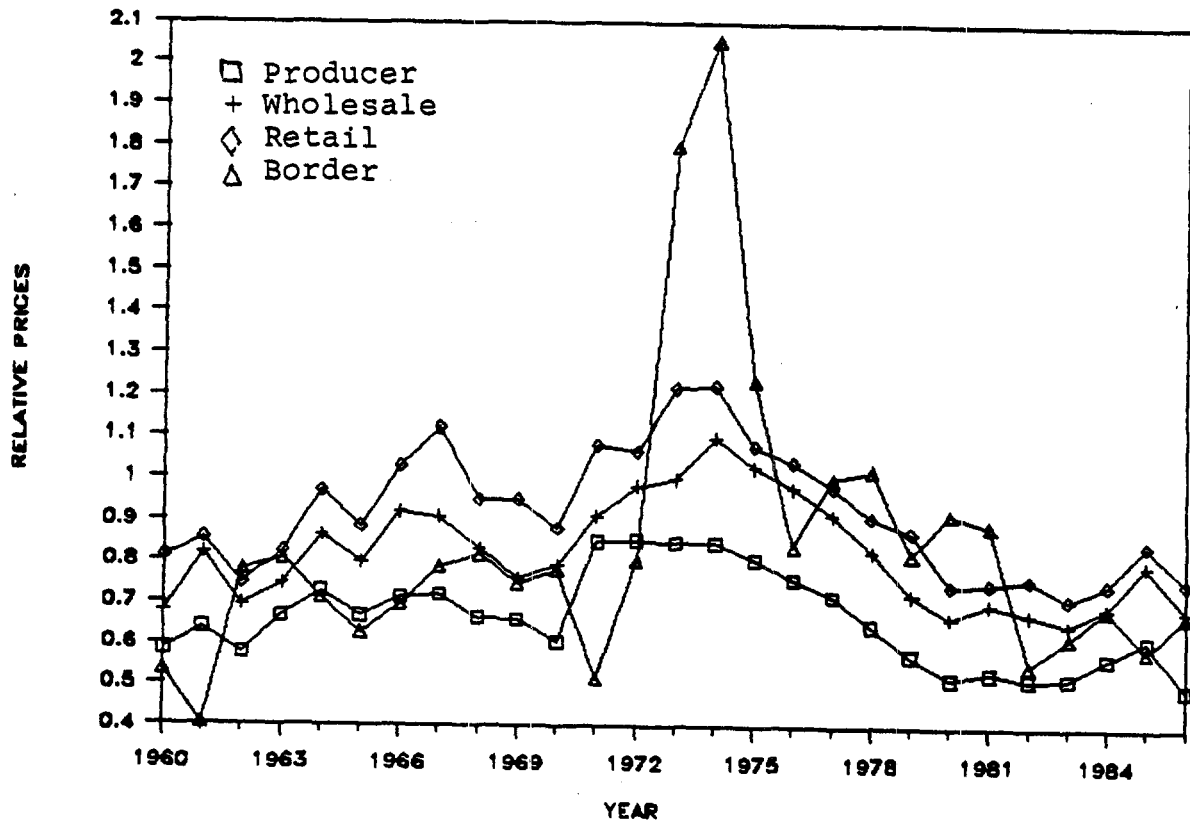


Fig. 3.1b Logarithm of Domestic and Border Prices: RICE

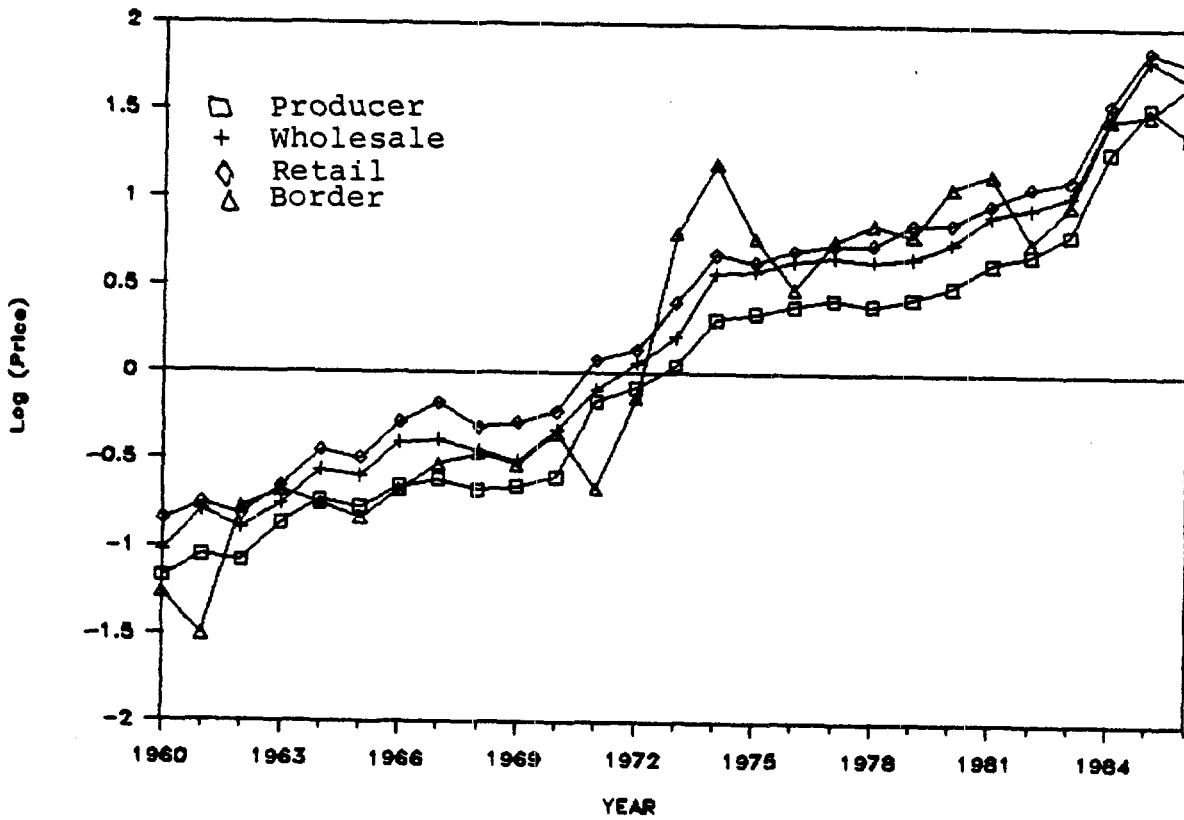


Fig. 3.2a Domestic and Border Prices Relative to Pna: CORN

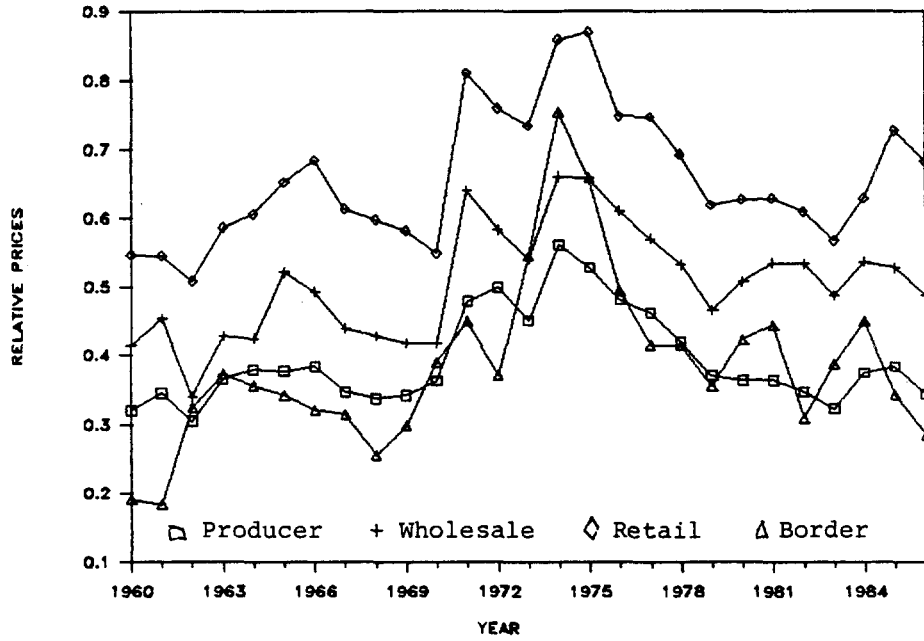


Fig. 3.2b Logarithm of Domestic and Border Prices: CORN

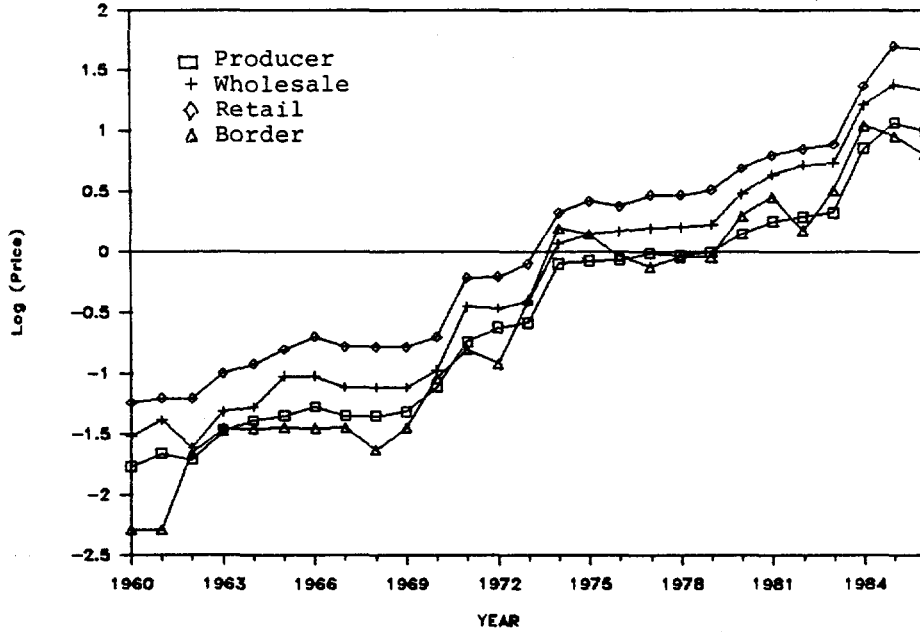


Fig. 3.3a Domestic and Border Prices Relative to Pna: SUGAR

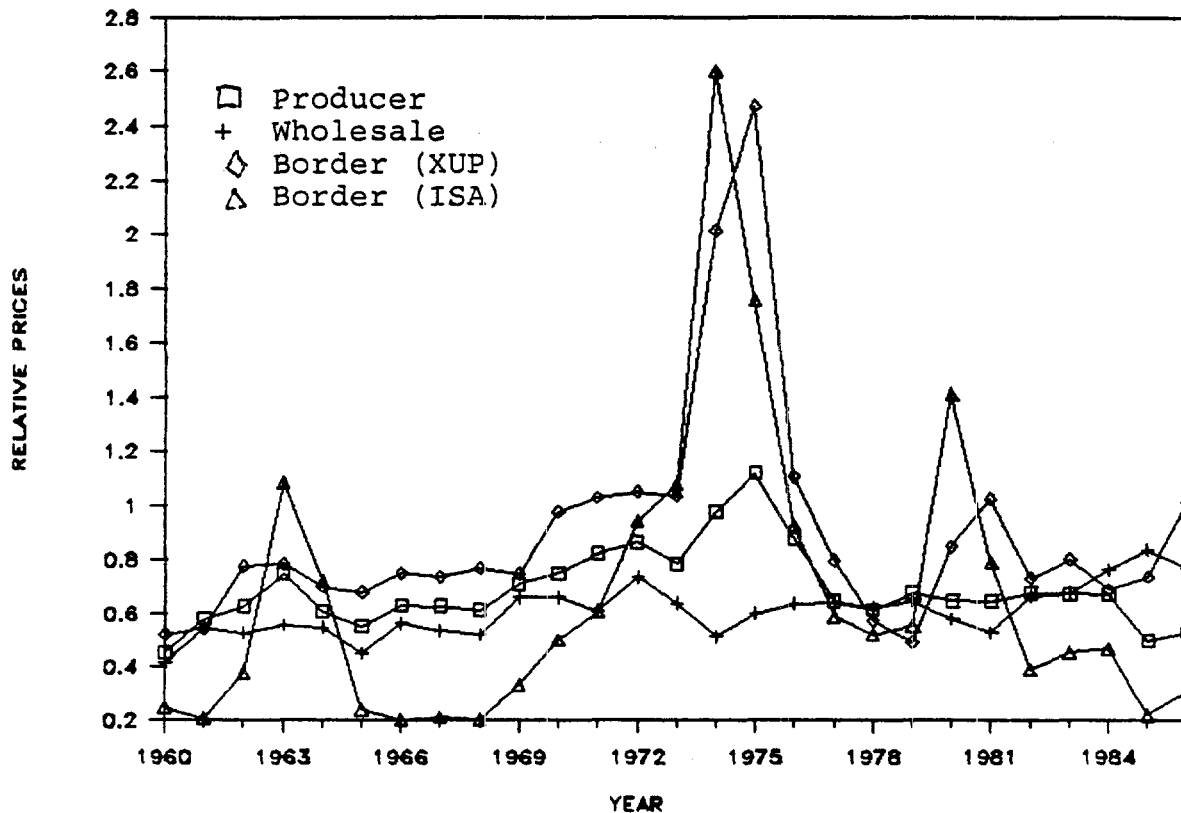


Fig. 3.3b Logarithm of Domestic and Border Prices: SUGAR

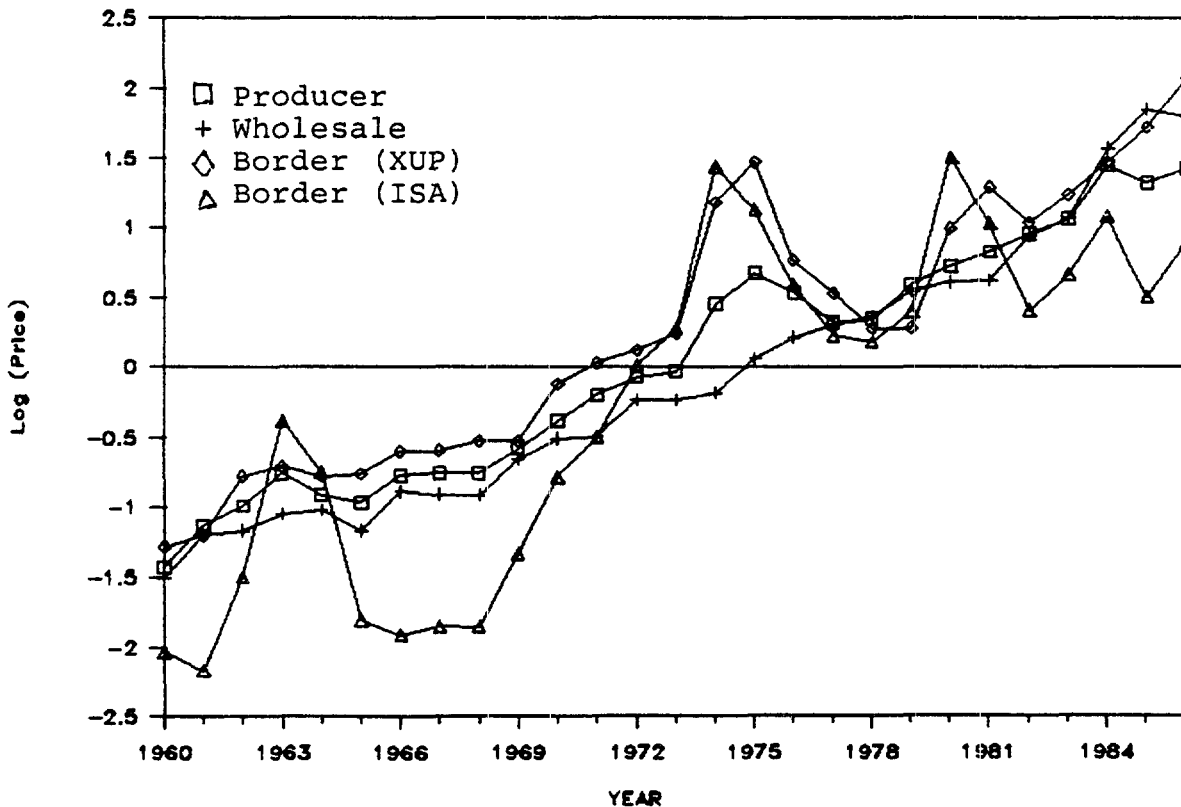


Fig. 3.4a Domestic and Border Prices Relative to Pna: COPRA

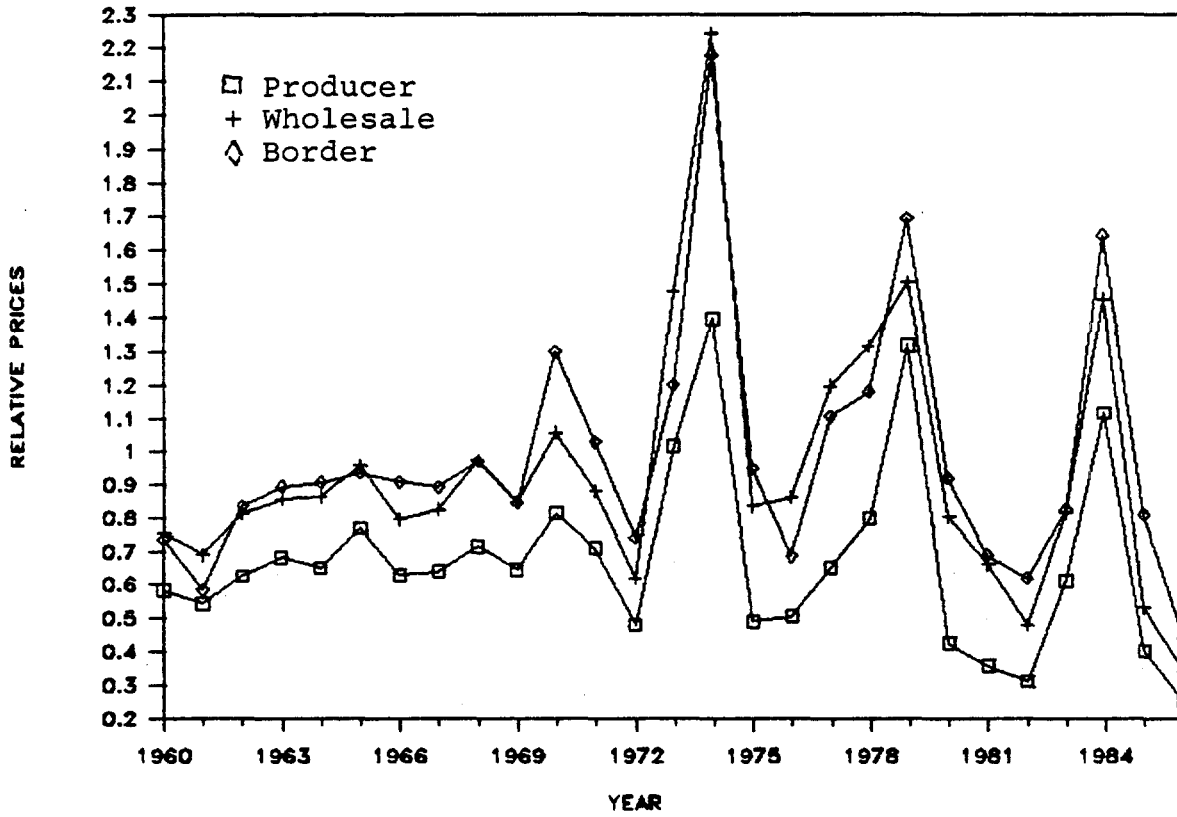


Fig. 3.4b Logarithm of Domestic and Border Prices: COPRA

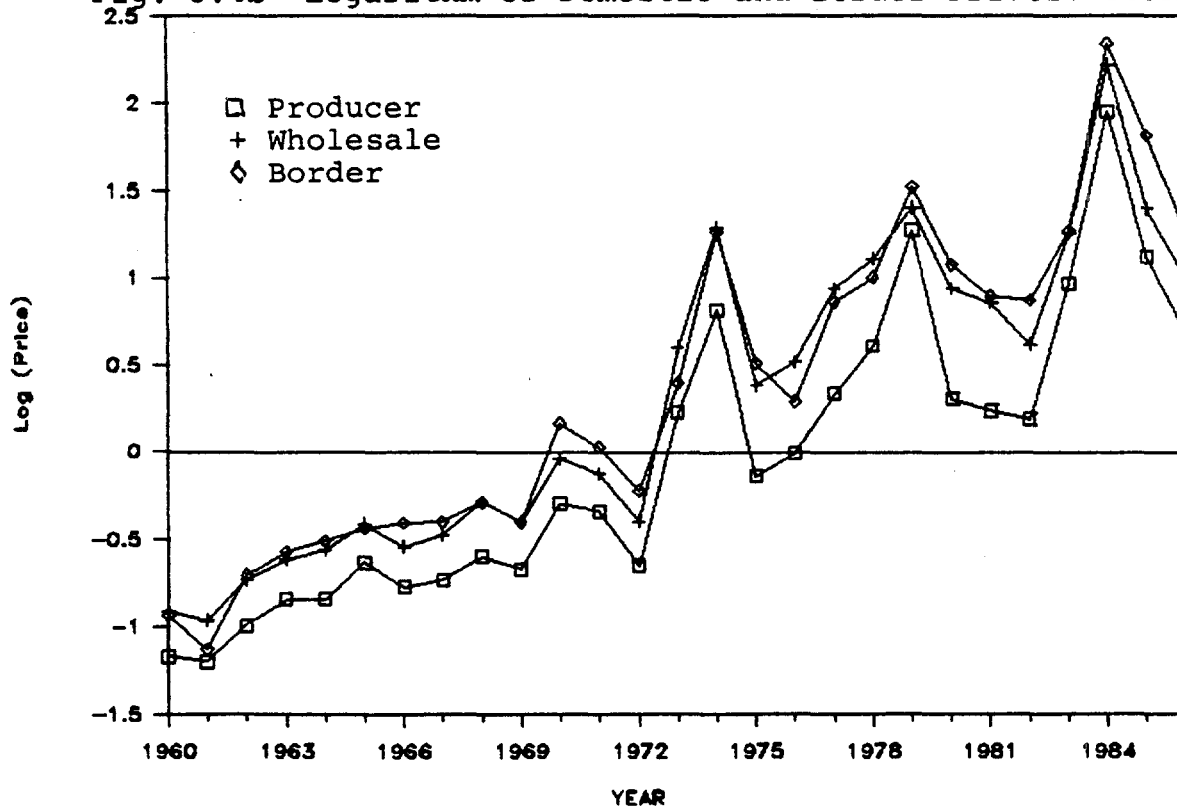


Table 3.1  
Nominal Protection Rates, Producer and Retail  
Level, Philippines, 1960-86  
(in percent)

	N	P	R	D	
	-----				
	Rice	Corn	Sugar (XUP)	Sugar (ISA)	Copra
	-----				
A. Producer Level					
1960-61	68	126	-4	138	12
1962-63	-9	11	-12	19	-3
1964-66	27	43	-16	105	-5
1967-69	6	51	-13	168	-5
1970-72	34	35	-21	24	-16
1973-75	-36	-5	-44	-42	-14
1976-79	-6	31	1	11	-11
1980-82	-9	37	-22	0	-36
1983-86	11	42	-29	65	-20
1960-86	8	39	-18	51	-12
B. Retail Level					
1960-61	65	137	-11	117	11
1962-63	-9	10	-31	-5	-3
1964-66	26	41	-27	81	-5
1967-69	6	50	-24	133	-2
1970-72	34	35	-35	3	-16
1973-75	-36	-5	-63	-62	5
1976-79	-6	30	-21	-10	8
1980-82	-9	38	-30	-7	-13
1983-86	11	42	-4	135	-17
1960-86	7	39	-26	43	-4

Note: NPRD - Nominal protection rate due to  
direct price interventions.

Table 3.1 cont'd

	N	P	R	S	T
	Rice	Corn	Sugar (XUP)	Sugar (ISA)	Copra
<b>A. Producer Level</b>					
1. Using Free Trade Equilibrium Exchange Rate					
1960-61	34	80	-13	117	2
1962-63	-22	-5	-31	-8	-24
1964-66	9	22	-33	68	-24
1967-69	-14	21	-30	116	-24
1970-72	12	13	-34	4	-30
1973-75	-47	-20	-52	-52	-28
1976-79	-28	-1	-23	-15	-32
1980-82	-31	-3	-42	-25	-52
1983-86	-11	15	-40	39	-36
1960-86	-13	12	-34	24	-29
2. Using Free Trade Exchange Rate					
1960-61	36	81	-12	119	3
1962-63	-24	-8	-33	-10	-26
1964-66	6	19	-34	63	-26
1967-69	-12	25	-29	121	-21
1970-72	12	13	-34	4	-30
1973-75	-47	-20	-53	-51	-28
1976-79	-25	4	-20	-12	-29
1980-82	-28	9	-39	-21	-50
1983-86	-10	16	-39	41	-35
1960-86	-12	13	-33	25	-28
<b>B. Retail Level</b>					
1. Using Free Trade Equilibrium Exchange Rate					
1960-61	33	89	-19	97	0
1962-63	-22	-6	-46	-27	-25
1964-66	8	21	-42	48	-24
1967-69	-15	20	-39	88	-22
1970-72	12	13	-45	-14	-31
1973-75	-47	-20	-68	-68	-12
1976-79	-28	0	-28	-21	-17
1980-82	-31	4	-47	-30	-34
1983-86	-11	15	-23	92	-34
1960-86	-13	13	-39	18	-23
2. Using Free Trade Exchange Rate					
1960-61	34	91	-18	99	2
1962-63	-24	-9	-48	-28	-26
1964-66	6	18	-43	44	-25
1967-69	-13	24	-37	93	-20
1970-72	12	13	-45	-14	-30
1973-75	-46	-20	-69	-68	-12
1976-79	-25	4	-25	-18	-14
1980-82	-28	9	-44	-27	-31
1983-86	-10	16	-22	93	-33
1960-86	-12	14	-38	19	-22

Note: NPRST - Nominal protection rate due to short run total price interventions.

Table 3.1 cont'd

=====					
N P R L T					
	Rice	Corn	Sugar (XUP)	Sugar (ISA)	Copra
-----					
A. Producer Level					
1. Using Free Trade Equilibrium Exchange Rate					
1960-61	28	71	-17	106	-4
1962-63	-26	-10	-35	-13	-28
1964-66	3	16	-36	60	-28
1967-69	-18	16	-33	107	-27
1970-72	6	8	-37	-1	-33
1973-75	-49	-24	-55	54	-31
1976-79	-32	-6	-27	-20	-36
1980-82	-35	-2	-45	-28	-55
1983-86	-16	9	-44	31	-40
1960-86	-17	6	-37	18	-33
2. Using Free Trade Exchange Rate					
1960-61	29	72	-17	107	-3
1962-63	-27	-12	-36	-14	-29
1964-66	2	14	-37	57	-29
1967-69	-16	18	-32	110	-25
1970-72	6	8	-37	-1	-33
1973-75	-49	-24	-55	-54	-32
1976-79	-30	-4	-25	-18	-34
1980-82	-32	1	-43	-26	-53
1983-86	-15	10	-43	32	-39
1960-86	-17	7	-37	19	-32
B. Retail Level					
1. Using Free Trade Equilibrium Exchange Rate					
1960-61	26	80	-23	88	-5
1962-63	-26	-11	-49	-30	-28
1964-66	3	15	-44	41	-27
1967-69	-18	16	-41	80	-25
1970-72	6	8	-48	-19	-34
1973-75	-49	-24	-70	-70	-17
1976-79	-32	-6	-32	-25	-21
1980-82	-35	-1	-50	-34	-38
1983-86	-16	9	-27	81	-38
1960-86	-17	7	-42	12	-27
2. Using Free Trade Exchange Rate					
1960-61	27	81	-23	89	-4
1962-63	-27	-13	-50	-31	-30
1964-66	1	13	-45	38	-28
1967-69	-17	17	-40	83	-24
1970-72	6	8	-48	-18	-34
1973-75	-49	-24	-70	-70	-17
1976-79	-30	-3	-30	-23	-19
1980-82	-32	2	-48	-31	-36
1983-86	-15	9	-26	81	-37
1960-86	-17	8	-42	13	-26
=====					

Note: NPRLT - Nominal protection rate due to long run total price interventions.

Table 4.1  
Short Run and Cumulative Direct and Total  
Output Effects  
(as Ratio of No-intervention Output)

	Rice	Corn	Sugar	Copra
A. Short Run Direct				
1961-64	0.0364	0.1083	0.0022	
1965-69	0.0223	0.0743	-0.0062	
1970-74	0.0127	0.0446	-0.0299	
1975-79	-0.0317	0.0249	-0.0689	
1980-82	-0.0434	0.0396	-0.0230	
1983-86	0.0139	0.0632	-0.0648	
1961-86	0.0034	0.0586	-0.0325	
B. Short Run Total				
1961-64	0.0034	0.0586	0.0021	
1965-69	-0.0006	0.0340	-0.0065	
1970-74	-0.0080	0.0098	-0.0474	
1975-79	-0.0398	-0.0169	-0.1037	
1980-82	-0.0504	-0.0112	-0.0900	
1983-86	-0.0126	0.0120	-0.1070	
1961-86	-0.0165	0.0147	-0.0568	
C. Cumulative Direct				
1964	-0.0261	0.1115	0.0000	
1969	-0.0035	0.1880	-0.0390	-0.1426
1974	-0.0590	0.0785	-0.0745	-0.2166
1979	-0.0552	0.0889	0.0233	-0.2779
1982	-0.0773	0.0743	-0.1172	-0.2189
1986	0.0401	0.1188	-0.1129	-0.2050
D. Cumulative Total				
1964	-0.0279	-0.0156	0.0088	
1969	-0.0370	0.1064	-0.0551	-0.0791
1974	-0.0601	-0.0466	-0.1123	-0.1526
1979	-0.0952	-0.0256	-0.0662	-0.1948
1982	-0.1127	-0.0479	-0.1685	-0.1247
1986	-0.0287	0.0383	-0.1537	-0.0937

Table 4.2  
Short Run and Cumulative Direct and Total  
Consumption Effects  
(as Ratio of No-intervention Consumption)

	Rice	Corn	Sugar	Copra
<b>A. Short Run Direct</b>				
1960-64	-0.1147	0.1312	0.0902	-0.0565
1965-69	-0.0775	0.0926	0.1079	0.0396
1970-74	0.0011	0.0904	0.1699	0.0476
1975-79	0.0279	-0.0141	0.1145	-0.1290
1980-82	0.0101	0.0208	0.1201	0.2277
1983-84	-0.0290	0.0179	0.0129	0.1217
1960-84	-0.0304	0.0611	0.1128	0.0205
<b>B. Short Run Total</b>				
1960-64	-0.0252	0.1285	0.1489	0.3113
1965-69	0.0103	0.0961	0.1668	0.4040
1970-74	0.0685	0.0834	0.2058	0.3326
1975-79	0.1145	-0.0128	0.1482	0.3472
1980-82	0.1132	0.0300	0.1904	0.6404
1983-84	0.0754	0.0311	0.1062	0.5403
1960-84	0.0565	0.0625	0.1660	0.4027
<b>C. Cumulative Direct</b>				
1964	-0.0749	0.1476	0.0958	0.0851
1969	-0.0268	-0.0053	0.0461	-0.0160
1974	0.2088	-0.0907	0.2665	-0.1689
1979	0.0287	0.0021	0.1173	0.1851
1982	-0.1386	0.1377	0.0581	0.4492
1984	-0.0289	0.0013	-0.0342	0.2398
<b>D. Cumulative Total</b>				
1964	0.0175	0.1686	0.1843	0.5686
1969	0.0798	0.0090	0.1290	0.4474
1974	0.2527	-0.0602	0.2950	0.2545
1979	0.1224	-0.0616	0.0401	0.7388
1982	0.0227	0.1159	0.1587	0.8611
1984	0.0934	0.0191	0.0857	0.6899

Table 4.3  
Short Run and Cumulative Direct and Total  
Foreign Exchange Effects  
(as Ratio of Actual Export Earnings)

	Rice	Corn	Sugar	Copra	TOTAL
<b>A. Short Run Direct</b>					
1961-64	-0.1372	0.0002	-0.0074	0.0171	0.1467
1965-69	-0.0517	-0.0002	-0.0121	-0.0016	0.0384
1970-74	0.0150	-0.0006	-0.0288	0.0049	-0.0382
1975-79	0.0083	-0.0030	-0.0454	0.0050	-0.0457
1980-82	-0.0187	-0.0029	-0.0155	-0.0025	0.0036
1983-84	0.0168	-0.0010	-0.0138	-0.0030	-0.0326
1961-84	-0.0302	-0.0016	-0.0218	0.0040	0.0140
<b>B. Short Run Total</b>					
1961-64	-0.0367	0.0052	-0.0120	-0.0082	0.0113
1965-69	0.0076	0.0042	-0.0171	-0.0157	-0.0445
1970-74	0.0509	0.0038	-0.0388	-0.0081	-0.1017
1975-79	-0.0019	0.0028	-0.0537	-0.0101	-0.0647
1980-82	-0.0499	0.0034	-0.0318	-0.0066	0.0081
1983-84	-0.0208	0.0048	-0.0270	-0.0075	-0.0183
1961-84	-0.0026	0.0037	-0.0305	-0.0100	-0.0417
<b>C. Cumulative Direct</b>					
1964	-0.0240	0.0015	-0.0077	-0.0037	0.0111
1969	-0.0152	-0.0216	-0.0182	-0.0542	-0.0357
1974	0.1670	-0.0244	-0.0683	-0.0859	-0.2969
1979	-0.0284	-0.0071	-0.0027	-0.1832	-0.1503
1982	0.0196	0.0041	-0.0252	-0.0521	-0.1011
1984	0.0118	-0.0116	-0.0078	-0.0994	-0.1075
<b>D. Cumulative Total</b>					
1964	0.0205	0.0155	-0.0111	-0.0170	-0.0642
1969	0.0644	-0.0109	-0.0318	-0.0447	-0.1300
1974	0.1877	0.0004	-0.0912	-0.0766	-0.3560
1979	-0.0662	-0.0032	-0.0083	-0.1323	-0.0712
1982	-0.0376	0.0133	-0.0422	-0.0291	-0.0471
1984	-0.0459	0.0054	-0.0179	-0.0579	-0.0352

Table 4.4  
Gross Domestic Capital Formation in Agriculture, 1955-1983  
(in million pesos at constant 1972 prices)

YEAR	Gross Private Investment in Agriculture				TOTAL	Public Investment in Agriculture -Irrigation-	Gross Domestic Capital Formation in Agriculture
	Agricultural Machineries &	Livestock & Poultry	Grains	Perennial Crops			
1955	113.2	371	0	(7.3)	477.1	38.3	515.4
1956	125.9	111	0	1.2	238.1	75.5	313.6
1957	147.7	33	0	14.7	195.4	82.6	278.0
1958	100.7	(290)	0	(6.6)	(197.9)	45.1	(152.8)
1959	87.1	43	102	4.7	236.8	18.0	254.8
1960	65.7	(359)	11	137.5	(144.8)	21.3	(123.5)
1961	191.0	66	(165)	105.4	197.4	24.7	222.1
1962	243.2	(67)	124	120.0	642.3	33.1	675.4
1963	327.6	124	(69)	182.2	564.8	30.2	595.0
1964	293.2	332	18	65.9	709.1	17.1	726.2
1965	107.5	290	27	29.4	453.9	20.3	474.2
1966	223.5	(91)	(18)	8.3	122.8	20.2	143.0
1967	414.5	376	(38)	63.8	952.7	30.1	982.8
1968	360.5	(468)	154	90.8	137.3	30.9	168.2
1969	373.9	95	319	71.9	859.8	46.7	906.5
1970	311.8	4	(22)	200.9	494.7	94.4	589.1
1971	398.5	(89)	(113)	269.7	466.2	135.6	601.8
1972	337.0	(236)	88	(87.8)	101.2	189.0	290.2
1973	298.1	(279)	(229)	172.4	(37.5)	266.5	229.0
1974	393.3	68	322	106.3	889.6	301.2	1,190.8
1975	521.0	18	49	56.2	644.2	437.6	1,081.8
1976	276.1	(132)	(139)	229.7	234.8	409.4	644.2
1977	458.7	327	40	94.1	919.8	433.5	1,353.3
1978	471.2	(41)	225	24.3	679.5	577.6	1,257.1
1979	546.0	209	257	258.2	1,270.2	634.0	1,904.2
1980	564.7	9	(38)	(101.4)	434.3	617.2	1,051.5
1981	619.0	63	(135)	79.5	626.5	570.4	1,196.9
1982	530.5	78	113	7.1	728.6	562.2	1,290.8
1983	333.3	(95)	(60)	(29.7)	148.6	459.2	607.8

Table 4.4 cont'd  
Percentage Shares of Capital Formation in Agriculture

Year	<u>GDCF Agri</u> <u>GDCF Total</u>	<u>GDCF Agri</u> GVA crops, livestock	Investment in Agri <u>Machineries</u> Capital Formation in Durable Equipment	Share to Total Gross Domestic Capital Formation in Agriculture (in percent)				
				Agri Machineries and Tractors	Irrigation	Livestock and Poultry	Grains	Perennial Crops
1955	13.43		7.61	21.96	7.43	71.98	0	(1.40)
1956	7.41		6.99	40.15	24.08	35.40	0	0.47
1957	5.46		6.80	53.13	29.71	11.87	0	5.83
1958	(3.00)		4.55	(65.90)	(29.52)	189.79	0	(5.65)
1959	4.33		3.26	34.18	7.06	16.88	40.0	1.88
1960	(4.52)		2.89	(53.20)	(17.25)	290.69	(8.91)	81.33
1961	3.70		7.88	86.00	11.12	29.73	(74.32)	47.47
1962	11.38		10.49	36.01	4.90	(9.92)	18.36	50.65
1963	8.46		12.20	55.06	5.08	20.84	(11.60)	30.62
1964	9.17		8.80	40.37	2.35	45.72	2.48	9.08
1965	5.69		3.24	22.78	4.28	61.16	5.69	6.09
1966	1.70		6.45	156.29	14.12	(63.64)	(13.20)	6.43
1967	10.13	10.59	9.21	42.18	3.06	38.26	(3.87)	20.37
1968	1.57	1.75	7.03	214.33	18.37	(278.24)	91.56	53.98
1969	8.07	9.27	7.36	41.25	5.15	10.48	35.19	7.93
1970	5.44	5.80	6.46	52.97	16.02	0.68	(3.73)	34.06
1971	5.36	5.57	7.09	66.20	22.53	(14.79)	(18.78)	44.84
1972	2.50	2.56	6.40	116.21	65.13	(81.32)	30.32	30.34
1973	1.83	1.95	7.38	130.13	116.38	(121.83)	(100.00)	24.68
1974	7.61	9.39	5.33	33.02	25.29	5.71	27.04	9.94
1975	5.70	7.86	5.86	48.15	40.45	1.66	4.53	5.21
1976	3.18	4.36	3.32	42.86	63.55	(20.49)	(21.58)	35.66
1977	6.50	8.67	5.56	33.89	32.03	26.09	2.96	5.03
1978	5.44	7.66	4.78	37.47	45.95	(3.26)	17.90	1.94
1979	7.23	10.88	4.96	28.68	33.29	10.98	13.50	13.55
1980	3.95	5.67	4.86	53.70	58.70	0.86	(3.63)	(9.63)
1981	4.40	6.20	5.38	51.71	47.66	5.26	(11.28)	6.65
1982	4.89	6.41	4.75	41.09	43.55	6.04	8.75	0.57
1983	2.43	3.23	3.01	54.84	75.55	(15.63)	(9.47)	(5.29)

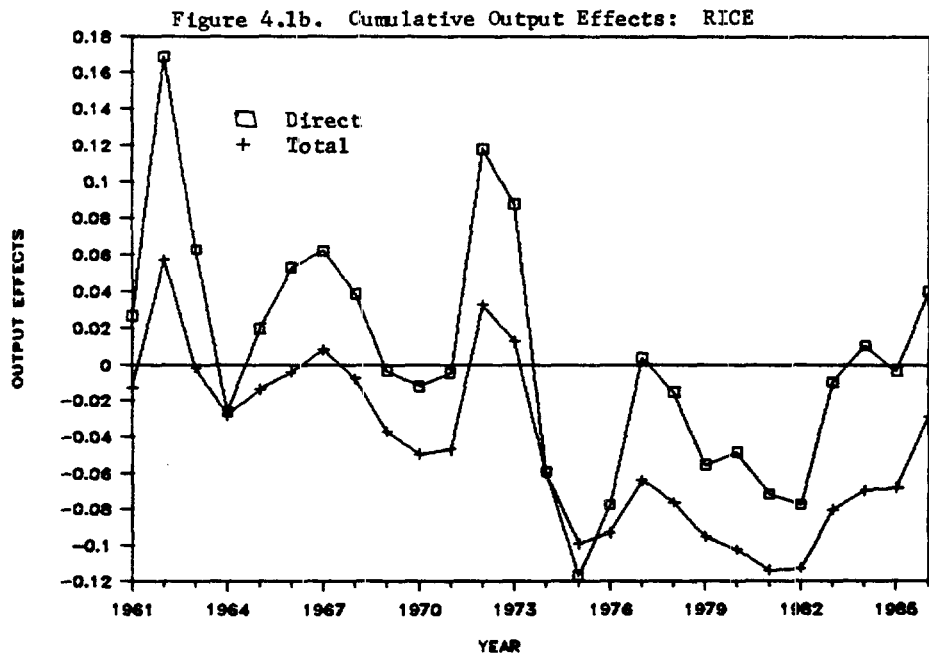
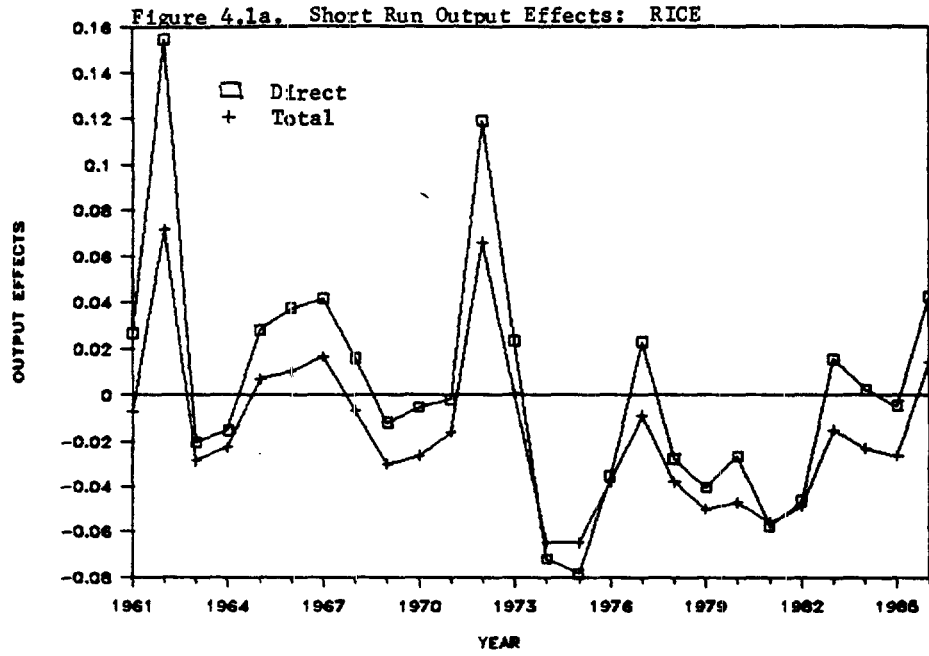


Figure 4.2a. Short Run Output Effects: CORN

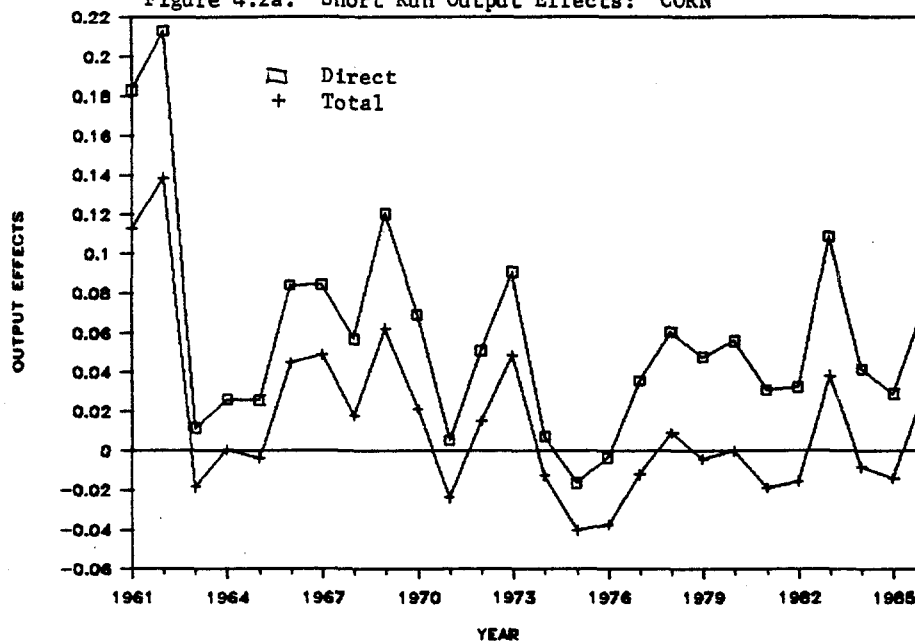


Figure 4.2b. Cumulative Output Effects: CORN

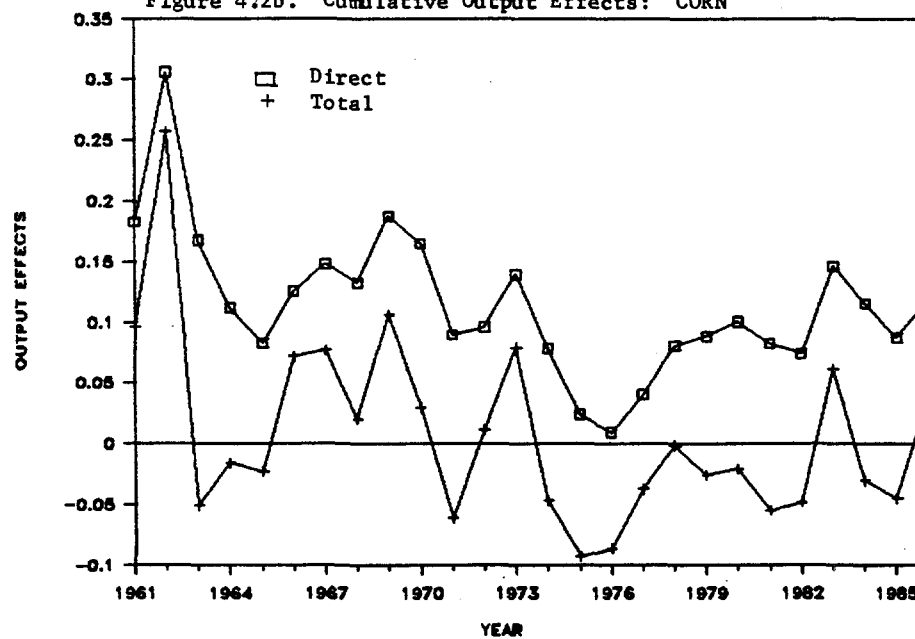


Figure 4.3a. Short Run Output Effects: SUGAR

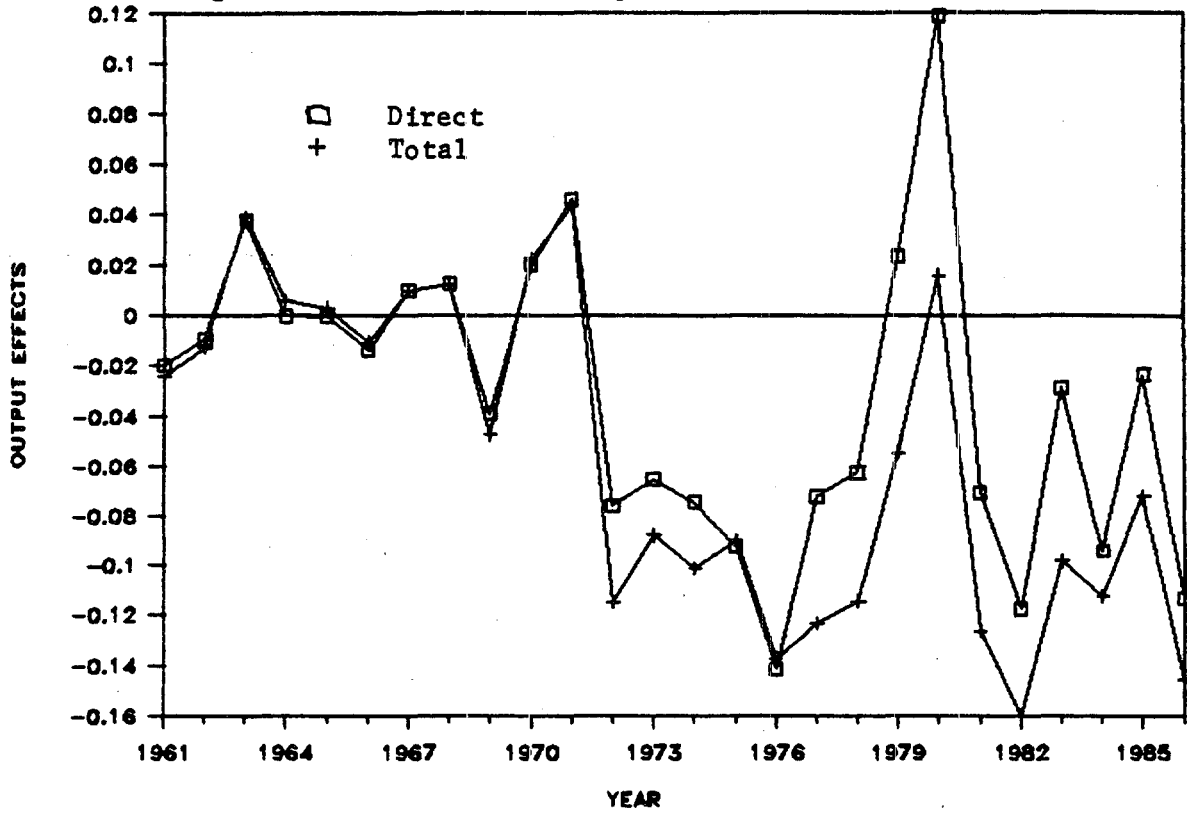


Figure 4.3b. Cumulative Output Effects: SUGAR

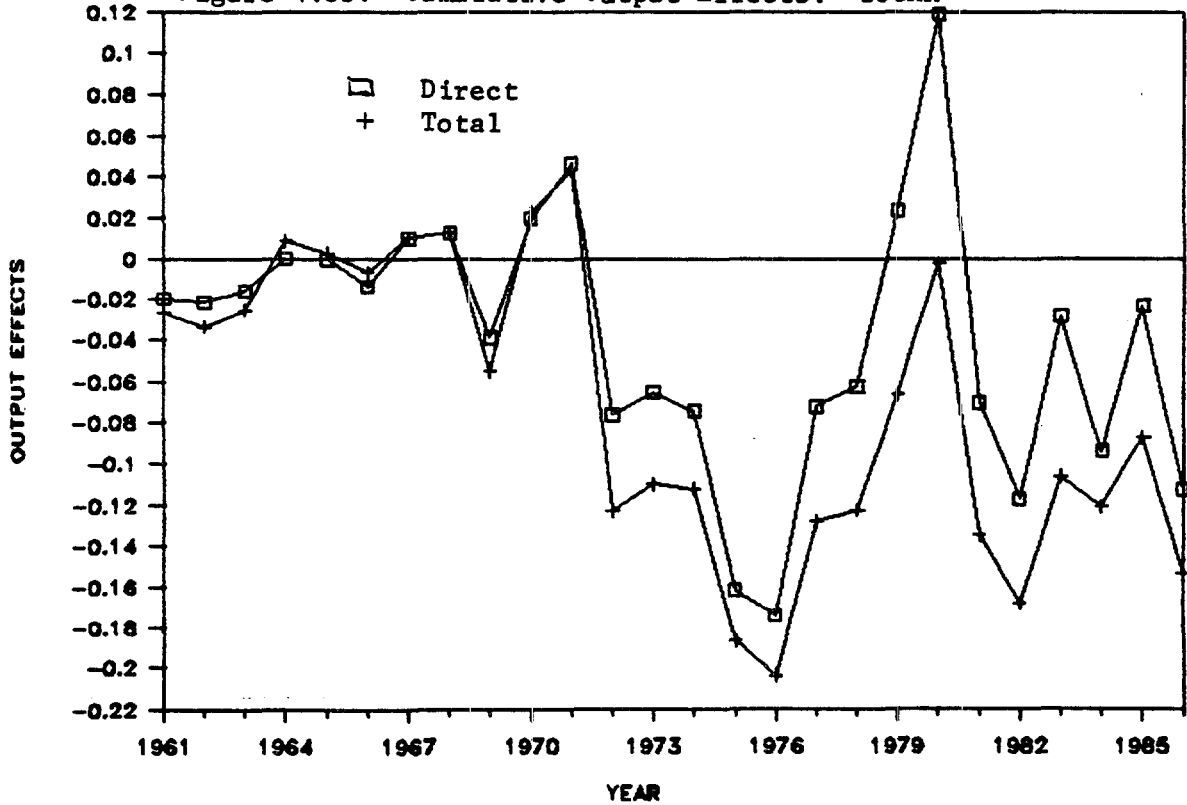


Figure 4.5a. Short Run Output Effects: SUGAR (ISA)

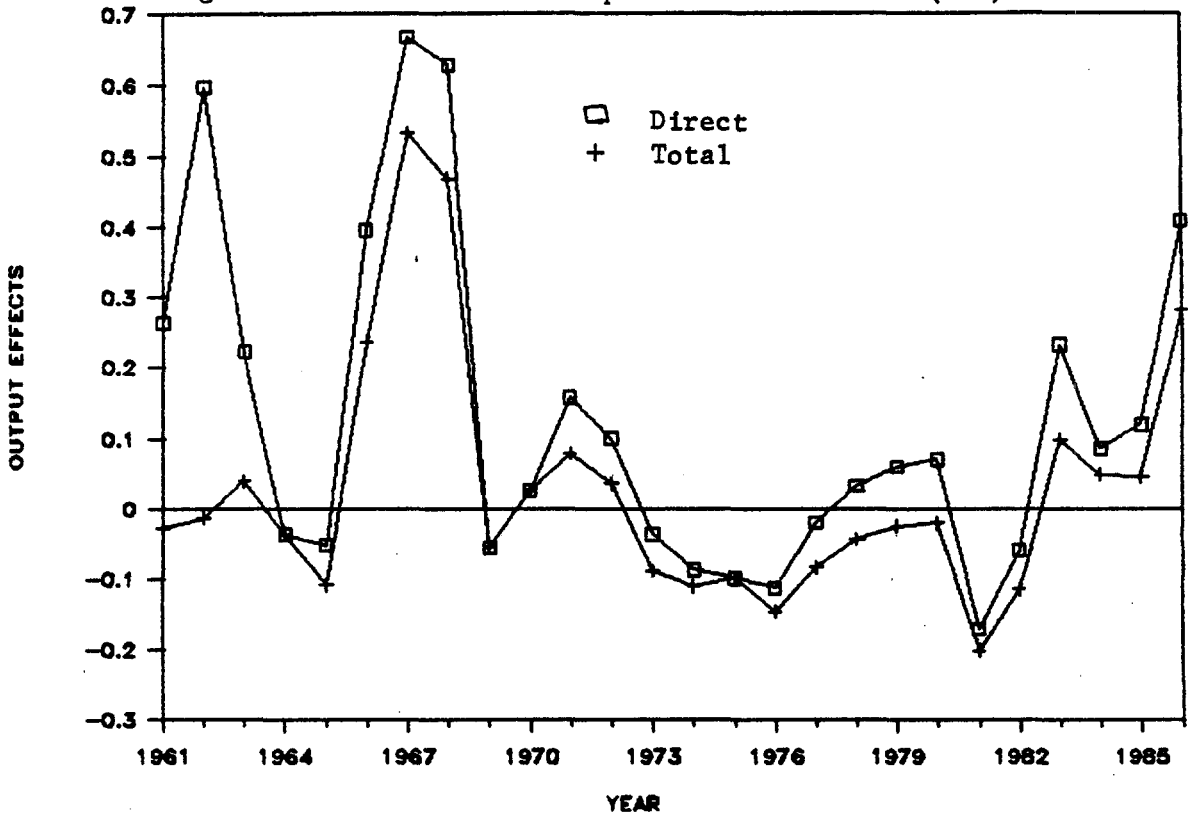


Figure 4.5b. Cumulative Output Effects: SUGAR (ISA)

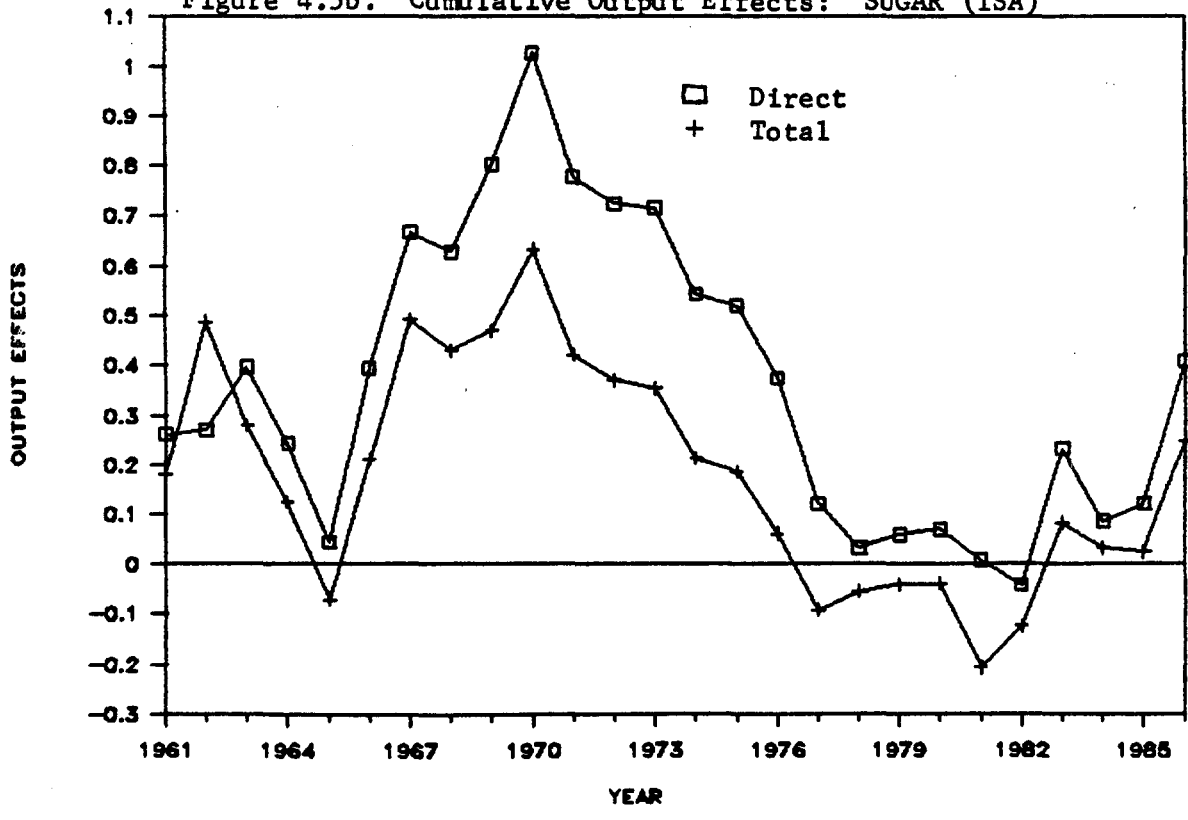


Figure 4.6a. Short Run Foreign Exchange Effects

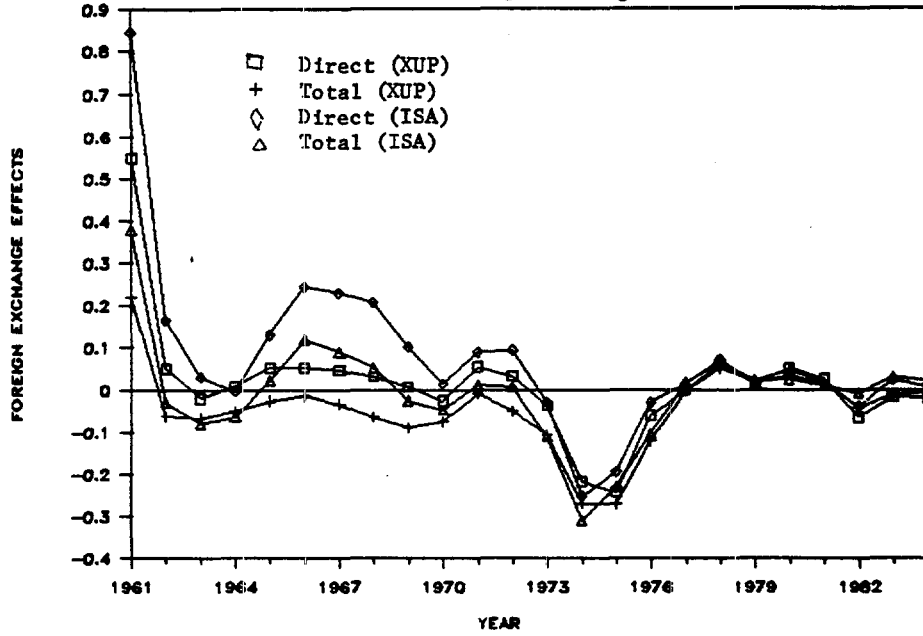


Figure 4.6b. Cumulative Foreign Exchange Effects

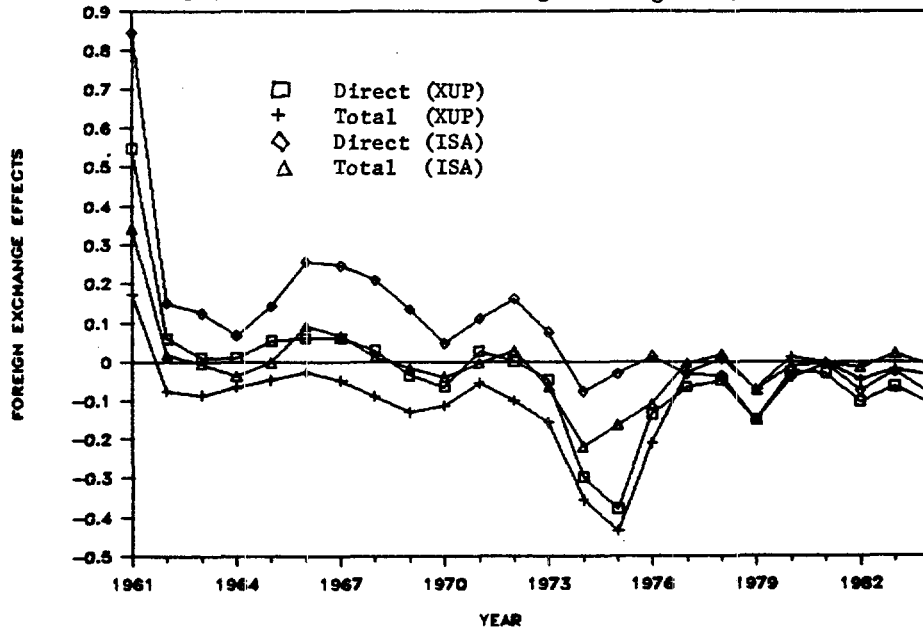


Table 5.1  
Export Tax/Duty Collectibles and Collections (Million Pesos)

Year	TOTAL		Agricultural Collectibles	Sugar	Molasses	Coconut Products	Fruits	Ratio of Export Tax and Premium Duty to Value of Export			
	Collectibles	Collections						Sugar	Molasses	Coconut Products	Fruits
1970		343.0									
1971		448.0									
1972		466.0									
1973		761.0									
1974		1527.6									
1975		1355.5									
1976	538.8	567.5	518.4	284.23	7.02	194.70	19.86	0.09	0.04	0.05	0.03
1977	606.7	598.6	572.8	198.09	9.80	329.54	22.20	0.06	0.07	0.06	0.06
1978	538.1	427.5	497.6	92.19	9.76	366.37	16.38	0.06	0.08	0.05	0.05
1979	792.5	677.7	745.7	108.12	21.45	557.91	38.67	0.03	0.11	0.07	0.04
1980	2496.8	472.6	2268.9	2005.18	64.81	142.25	43.70	0.21	0.15	0.06	0.03
1981	1909.7	254.2	1732.3	1634.43	51.38	1.71	36.70	0.20	0.17	0.08	0.03
1982	476.9	224.2	330.3	261.08	25.47	12.36	25.52	0.06	0.10	0.02	0.04
1983	310.2	253.9	65.4			3.49	53.85			0.07	0.04
1984	1532.7	1518.7	1327.2			796.63	156.72			0.06	0.04

NOTES:

1. Fruits consists mainly of bananas and canned pineapples
2. The total includes export taxes from both agricultural and non-agricultural exports

Source of Basic Data: Aduana (Annual Reports of the Bureau of Customs)

Table 5.2  
Tariff and Tax Due from Imported Selected Agricultural Products and Inputs

Year	Corn Grain	Wheat	Wheat Flour	Cotton	Soybean Meal	Fertilizers	Agricultural Machineries
1968	90.30	10392.70	9882.35	2406.00	2834.70	5026.80	1206.95
1969	586.20	14270.35	2724.75	3363.00	2053.55	5199.80	726.85
1970	532.50	21894.00	717.45	4908.60	4391.80	6269.90	748.75
1971	20.50	29352.90	951.16	8065.85	5582.50	9729.00	1304.95
1972	34.75	42051.50	1203.00	8178.90	5413.25	9087.55	1976.55
1973	13480.00	45277.00	2925.70	14627.90	6210.60	21320.10	1822.30
1974	13509.70	53516.45	3567.25	24611.20	8808.35	49342.95	3292.15
1975							
1976	129.50	93285.10	8385.90	60588.00	38116.50	54463.90	4188.30
1977	229.90	97231.50	5412.60	42701.50	27699.10	37704.00	2486.70
1978	295.60	75636.00	8951.30	79538.00	24186.10	34161.20	3177.70
1979	506.40	149608.90	11243.70	78834.30	35839.70	104806.20	3894.10
1980	3830.30	21433.60	9652.40	63335.60	1376.60	164040.60	2890.00
1981	219386.30	92318.80	10423.30	76208.50	373.40	136519.70	3489.20
1982	218177.70	92631.40	12936.60	32875.30	73990.10	117203.20	5653.10
	Ratio of Tariff and Tax Due to Value of Imports						
1968	0.33	0.05	0.47	0.04	0.34	0.09	0.15
1969	0.27	0.11	0.23	0.04	0.26	0.13	0.15
1970	0.64	0.12	0.18	0.11	0.30	0.13	0.11
1971	0.20	0.11	0.15	0.08	0.19	0.16	0.13
1972	0.17	0.10	0.13	0.09	0.19	0.21	0.16
1973	0.35	0.22	0.20	0.08	0.13	0.24	0.17
1974	0.82	0.16	0.32	0.19	0.17	0.29	0.23
1975	0.86	0.18	0.41	0.20	0.18	0.23	0.21
1976	0.87	0.20	0.42	0.19	0.19	0.30	0.22
1977	0.87	0.20	0.42	0.20	0.17	0.29	0.20
1978	0.87	0.20	0.39	0.18	0.15	0.29	0.20
1979	0.90	0.20	0.44	0.22	0.21	0.32	0.24
1980	0.92	0.25	0.45	0.24	0.18	0.32	0.25
1981	0.91	0.19	0.40	0.15	0.14	0.30	0.42
1982	0.69	0.11	0.49	0.24	0.18	0.35	0.19

Table 5.3  
Expenditure Effects of Agricultural Pricing Policy (in Million Pesos)

Year	Production Rice <sup>1</sup>	Subsidy Corn <sup>1</sup>	Sub-total	Consumption Coconut Products <sup>2</sup>	Subsidy Rice <sup>3</sup>	Sub-total	Fertilizer Subsidy to Manuf Importers <sup>5</sup>	Subsidy Foregone Import Levies <sup>6</sup>	Sub-total	Irrigation Direct Government Subsidy to NIA <sup>7</sup>	Subsidy Provided by FSOC <sup>8</sup>	Sub-total	Total Input Subsidies	TOTAL SUBSIDIES
1970	2.0		2.0							76.3		76.3	76.3	78 <sup>a</sup>
1971	.0		.0							121.5		121.5	121.5	121 <sup>6</sup>
1972	nil		nil							181.6		181.6	181.6	181 <sup>6</sup>
1973	1.7		1.7	112.4		112.4	46.5	21.3	67.8	302.9		302.9	370.7	484 <sup>7</sup>
1974	0.0	3.3	3.3	513.5	50.5	563.9	68.4	49.3	117.7	545.2		545.2	662.9	1230 <sup>4</sup>
1975	23.3	.0	23.3	51.3	11.4	62.7	332.7	171.9	504.6	800.9		800.9	1305.5	1391 <sup>6</sup>
1976	36.4	2.8	41.2	139.7	30.6	170.3	108.3	54.5	162.8	808.2	15.3	823.5	986.2	1197 <sup>8</sup>
1977	76.0	0.6	76.5	487.3	20.2	507.4	55.2	37.7	92.9	921.2	54.4	975.6	1066.5	1654 <sup>4</sup>
1978	83.0	4.3	87.2	312.4	12.3	324.7	117.0	34.2	151.2	1344.8	45.0	1389.8	1540.9	1952 <sup>8</sup>
1979	250.0	0.0	250.0	143.0	12.8	155.8	15.0	101.8	116.8	1756.0	18.9	1774.9	1891.7	2297 <sup>6</sup>
1980	159.8	1.3	161.1		0.0	0.0	283.0	164.0	447.0	1990.7		1990.7	2437.8	2598 <sup>8</sup>
1981	180.0	1.7	181.7		12.2	12.2	569.6	136.5	706.1	2101.3		2101.3	2807.4	3001 <sup>3</sup>
1982	194.8	0.4	195.2		58.6	58.6	444.3	117.2	561.5	1970.9	6.4	1977.3	2538.8	2792 <sup>6</sup>
1983	208.2	6.0	214.2		71.9	71.9					6.8			
1984	185.5		185.5								6.8			

- 1 Computed by multiplying margins of NFA purchase price and average producer prices by the volume of domestic procurement.  
2 Subsidies for coconut-based products, i.e., edible oil, laundry bar soap, and copra meal; Source: Crisologo, L. MA Thesis, UP School of Economics.  
3 Computed by multiplying margins of retail and NFA selling prices with volume of market injections.  
4 January to June only.  
5 Cash subsidy claims filed by manufacturers/importers under the cash subsidy scheme by the FPA.  
6 Tariff/duties due as computed by the Bureau of Customs.  
7 Irrigation investment less collections on irrigation fees; 1966-1975 collections of irrigation fees are estimated by applying the average share to total irrigation investment during 1976-1984 on the total irrigation expenditures during 1966-1975.  
8 Subsidies provided by the FSOC to finance communal pumps.  
<sup>a</sup> NEDA estimates

Table 5.4  
 Net Income From Operations of the National Food Authority  
 (in million pesos)

	1976	1977	1978	1979	1980	1981	1982	1983	1984
Gross Profit <sup>†</sup>									
Rice	20.5	33.4	41.6	(23.7)	(31.1)	(2.3)	(6.6)	} 422.8	} 1,623.4
Corn <sup>**</sup>	2.3	17.6	15.9	(5.6)	(21.4)	(10.9)	65.4		
Wheat	82.2	64.0	73.1	281.7	48.3	134.3	263.4		
Other Grains	2.8	0.6	0.8	48.7	56.0	78.9	107.1		
Nongrains						16.8	13.8	(19.3)	46.6
<u>Total</u>	107.8	115.6	131.4	301.0	51.8	216.8	443.1	463.4	1,670.0
Less: Administrative and Operating Expenses	167.6	216.3	284.1	307.3	416.1	446.8	578.8	952.4	1,847.2
Net Income (Loss) from Operations	(59.8)	(100.7)	(152.7)	(6.3)	(364.3)	(230.1)	(135.7)	(489.0)	(177.2)

<sup>†</sup> Sales minus Cost of Sales; Negative values shown in parentheses

<sup>\*\*</sup> White and yellow corn, locally produced and imported

Source of Data:

National Food Authority; Government Corporate Affairs,  
 Office of the Prime Minister

Table 5.5  
National Trading Corporation (NASUTRA)  
Statement of Income, 1978-1983  
(In million pesos)

	1978	1979	1980	1981	1982	1983
Net Sales	2,946.4	3,654.0	6,740.7	7,069.2	7,238.0	7,139.7
Less:						
Cost Sales	2,836.8	3,366.8	5,302.2	5,447.7	6,665.5	6,130.6
Gross Profit on Sales	109.5	285.2	1,438.5	1,621.5	572.5	1,009.1
Less: Expenses						
Trading	442.1	649.7	1,187.8	1,204.4	878.3	972.2
Administrative	9.4	13.6	25.1	40.5	52.1	59.2
Financial	260.2	265.7	375.6	294.7	443.6	520.4
Total Expenses	731.7	929.0	1,588.5	1,529.6	1,374.0	1,551.8
Net Operating profit (loss)	(622.2)	(643.8)	(150.0)	91.9	(801.5)	(542.7)
Add:						
Other income	37.5	40.5	191.6	44.3	128.4	98.2
Net Income	(584.7)	(603.3)	41.6	136.2	(673.1)	(444.5)

Source: NEDA, Sugar Industry Study (1985), Annex 4.31 based on CDA Annual Reports

Table 5.6  
Budgetary Effects of Agricultural Pricing Policy

Year	Revenue Effects	Expenditure Effects*	Net Effects	Revenue Effects National Gov't Revenues	Expenditure Effects National Gov't Expenditures	Net Effects Budget Deficit**
	(in million pesos)			(in percent)		
1960	16.5	5.7	10.8	1.5	0.4	(6.6)
1961	14.2	6.9	7.3	1.1	0.5	(4.4)
1962	24.6	6.9	17.7	1.6	0.4	(11.0)
1963	37.1	6.7	30.4	2.1	0.3	(16.7)
1964	36.3	-	36.3	1.9	-	(22.1)
1965	35.0	0.04	34.9	1.8	0.002	(16.1)
1966	30.7	13.5	17.2	1.4	0.6	(8.0)
1967	37.9	20.8	17.1	1.5	0.8	(7.7)
1968	30.8	14.7	16.1	1.1	0.4	(3.9)
1969	29.0	29.6	(0.6)	0.9	0.8	0.1
1970	203.6	78.3	125.3	5.1	1.9	(56.3)
1971	311.7	121.5	190.2	6.2	2.4	(10.7)
1972	229.2	181.6	47.6	3.6	2.7	(10.8)
1973	347.3	484.7	(137.4)	3.7	4.6	12.4
1974	1,624.0	1,230.1	393.9	8.4	7.4	14.9
1975	992.8	1,391.5	(398.7)			
1976	1,200.0	1,197.8	2.2	6.6	5.4	(0.05)
1977	1,575.8	1,654.4	(78.6)	8.5	7.3	2.0
1978	1,723.6	1,952.8	(229.2)	7.2	7.1	6.7
1979	1,439.1	2,297.5	(858.4)	4.8	7.0	32.8
1980	3,388.8	2,598.9	789.9	9.8	7.0	(35.2)
1981	2,869.2	3,001.3	(132.1)	9.3	6.4	(2.8)
1982	875.9	3,040.8	(2,164.9)	2.3	6.2	21.4

\* This is the sum of import duties, export taxes and premia and the CCSF levy

\*\* Consist of production subsidy in rice and corn; consumption subsidy in coconut products and rice (1974-1982); fertilizer and irrigation subsidies

\*\*\* Budget figures were all in deficit except in 1974

Table 5.7  
Tax Revenues From Agriculture  
(in Thousand Pesos)

Year	Share of Agri. to total			Total Agricul. taxes			Import Duties	Export Duty/ Premium	CCSF Levy	Sub-total (import duties export duties and CCSF)
	1	2	3	1	2	3				
1960	4.8	2.1	2.0	55421	23675	23035	16456			16456
1	4.1	1.7	1.7	52489	21993	21724	14226			14226
2	4.0	1.7	1.7	63352	27103	26832	24563			24563
3	4.7	2.1	2.1	88541	39878	39449	37117			37117
4	4.9	2.5	2.5	93923	47274	46997	36327			36327
5	4.8	2.2	2.2	91835	42881	42527	34987			34987
6	4.5	1.9	1.8	97089	39878	39673	30742			30742
7	4.1	1.9	1.9	102492	48561	48266	37885			37885
8	4.5	1.4	1.4	127320	41019	40677	30840			30840
9	3.4	1.2	1.2	108383	39546	39041	29025			29025
1970	7.6	5.4	5.4	300178	216038	215195	17669	185882		203551
1	8.6	6.7	6.6	423329	326029	325091	25654	286001		311655
2	5.4	3.8	3.8	338976	241801	240824	25894	203332		229226
3	5.4	4.0	4.0	498184	369619	367887	60387	240173	46775	347335
4	13.9	12.6	12.6	1816559	1652690	1650457	27903	532472	1063586	1623961
5	9.7	8.5	8.5	1467846	1293117	1290764	46340	4699458	476561	992846
6	8.3	7.3	7.3	1412323	1236619	1233772	64776	5125078	622698	1199981
7	10.0	8.6	8.5	1886183	1619854	1616427	45189	572752	957814	1575755
8	9.2	7.7	7.7	2117089	1775555	1773301	82716	505738	1135163	1723617
9	6.6	5.2	5.2	1925299	1512247	1503398	82728	745748	610665	1439141
1980	11.7	10.1	10.1	4025834	3486333	3477959	66226	2268945	1053596	3388767
1	10.1	8.3	8.3	3618742	2985404	2976069	79698	1732327	1057151	2869176
2	4.3	2.4	2.4	1659587	947229	939474	38528	330300	507074	875902

- 1 = with other taxes, with tobacco inspection fees
- 2 = without other taxes, with tobacco inspection fees
- 3 = without other taxes, without tobacco inspection fees

‡ Does not include premium duty

Note: The "other taxes" are motor vehicle fees, individual and corporate income tax and local tax.

Table 5.7 cont'd  
Tax Revenues From Agriculture

Year	Tobacco Inspection	Millers Taxes	Documentary Stamp Tax	Motor vehicle Fees	Individual Income Tax	Corporate Income tax	Local Tax
1960	640	6579	3177	2374	8134	2213	15878
1	269	7498	3448	2568	5447	2181	16852
2	271	2269	3877	2887	9141	1740	18604
3	429	2332	4636	3453	12466	2485	21623
4	277	10670	4788	3566	10154	4703	23438
5	354	7990	5836	4012	4985	8777	25344
6	205	8931	5908	4400	4743	13472	28688
7	295	10381	6754	5030	7003	2984	32160
8	342	9837	7854	5849	26038	9307	37253
9	505	10016	9212	6861	4424	4993	43347
1970	843	11644	10126	8061	7374	7688	50891
1	938	13706	11184	9824	8528	6768	60996
2	977	11598	11786	11199**	12590	14423	47177
3	1732	20552	19152	12575**	9320	33226	54292
4	2233	26496	30560	13950**	18075	41465	59819
5	2353	27918	33056	15325**	23837	33587	68924
6	2847	33791	37515	16701**	27692	38608	55188
7	3427	40672	74028	18076	52781	31540	89904
8	2254	49684	105181	5180	98388	53096	79689
9	8849	64257	122351	19530	122999	58126	90046
1980	8374	89192	149718	27860	129666	76757	155500
1	9335	106893	175870	44240	153717	79173	180338
2	7755	63572	204803	53270	150425	90503	213357

\*\*Extrapolated.

Table 5.8  
Government Expenditures in Agriculture  
(in thousand pesos)

YEAR	INFRASTRUCTURE		Total	RESEARCH and EXTENSION	AGRICULTURAL SUPPORT SERVICES			Total	TOTAL GOVERNMENT EXPENDITURES ON AGRICULTURE
	Rural Roads and Bridges	Irrigation & Storage/ Warehouses			Stabilization	Agrarian Reform/ Land Mgmt.	General Agric'l Adminis-		
1960	9,502	384	9,886	42,289	11,640	21,218	1,392	34,250	96,425
1961	10,413	387	10,800	38,051	12,024	26,328	1,617	39,969	88,820
1962	10,471	715	11,186	30,602	8,772	22,749	1,630	33,151	74,939
1963	7,513	80,769	88,282	39,493	1,605	24,609	1,189	27,403	155,178
1964	9,281	9,697	18,978	47,245	74,250	37,337	1,283	112,870	179,093
1965	11,955	47,350	59,305	51,366	1,670	51,882	982	54,534	155,205
1966	11,529	19,850	31,378	57,300	12,643	52,456	1,311	66,410	155,088
1967	9,739	21,600	31,339	55,887	17,890	52,000	1,420	71,310	158,536
1968	19,522	33,800	53,322	49,468	14,715	55,365	1,656	71,736	174,526
1969	19,933	79,400	99,333	56,776	18,918	68,022	2,312	89,252	245,361
1970	51,256	126,350	177,606	59,619	21,398	78,288	2,336	102,022	339,247
1971	19,890	188,950	208,840	72,007	12,132	92,347 <sup>86</sup>	2,275	106,754	387,601
1972	16,805	315,050	331,855	90,419	12,808	101,829	4,026	118,663	540,937
1973	17,469	567,100	584,569	127,640	10,521	133,575	5,167	149,263	861,472
1974	14,104	839,918	854,012	229,341	25,352	228,776	6,714	260,842	1,344,195
1975	47,344	848,719	896,063	262,921	29,303	304,172	12,114	345,589	1,504,573
1976	51,951	960,550	1,012,501	345,730	39,159 <sup>***</sup>	270,263	10,382	319,804	1,678,035
1977	51,569	1,393,850	1,445,419	375,490	31,927 <sup>***</sup>	288,060	12,728	332,715	2,153,624
1978	53,721	1,833,050	1,886,771	407,940	43,006 <sup>***</sup>	358,172	19,243	420,421	2,715,132
1979	63,272*	2,073,300	2,136,572	445,935*	36,774 <sup>***</sup>	478,189	28,944	543,907	3,126,414
1980	66,176	2,177,850	2,244,026	557,351	70,299	534,423	71,907	676,629	3,478,006
1981	123,211 <sup>***</sup>	2,351,450 <sup>**</sup>	2,474,661	738,456 <sup>**</sup>	91,033	648,387	149,432	888,852	4,101,969
1982	166,280 <sup>***</sup>	2,123,400 <sup>**</sup>	2,289,680	718,896 <sup>**</sup>	89,115	627,112	176,809	893,036	3,901,612

\* Interpolated

\*\* Budget estimates

\*\*\* Figures for NFA (COE) were interpolated by adjusting 1975 figures with corresponding CPI (1975 = 100)

Table 5.8 cont'd  
Percentage Distribution of Government Expenditures in Agriculture

YEAR	<u>Infrastructure</u>		Research and Extension	<u>Other Agricultural Support Services</u>		
	Rural Roads and Bridges	Irrigation & Storage/ Warehouse		Stabilization	Agrarian Reforma	General Governament Administration
1960	10.99	0.45	48.93	13.47	24.55	1.60
1961	11.72	0.44	42.84	13.54	29.64	1.82
1962	13.97	0.95	40.84	11.70	30.36	2.17
1963	4.84	52.05	25.45	1.03	15.86	0.77
1964	5.18	5.41	26.38	41.46	20.85	0.71
1965	7.24	28.66	31.09	1.01	31.40	0.60
1966	7.43	12.80	36.95	8.15	33.82	0.85
1967	6.14	13.62	35.25	11.28	32.80	0.90
1968	11.18	19.37	28.34	8.43	31.72	0.96
1969	8.12	32.36	23.14	7.71	27.72	0.95
1970	15.11	37.24	17.57	6.31	23.08	0.69
1971	5.13	48.75	18.58	3.13	23.82	0.59
1972	3.11	58.24	16.72	2.37	18.82	0.74
1973	2.03	65.83	14.82	1.22	15.50	0.61
1974	1.05	62.48	17.06	1.89	17.02	0.50
1975	3.15	56.42	17.47	1.95	20.22	0.80
1976	3.10	57.24	20.60	2.33	16.10	0.63
1977	2.39	64.72	17.44	1.48	13.38	0.58
1978	1.97	67.51	15.02	1.58	13.19	0.72
1979	2.02	66.32	14.26	1.18	15.30	0.92
1980	1.90	62.62	16.02	2.02	15.36	2.08
1981	3.00	57.32	18.00	2.22	15.81	3.64
1982	4.26	54.42	18.42	2.28	16.07	4.55

Table 5.9  
Sardido and Evenson Estimates of  
Government Expenditures on Research and Extension  
in the Philippines, 1960-1984

Year	Expenditures (in thousand pesos at current prices)		% Share to Total National Government Expenditures	
	Research	Research & Extension	Research	Research and Extension
1960	2,479	13,694	0.19	1.05
1961	2,421	13,338	0.17	0.93
1962	3,256	15,632	0.19	0.94
1963	3,773	19,710	0.19	1.00
1964	4,035	20,567	0.19	0.99
1965	4,905	27,983	0.23	1.30
1966	4,606	26,008	0.19	1.09
1967	5,941	28,500	0.22	1.04
1968	6,213	28,413	0.19	0.89
1969	8,752	33,482	0.23	0.87
1970	10,318	32,614	0.24	0.77
1971	12,936	43,514	0.26	0.87
1972	16,582	55,736	0.24	0.82
1973	24,809	79,110	0.24	0.75
1974	39,800		0.24	
1975	40,000		0.21	
1976	45,500		0.20	
1977	61,200		0.27	
1978	47,400		0.17	
1979	74,300		0.22	
1980	83,700		0.23	
1981	89,400		0.19	
1982	91,100		0.19	
1983	101,200		0.19	
1984	131,400		0.22	

Source of Data: M. Sardido and R. Evenson, "Public Investment in  
Agricultural Research and Extension in the  
Philippines" mimeographed, 1975, 1986

Table 5.10  
Government Expenditures on Agriculture

Year	Amount (Pmillion)	Share to Total National Gov't. Expenditures	Share to Gross Value Added in Crops & Livestock
1960	86.4	6.63	3.12
1961	88.8	6.17	2.93
1962	74.9	4.51	2.42
1963	155.2	7.92	4.44
1964	179.1	8.64	4.58
1965	165.2	7.67	3.84
1966	155.1	6.52	3.22
1967	158.5	5.79	3.04
1968	174.5	5.32	2.92
1969	245.4	6.40	3.62
1970	339.2	8.00	4.10
1971	387.6	7.74	3.73
1972	540.9	8.00	4.77
1973	861.5	8.22	5.60
1974	1,344.2	8.10	6.39
1975	1,504.6	7.90	6.08
1976	1,678.0	7.51	6.06
1977	2,153.6	9.53	7.07
1978	2,715.1	9.87	7.96
1979	3,126.4	9.51	7.65
1980	3,478.0	9.42	7.94
1981	4,102.0	8.71	8.30
1982	3,901.6	8.00	7.13

Table 5.11  
The Agricultural Budget  
(in million pesos)

	Tax Revenues from Agriculture		Gov't Expenditures on Agriculture		Revenues - Expenditures	
	with other taxes	without other taxes	with rural roads & bridges	without rural roads & bridges	1	2
1960	55.4	23.7	86.4	76.9	-31.0	-53.2
1961	52.5	22.0	88.8	78.4	-36.3	-56.4
1962	63.4	27.1	74.9	64.5	-11.5	-37.4
1963	88.5	39.9	115.2	147.7	-66.7	-107.8
1964	93.9	47.3	179.1	169.8	-85.2	-122.5
1965	91.8	42.9	165.2	153.2	-73.4	-110.3
1966	97.1	39.9	155.1	143.6	-58.0	-103.7
1967	102.5	48.6	158.5	148.8	-56.0	-100.2
1968	127.3	41.0	174.5	155.0	-47.2	-114.0
1969	108.4	39.5	245.4	225.4	-137.0	-185.9
1970	300.2	216.0	339.2	288.0	-39.0	-72.0
1971	423.3	326.0	387.6	367.7	-35.7	-41.7
1972	339.0	241.8	540.9	524.1	-201.9	-282.3
1973	498.2	369.6	861.5	844.0	-363.3	-474.4
1974	1816.6	1652.7	1344.2	1330.1	-472.4	-322.6
1975	1467.8	1293.1	1504.6	1457.2	-36.8	-164.1
1976	1412.3	1236.6	1678.0	1626.1	-265.7	-389.5
1977	1886.2	1619.8	2153.6	2102.0	-267.4	-482.2
1978	2117.1	1775.6	2715.1	2661.4	-598.0	-885.8
1979	1925.3	1512.2	3126.4	3063.1	-1201.1	-1550.9
1980	4025.8	3486.3	3478.0	3411.8	547.0	74.5
1981	3618.7	2985.4	4102.0	3979.8	-483.3	-993.4
1982	1659.6	947.2	3901.6	3735.3	-2242.0	-2788.1

1 = Tax Revenue with other taxes - Government Expenditures with rural roads and bridges  
2 = Tax Revenues without other taxes - Government Expenditures without rural roads and bridges

Table 5.12  
Government Investment (GIB) and Total Expenditure (GEB) Bias

Year	NI		GIB	GE		GEB
	GDP / GDP A	GI / GI A		GE / GE A		
1960	0.1984	0.1328	0.67	0.0507	0.26	
1961	0.1723	0.1054	0.61	0.0426	0.25	
1962	0.2277	0.1129	0.50	0.0375	0.16	
1963	0.1966	0.2940	1.50†	0.0564	0.29	
1964	0.1912	0.1270	0.66	0.0729	0.38	
1965	0.1855	0.2838	1.53	0.0592	0.31	
1966	0.1842	0.2229	1.21	0.0486	0.26	
1967	0.1936	0.1397	0.72	0.0414	0.21	
1968	0.2121	0.1775	0.84	0.0403	0.19	
1969	0.2138	0.2236	1.05	0.0445	0.21	
1970	0.2314	0.3413	1.48	0.0708	0.31	
1971	0.2101	0.2994	1.42	0.0641	0.31	
1972	0.2138	0.2507	1.17	0.0773	0.36	
1973	0.2543	0.5161	2.03	0.1040	0.41	
1974	0.3192	0.5654	1.77	0.0880	0.28	
1975	0.3219	0.4016	1.25	0.0672	0.21	
1976	0.2301	0.2994	1.30	0.0722	0.31	
1977	0.2257	0.3608	1.60	0.0783	0.35	
1978	0.2138	0.3359	1.59	0.1155	0.54	
1979	0.2012	0.3092	1.54	0.1230	0.61	
1980	0.2006	0.2167	1.09	0.1068	0.53	
1981	0.1956	0.1548	0.79	0.1055	0.54	
1982	0.1698	0.1524	0.90	0.0956	0.56	

† There was a substantial capital outlay on storage and warehousing during the year.

GI - National government capital expenditures (outlay)  
Data were taken from the NEDA, Philippine Statistical Yearbook except for 1973 and 1974 which were taken from the IMF, Government Finance Statistics Yearbook

NI  
GDP - is equal to actual GDP plus net transfers out of  
A A  
agriculture based on the XUP border price computations

Table 5.13  
Government Personnel by Branch of Service or Category of Service  
(in Thousands)

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A. By Branch of Government

Year	Total	National Government	Corporation	Local Government	Schools	State
						Colleges & Universities
1961	361.3	182.4	n.d.	63.4	114.7	0.7
1964	415.1	201.4	n.d.	71.4	140.4	1.9
1968	481.3	224.7	n.d.	84.0	171.0	1.6
1973	569.4	218.1	n.d.	93.8	250.0	7.6
1978	1028.7	445.7	93.7	170.5	308.1	10.6
1982	1180.0	554.6	118.0	177.0	295.0	35.4
1985	1321.7	634.4	132.2	198.3	330.4	26.4

B. By Category of Service and Status of Appointment

Year	Total	Classified/Competitive		Unclassified/Noncompetitive	
		Permanent	Temporary/ Provisional	Permanent	Temporary
1961	361.2	163.6	96.0	27.4	175.9
1964	415.1	184.6	113.5	38.7	195.3
1968	481.3	231.0	158.2	37.9	146.2
1973	569.4	305.9	184.1	49.2	149.7
1978	1028.7	644.3	211.6	49.9	294.5
1982	1180.0	709.0	202.6	49.8	218.6
1985 <sup>a/</sup>	1321.7	835.4	235.5	50.2	200.9

=====

Note: n.d. - no (separate) data

<sup>a/</sup> Projected.

For 1979-1985, the classification by category of service and status of appointment was changed to career (permanent, temporary or provisional) and non-career (regular, casual and contractual). Regular non-career were assumed in the table to be the same as unclassified permanent.

Source: Civil Service Commission, Planning and Research Division (unpublished data).

Notes: (to tables)

1. Import Duties:

1960-1967

This is the sum total of tariffs from imports of agricultural products and agricultural inputs, special import duties, and other custom fees and charges. Tariff revenues from imports of agricultural products were estimated from the specific tariff rates on, and volume of imports of wheat flour, unmilled corn, corn meal, wheat grain, and soybeans. Data on volume of imports of wheat flour, unmilled corn and corn meal were taken from PCARRD Rice Statistics. Data on volume of imports of wheat grain and soybean were taken from Philippine Food Balance Sheet. Tariff revenues from imports of agricultural inputs, special import duties and other custom fees and charges were taken from Macaranas (1973), specifically Table E.1 (column 2), Table B.10 (column 2), and Table B.14 (column 4) respectively.

1968-1982

Data taken from Bureau of Customs, Statistics Division.

2. Export Taxes and Premium Duty:

1970-1975

Data for sugar and coconut products during 1970-1973 were taken from Macaranas (1973) Table .. during 1974-1975 were estimated as the product of the export tax rate and the value of exports. Data for abaca, tobacco, pineapple and bananas were estimated as the product of the tax rate and the value of exports, by commodity.

1976-1982

Data are export tax collectibles as estimated by the Bureau of Customs. Data taken from the Statistics Division, Bureau of Customs.

3. CCSF Levy:

The officially available data is the total amount from August 1973 to August 1982, given in NEDA Coconut Study, Table . . . The levy was allocated annually using annual estimates based on the estimated average CCSF levy rate and the marketed copra output. The CCSF levy rates were taken from Clarete and Roumasset (1982). Marketed copra output is total coconut output in copra terms minus nuts consumed at home in copra terms; data from PCARRD Coconut Statistics and NEDA Coconut Study.

4. Tobacco Inspection Fees and Millers Taxes

1960-71 Data from Macaranas (1973), Table B.6, Column 4.

1972-1982

Estimated as follows: the average ratio of tobacco inspection fees/millers taxes to total BIR collections from 1978-1985 was multiplied to the total BIR collections from 1972-77; 1978-85 are actual figures obtained from the BIR Statistical Department.

5. Agricultural Share in Documentary Stamp Tax

1960-69 Data taken from Macaranas (1978), Table B.8, Column 2.

1970-82

This is equivalent to 30% of total documentary stamp tax collections from the BIR Statistical Department. The 30% is Macaranas estimate of the agriculture share to total documentary stamp tax.

6. Share of Agriculture in Motor Vehicle Fees

1960-71 Data from Macaranas, Table B.16, Column 2.

1972-82

Equivalent to 7 percent of the estimated total motor vehicle taxes during 1972-77 and the data from the IMF Government Finance Statistics Yearbook for 1978-82. The estimates for 1972-77 were extrapolated from the 1971 and 1979 figures.

7. Agricultural Share in Individual and Corporate Income Taxes

1960-71 Data taken from Macaranas, Table B.2, Columns 3 and 9.

1972-82

Estimated. The averages of Macaranas yearly allocators for agriculture (medium assumption) in individual and corporate income taxes respectively during 1965-71 were applied to the total individual and corporate income taxes taken from the BIR Statistical Department.

8. Agriculture Share in Local Taxes (Local taxes include land tax.)

1960-71 Data taken from Macaranas, Table III, 4, row 8.

1972-82 Estimated. The average ratio of local taxes from agriculture to the total local taxes during 1965-71 was applied to the annual total local tax revenues during 1972-82. Data on local tax revenues during 1960-82 were taken from the Philippine Statistical Yearbook, 1975 and 1985.

Notes (to tables)

1. Research and Extension. This is the sum of total expenditures for the Bureau of Animal Industry, Bureau of Soils, Bureau of Agricultural Economics, Bureau of Agricultural Extension, Fiber Industry Development Authority, Philippine Council for Agricultural Resources Research and Development, National Meat Inspection Commission, National Food and Agriculture Council and the Bureau of Plant Industry (less expenditures for the procurement and distribution of agricultural inputs).

2. Rural Roads and Bridges Total expenditures for provincial, municipal and barangay roads and bridges, adjusted by the ratio of GVA of crops and livestock to GDP. The adjustment was done to take into consideration that the roads and bridges are also used for other purposes and by people other than farmers. Data on expenditures are usually in the Ministry of Public Works and Highways.

3. Irrigation and Storage/Warehouse

Irrigation:

1960-64 This is the sum of total expenditures of the Irrigation Service Unit and the capital outlay of the National Irrigation Administration.

1965-82 Irrigation investment of the National Irrigation Administration, taken from C. David's data files.

Storage and Warehouse This is the capital outlay of the Rice and Corn Board, Rice and Corn Administration, National Grains Authority and National Food Authority as reported in the budget documents.

4. Stabilization This consists of the current operating expenses of the Rice and Corn Administration, Rice and Corn Board, National Grains Authority and National Food Authority; the funds for stabilization of the Philippine Coconut Authority, Philippine Sugar Commission and Sugar Quota Administration; the total expenditure of the Fertilizer and Pesticide Authority, and the expenditures for procurement and distribution of agricultural inputs of the Bureau of Plant Industry.

5. Agrarian Reform This consists of the total expenditures of the Office of the Minister, Ministry of Agrarian Reform; Land Tenure Administration, Land Authority, Land Registration Commission, Court of Agrarian Relations, Bureau of Lands, National Land Titles and Deeds and the Commission on Settlements and Land Problems.

6. General Agricultural Administration This consists of the total expenditures of the Office of the Secretary/Office of the Minister, Ministry of Agriculture and Food.

Sources of Data:

Data files of Manuel de Leon, taken from annual budget documents, Budget Commission; data files of Cristina David, taken from the National Irrigation Administration.

Table 6.1  
Nominal Transfers Due to Output and Input Price Interventions  
(as Percent Share of GVA and GNP)

	OUTPUT				INPUT			SUM
	Rice	Corn	Sugar	Copra	Fertilizer	Tractors	Credit	
<b>I. XUP</b>								
<b>A. Direct</b>								
1. Share of GVA								
1967-69	1.17	1.68	-2.42	-0.85	-1.33	-0.30		-2.05
1970-74	-3.24	0.78	-9.44	-2.46	-0.08	-0.24	0.50	-15.69
1975-79	-1.60	1.15	-7.88	-2.67	-0.82	-0.46	0.45	-12.60
1980-84	-0.92	1.10	-2.69	-3.95	-0.68	-0.06	1.18	-5.27
1967-84	-1.41	1.12	-5.96	-2.66	-0.66	-0.26	0.76	-9.66
2. Share of GNP								
1960-64	0.61	0.29	-0.36	0.03	-0.09			0.48
1965-69	0.49	0.32	-0.50	-0.13	-0.19	-0.05		-0.05
1970-74	-0.54	0.13	-1.58	-0.42	-0.01	-0.04	0.08	-2.42
1975-79	-0.27	0.19	-1.34	-0.45	-0.13	-0.07	0.07	-1.99
1980-84	-0.16	0.18	-0.44	-0.66	-0.11	-0.01	0.19	-0.84
1960-84	0.03	0.22	-0.84	-0.32	-0.11	-0.04	0.12	-0.97
<b>B. Total</b>								
1. Share of GVA								
1967-69	-3.45	0.78	-6.86	-4.93	-0.86	-0.30		-15.98
1970-74	-7.66	-0.33	-15.11	-6.35	0.68	-0.24	0.52	-30.93
1975-79	-6.78	-0.49	-15.08	-8.91	0.13	-0.46	0.46	-33.08
1980-84	-4.96	-0.09	-6.99	-8.94	0.14	-0.06	1.21	-20.38
1967-84	-5.96	-0.12	-11.47	-7.54	0.12	-0.26	0.78	-26.10
2. Share of GNP								
1960-64	-0.08	0.16	-1.16	-0.80	-0.02			-1.91
1965-69	-0.22	0.18	-1.25	-0.89	-0.12	-0.04		-2.33
1970-74	-1.27	-0.06	-2.53	-1.07	0.11	-0.03	0.08	-4.82
1975-79	-1.13	-0.08	-2.55	-1.48	0.02	-0.06	0.07	-5.22
1980-84	-0.82	-0.02	-1.15	-1.50	0.02	0.00	0.19	-3.28
1960-84	-0.71	0.04	-1.73	-1.15	0.00	-0.03	0.12	-3.51

Table 6.1 cont'd

	OUTPUT				INPUT			SUM
	Rice	Corn	Sugar	Copra	Fertilizer	Tractors	Credit	
<b>II. ISA</b>								
<b>A. Direct</b>								
<b>1. Share of GVA</b>								
1967-69	1.20	1.73	10.04	-0.87	-1.37	-0.31		10.43
1970-74	-3.62	0.80	-8.23	-2.62	-0.09	-0.25	0.50	-13.80
1975-79	-1.71	1.22	-2.64	-2.84	-0.83	-0.46	0.46	-6.81
1980-84	-1.00	1.12	-1.04	-4.06	-0.69	-0.06	1.18	-4.55
1967-84	-1.56	1.16	-1.63	-2.79	-0.68	-0.27	0.77	-5.25
<b>2. Share of GNP</b>								
1960-64	0.61	0.29	0.47	0.03	-0.10			1.30
1965-69	0.49	0.32	1.72	-0.13	-0.19	-0.05		2.16
1970-74	-0.54	0.13	-1.25	-0.42	-0.01	-0.04	0.08	-2.10
1975-79	-0.27	0.19	-0.42	-0.45	-0.13	-0.07	0.07	-1.07
1980-84	-0.16	0.18	-0.15	-0.66	-0.11	-0.01	0.19	-0.71
1960-84	0.03	0.22	0.07	-0.32	-0.11	-0.04	0.12	-0.09
<b>B. Total</b>								
<b>1. Share of GVA</b>								
1967-69	-3.55	0.80	8.29	-5.08	-0.88	-0.23		-0.65
1970-74	-8.33	-0.38	-13.67	-6.76	0.67	-0.18	0.52	-28.45
1975-79	-7.20	-0.52	-8.73	-9.46	0.13	-0.39	0.46	-25.70
1980-84	-5.16	-0.11	-5.19	-9.21	0.12	-0.03	1.21	-18.36
1967-84	-6.34	-0.15	-6.28	-7.91	0.11	-0.20	0.78	-20.25
<b>2. Share of GNP</b>								
1960-64	-0.08	0.16	-0.22	-0.80	-0.02			-0.97
1965-69	-0.22	0.18	1.42	-0.89	-0.12	-0.04		0.33
1970-74	-1.27	-0.06	-2.10	-1.07	0.10	-0.03	0.08	-4.39
1975-79	-1.13	-0.08	-1.38	-1.48	0.02	-0.06	0.07	-4.05
1980-84	-0.82	-0.02	-0.81	-1.50	0.02	0.00	0.19	-2.94
1960-84	-0.71	0.04	-0.62	-1.15	0.00	-0.03	0.12	-2.40

Table 6.2  
Real Transfers Due to Output and Input Price Interventions  
(as Percent Share of GVA and GNP)

	OUTPUT				INPUT			SUM
	Rice	Corn	Sugar	Copra	Fertilizer	Tractors	Credit	
<b>I. XUP</b>								
<b>A. Direct</b>								
<b>1. Share of GVA</b>								
1967-69	1.06	1.71	-2.62	-1.00	-1.31	-0.97		-3.12
1970-74	-3.26	0.87	-9.78	-2.38	-0.14	-1.03	0.50	-15.51
1975-79	-1.59	1.26	-8.12	-2.74	-0.85	-0.98	0.45	-12.57
1980-84	-0.96	1.13	-2.75	-4.03	-0.69	-0.28	1.18	-6.40
1967-84	-1.43	1.19	-6.17	-2.71	-0.68	-0.80	0.76	-10.10
<b>2. Share of GNP</b>								
1960-64	0.57	0.28	-0.42	-0.03	-0.09			0.31
1965-69	0.45	0.31	-0.53	-0.17	-0.18	-0.13		-0.25
1970-74	-0.48	0.14	-1.53	-0.38	-0.02	-0.16	0.08	-2.40
1975-79	-0.25	0.20	-1.29	-0.43	-0.13	-0.15	0.07	-1.99
1980-84	-0.15	0.18	-0.44	-0.65	-0.11	-0.04	0.19	-1.02
1960-84	-0.11	0.21	-0.95	-0.41	-0.11	-0.12	0.12	-1.07
<b>B. Total</b>								
<b>1. Share of GVA</b>								
1967-69	-3.99	0.72	-7.49	-5.48	-0.80	-0.18		-18.11
1970-74	-8.89	-0.53	-16.88	-7.24	0.75	-0.18	0.52	-33.70
1975-79	-7.61	-0.63	-16.31	-10.12	0.20	-0.17	0.46	-35.08
1980-84	-5.56	-0.24	-7.62	-9.77	0.20	-0.95	1.21	-22.09
1967-84	-6.79	-0.27	-12.58	-8.45	0.19	-0.14	0.78	-28.26
<b>2. Share of GNP</b>								
1960-64	-0.24	0.13	-1.33	-0.96	0.00			-2.40
1965-69	-0.33	0.16	-1.36	-1.00	-0.11	-0.14		-2.78
1970-74	-1.36	-0.08	-2.64	-1.14	0.12	-0.18	0.08	-5.25
1975-79	-1.19	-0.10	-2.58	-1.59	0.03	-0.17	0.07	-5.53
1980-84	-0.89	-0.04	-1.22	-1.59	0.03	-0.05	0.19	-3.56
1960-84	-0.94	-0.02	-1.95	-1.33	0.01	-0.13	0.12	-3.90

Table 6.2 cont'd

	OUTPUT				INPUT			SUM
	Rice	Corn	Sugar	Copra	Fertilizer	Tractors	Credit	
II. ISA								
A. Direct								
1. Share of GVA								
1967-69	0.52	1.61	9.83	-1.49	-1.25	-0.98		8.13
1970-74	-3.33	0.95	-7.74	-2.47	-0.12	-1.04	0.50	-13.55
1975-79	-1.63	1.25	-2.46	-2.77	-0.85	-0.98	0.46	-6.98
1980-84	-1.01	1.11	-0.98	-4.11	-0.68	-0.28	1.18	-4.76
1967-84	-1.25	1.24	-1.07	-2.94	-0.67	-0.80	0.77	-5.70
2. Share of GNP								
1960-64	0.55	0.28	0.44	-0.05	-0.08			1.13
1965-69	0.39	0.30	1.69	-0.23	-0.18	-0.13		1.82
1970-74	-0.49	0.14	-1.18	-0.39	-0.02	-0.19	0.08	-2.98
1975-79	-0.25	0.20	-0.39	-0.44	-0.13	-0.15	0.07	-1.10
1980-84	-0.16	0.18	-0.14	-0.66	-0.11	-0.04	0.19	-0.75
1960-84	0.01	0.22	0.08	-0.36	-0.10	-0.12	0.12	-0.20
B. Total								
1. Share of GVA								
1967-69	-4.52	0.62	7.98	-5.95	-0.78	-1.07		-3.71
1970-74	-8.96	-0.55	-14.19	-7.33	0.75	-1.12	0.52	-31.20
1975-79	-7.64	-0.64	-8.98	-10.14	0.19	-1.07	0.46	-27.82
1980-84	-5.61	-0.25	-5.56	-9.84	0.20	-0.52	1.21	-20.18
1967-84	-6.34	-0.15	-5.82	-8.35	0.19	-0.87	0.78	-22.62
2. Share of GNP								
1960-64	-0.25	0.12	-0.34	-0.97	0.00			-1.44
1965-69	-0.39	0.15	1.36	-1.06	-0.10	-0.15		-0.19
1970-74	-1.37	-0.08	-2.18	-1.16	0.12	-0.20	0.08	-4.83
1975-79	-1.20	-0.10	-1.42	-1.59	0.03	-0.17	0.07	-4.38
1980-84	-0.90	-0.04	-0.87	-1.60	0.03	-0.05	0.19	-3.24
1960-84	-0.82	0.01	-0.69	-1.28	0.01	-0.13	0.12	-2.82

Table 6.3  
Nominal Transfers Using Value Added Approach  
(as Percent Share of GVA and GNP)

	Rice Irrigated	Rice Rainfed	Corn	Sugar	Copra	SUM
<b>I. XUP</b>						
<b>A. Direct</b>						
<b>1. Share of GVA</b>						
1971-74	-1.39	-1.11	0.70	-5.02	-2.07	-8.93
1975-79	-0.69	-0.53	0.62	-4.21	-2.82	-8.40
1980-84	-0.35	-0.28	0.71	-1.28	-4.04	-4.82
1971-84	-0.77	-0.61	0.67	-3.39	-3.04	-7.27
<b>2. Share of GNP</b>						
1971-74	-0.20	-0.16	0.11	-0.78	-0.32	-1.36
1975-79	-0.11	-0.08	0.10	-0.67	-0.44	-1.33
1980-84	-0.05	-0.04	0.11	-0.20	-0.65	-0.77
1971-84	-0.12	-0.09	0.11	-0.53	-0.48	-1.14
<b>B. Total</b>						
<b>1. Share of GVA</b>						
1971-74	-3.46	-2.84	-1.12	-9.17	-6.05	-23.34
1975-79	-3.00	-2.37	-1.67	-4.67	-9.65	-21.41
1980-84	-2.29	-1.47	-1.62	-2.77	-9.43	-16.54
1971-84	-2.88	-2.18	-1.49	-5.28	-8.54	-20.22
<b>2. Share of GNP</b>						
1971-74	-0.52	-0.43	-0.17	-1.41	-0.94	-3.59
1975-79	-0.47	-0.37	-0.26	-0.74	-1.51	-3.37
1980-84	-0.37	-0.23	-0.26	-0.43	-1.53	-2.66
1971-84	-0.45	-0.34	-0.24	-0.82	-1.36	-3.18

Table 6.3 cont'd

	Rice Irrigated	Rice Rainfed	Corn	Sugar	Copra	SUM
<b>II. ISA</b>						
<b>A. Direct</b>						
<b>1. Share of GVA</b>						
1971-74	-1.38	-1.10	0.71	-5.55	-2.07	-9.01
1975-79	-0.69	-0.53	0.62	-1.44	-2.83	-5.70
1980-84	-0.35	-0.28	0.71	-0.42	-4.05	-3.96
1971-84	-0.76	-0.61	0.68	-2.25	-3.05	-6.02
<b>2. Share of GNP</b>						
1971-74	-0.20	-0.16	0.11	-0.85	-0.32	-1.37
1975-79	-0.11	-0.08	0.10	-0.23	-0.45	-0.90
1980-84	-0.05	-0.04	0.12	-0.06	-0.65	-0.63
1971-84	-0.11	-0.09	0.11	-0.35	-0.49	-0.94
<b>B. Total</b>						
<b>1. Share of GVA</b>						
1971-74	-3.45	-2.83	-1.12	-9.16	-6.06	-21.78
1975-79	-3.00	-2.37	-1.67	-4.68	-9.66	-21.17
1980-84	-2.30	-1.47	-1.63	-2.77	-9.46	-16.31
1971-84	-2.88	-2.18	-1.50	-5.27	-8.56	-19.61
<b>2. Share of GNP</b>						
1971-74	-0.52	-0.43	-0.17	-1.41	-0.95	-3.35
1975-79	-0.47	-0.37	-0.26	-0.74	-1.52	-3.33
1980-84	-0.37	-0.23	-0.26	-0.43	-1.54	-2.63
1971-84	-0.45	-0.34	-0.24	-0.82	-1.36	-3.09

\*SUM is total transfers on output and non-allocatable inputs.

Table 6.4  
Real Transfers Using Value Added Approach  
(as Percent Share of GVA and GNP)

	Rice Irrigated	Rice Rainfed	Corn	Sugar	Copra	SUM
<b>I. XUP</b>						
<b>A. Direct</b>						
<b>1. Share of GVA</b>						
1971-74	-1.38	-1.29	1.17	-4.95	-1.90	-9.30
1975-79	-0.63	-0.31	1.05	-4.14	-2.76	-8.39
1980-84	-0.35	-0.29	1.16	-1.28	-4.03	-4.58
1971-84	-0.75	-0.65	1.12	-3.33	-2.97	-7.29
<b>2. Share of GNP</b>						
1971-74	-0.20	-0.19	0.18	-0.77	-0.30	-1.42
1975-79	-0.10	-0.08	0.16	-0.66	-0.43	-1.33
1980-84	-0.05	-0.05	0.19	-0.20	-0.65	-0.73
1971-84	-0.11	-0.10	0.18	-0.53	-0.47	-1.14
<b>B. Total</b>						
<b>1. Share of GVA</b>						
1971-74	-3.72	-3.19	-1.98	-9.43	-6.33	-24.74
1975-79	-3.12	-2.48	-2.82	-4.78	-9.99	-23.59
1980-84	-2.43	-1.54	-2.78	-2.90	-9.68	-18.24
1971-84	-3.04	-2.35	-2.57	-5.44	-8.83	-22.01
<b>2. Share of GNP</b>						
1971-74	-0.57	-0.49	-0.31	-1.45	-0.99	-3.81
1975-79	-0.49	-0.39	-0.45	-0.76	-1.57	-3.71
1980-84	-0.39	-0.25	-0.45	-0.46	-1.57	-2.94
1971-84	-0.48	-0.37	-0.41	-0.85	-1.40	-3.46

Table 6.4 cont'd

	Rice Irrigated	Rice Rainfed	Corn	Sugar	Copra	SUM
<b>11. ISA</b>						
<b>A. Direct</b>						
<b>1. Share of GVA</b>						
1971-74	-1.40	-1.30	1.15	-5.51	-1.93	-9.91
1975-79	-0.67	-0.52	1.04	-1.39	-2.78	-5.70
1980-84	-0.38	-0.30	1.15	-0.45	-4.09	-3.85
1971-84	-0.77	-0.67	1.11	-2.23	-3.01	-6.24
<b>2. Share of GNP</b>						
1971-74	-0.20	-0.19	0.18	-0.85	-0.30	-1.51
1975-79	-0.10	-0.08	0.16	-0.22	-0.44	-0.90
1980-84	-0.06	-0.05	0.19	-0.06	-0.66	-0.61
1971-84	-0.12	-0.10	0.18	-0.34	-0.48	-0.97
<b>B. Total</b>						
<b>1. Share of GVA</b>						
1971-74	-3.73	-3.20	-2.00	-9.44	-6.36	-24.82
1975-79	-3.13	-2.49	-2.83	-4.79	-10.01	-23.37
1980-84	-2.45	-1.56	-2.81	-2.91	-9.74	-18.38
1971-84	-3.06	-2.36	-2.59	-5.45	-8.87	-22.00
<b>2. Share of GNP</b>						
1971-74	-0.57	-0.49	-0.31	-1.46	-0.99	-3.82
1975-79	-0.49	-0.39	-0.45	-0.76	-1.57	-3.68
1980-84	-0.39	-0.25	-0.45	-0.46	-1.58	-2.96
1971-84	-0.49	-0.37	-0.41	-0.85	-1.41	-3.46

\*SUM is total transfers on output and non-allocatable inputs.

Table 6.5  
Nominal Transfers Due to Price and Non-price Related Interventions  
(as Percent Share of GVA and GMP)

	Total Net Transfers		Total Net Transfers	
	With other Taxes and Rural Roads	Without Other Taxes & Rural Roads	With other Taxes and Rural Roads	Without Other Taxes & Rural Roads
	SHARE OF GVA		SHARE OF GNP	
I. XUP				
A. Direct				
1960-64			0.90	1.08
1965-69	0.09	1.11	0.34	0.52
1970-74	-10.57	-9.70	-1.62	-1.49
1975-79	-5.08	-4.24	-0.81	-0.68
1980-82	-0.76	0.19	-0.10	0.05
1960-82	-5.02 <sup>a</sup>	-4.11 <sup>a</sup>	-0.27	-0.12
B. Total				
1960-64			-1.48	-1.30
1965-69	-13.82	-12.78	-1.93	-1.75
1970-74	-25.65	-24.76	-3.99	-3.85
1975-79	-25.38	-24.52	-4.01	-3.87
1980-82	-16.80	-15.82	-2.66	-2.50
1960-82	-21.69 <sup>a</sup>	-20.76 <sup>a</sup>	-2.83	-2.67
II. ISA				
A. Direct				
1960-64			1.72	1.90
1965-69	12.62	13.67	2.56	2.74
1970-74	-8.66	-7.79	-1.30	-1.16
1975-79	0.72	1.57	0.11	0.24
1980-82	-2.52	-1.57	-0.38	-0.22
1960-82	-0.59 <sup>a</sup>	0.32 <sup>a</sup>	0.62	0.78
B. Total				
1960-64			-0.54	-0.36
1965-69	1.55	2.61	0.74	0.92
1970-74	-23.15	-22.26	-3.57	-3.43
1975-79	-17.99	-17.13	-2.84	-2.70
1980-82	-17.02	-16.04	-2.68	-2.52
1960-82	-15.76 <sup>a</sup>	-14.83 <sup>a</sup>	-1.70	-1.54

<sup>a</sup> 1967-1982

Table 6.6  
Real Transfers Due to Price and Non-price Related Interventions  
(as Percent Share of GVA and GNP)

	Total Net Transfers		Total Net Transfers	
	With other Taxes and Rural Roads	Without Other Taxes & Rural Roads	With other Taxes and Rural Roads	Without Other Taxes & Rural Roads
	SHARE OF GVA		SHARE OF GNP	
I. XUP				
A. Direct				
1960-64			0.73	0.91
1965-69	-0.99	0.03	0.14	0.32
1970-74	-10.39	-9.53	-1.60	-1.47
1975-79	-5.05	-4.21	-0.80	-0.67
1980-82	-2.40	-1.45	-0.37	-0.22
1960-82	-5.46 <sup>u</sup>	-4.56 <sup>u</sup>	-0.38	-0.23
B. Total				
1960-64			-1.97	-1.79
1965-69	-15.95	-14.92	-2.38	-2.20
1970-74	-28.42	-27.53	-4.43	-4.29
1975-79	-27.38	-26.51	-4.32	-4.18
1980-82	-18.32	-17.34	-2.90	-2.75
1960-82	-23.86 <sup>u</sup>	-22.94 <sup>u</sup>	-3.23	-3.07
II. ISA				
A. Direct				
1960-64			1.56	1.74
1965-69	10.32	11.37	2.22	2.40
1970-74	-8.52	-7.65	-1.28	-1.14
1975-79	0.55	1.39	0.08	0.21
1980-82	-2.46	-1.51	-0.37	-0.22
1960-82	-1.02 <sup>u</sup>	-0.11 <sup>u</sup>	0.51	0.67
B. Total				
1960-64			-1.01	-0.83
1965-69	-1.51	-0.46	0.21	0.39
1970-74	-25.91	-25.01	-4.00	-3.86
1975-79	-20.11	-19.24	-3.17	-3.03
1980-82	-18.59	-17.61	-2.93	-2.77
1960-82	-18.15 <sup>u</sup>	-17.22 <sup>u</sup>	-2.11	-1.95

<sup>u</sup> 1967-1982

Table 7.1  
Quintile Income Shares, 1961-1985

	Share in Total Income of Families Belonging to					Top 20%	Average Household Income (Pesos at Current Prices)
	GINI RATIO	Bottom 20%	Bottom 40%	Bottom 60%	Bottom 80%		
1961							
PHIL	0.50	4.2	12.1	24.2	43.5	56.5	1,804
RURAL	0.40	5.9	17.7	31.2	53.1	46.9	1,203
URBAN	0.52	3.8	11.3	23.8	43.3	56.7	2,970
1965							
PHIL	0.51	3.5	11.5	24.3	44.5	55.6	2,541
RURAL	0.42	5.0	14.5	29.8	52.8	47.2	1,755
URBAN	0.53	3.8	11.8	23.8	42.5	57.5	4,405
1971							
PHIL	0.49	3.8	11.9	25.1	46.2	53.9	3,736
RURAL	0.46	4.4	13.3	27.2	49.0	51.0	2,818
URBAN	0.45	4.6	14.0	27.4	49.3	50.7	5,867
1975							
PHIL		5.1	14.2	26.6	45.0	55.0	
RURAL							5,139
URBAN							6,789
1985							
PHIL		5.2	14.3	27.6	47.9	52.1	31,052
RURAL		10.1	26.0	46.0	69.6	30.4	21,875
URBAN		1.4	5.2	13.2	31.0	69.0	46,127

NOTE: The deciles used for either urban or rural 1985 are for all families both rural and urban.

Source:

ILD, *Sharing in Development* (1974), p. 10.

World Bank, *The Philippines: Recent Trends in Poverty, Employment and Wages,*  
(1985), p. 16.

1985 Family Income and Expenditure Survey.

NEDA, *Philippine Statistical Yearbook, 1982.*

Table 7.2  
Poverty Incidence by Main Source of Income  
1982-83

Region and Main Source of Income	Poverty Incidence (%)	Percent of Total Families
Urban	19.5	33.0
Farming	44.4	2.0
Fishing, Livestock, Forestry	46.4	0.7
Manufacturing	20.7	1.0
Wholesale and Retail Trade	20.4	3.5
Other Services	19.4	1.6
Dividends, Rents, and Pensions	18.6	6.5
Nonagricultural Labor	15.9	17.7
Rural	42.4	67.0
Farming		
Palay	34.9	7.5
Corn	60.7	6.1
Coconut	48.5	4.3
Other Crops	53.0	4.0
Agricultural Labor	55.2	6.5
Fishing	51.9	3.6
Livestock, Poultry and Forestry	43.9	2.2
Manufacturing	44.2	1.2
Wholesale and Retail Trade	35.0	3.3
Other Services	30.0	1.3
Dividends, Rents, and Pensions	49.4	11.8
Nonagricultural Labor	25.0	15.2

NOTE: The figures are the simple averages of the estimates for third quarter 1982 and third quarter 1983.

Source: World Bank. The Philippines: Recent Trends in  
Poverty, Employment and Wages. June 1985, Table 5, p.12

Table 7.3  
Regional Dimension of Poverty and Income Inequality, 1985

	Per Capita Real Gross Domestic Product (Pesos at 1972 prices)	Population (Millions)	Regional Share to National Total of Families in the Bottom 30 Percent (%)	Share of Families in the Bottom 30 Percent to the Regional Total Families (in percent)
Ilocos	989	3.90	5.1	20.7
Cagayan Valley	981	2.52	4.0	25.7
Central Luzon	1,466	5.46	7.1	22.0
Metro Manila	3,893	6.94	2.6	5.8
Southern Luzon	1,820	7.09	10.8	25.1
Bicol	783	3.92	10.6	45.7
Western Visayas	1,422	5.09	12.7	42.1
Central Visayas	1,509	4.20	12.7	47.7
Eastern Visayas	718	3.07	8.8	46.7
Western Mindanao	1,130	2.86	6.2	36.9
Northern Mindanao	1,368	3.18	7.3	38.7
Southern Mindanao	1,605	3.84	6.7	29.1
Central Mindanao	1,395	2.60	5.4	34.7
PHILIPPINES	1,655	54.67		

Sources of Data: NEDA, National Accounts Staff  
Philippine Statistical Yearbook, 1985  
NEDA, Study on Government Assistance to Low  
Income Groups With Inadequate Access to  
Institutional Credit, 1986, Table 2.2

Table 7.4  
Regional Per Capita Gross Domestic Product, Philippines, 1972-85

PHIL	Ilocos Valley	Cagayan Luzon	Central Luzon	Southern Tagalog	NCR	Other S.T.	All S.T.	Bicol	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao	Southern Mindanao	Central Mindanao
A. Level (Million Pesos at 1972 constant prices)															
1972	1420	753	1020	1258	3656	1593	2573	693	1379	1289	726	774	1137	1500	1004
1975	1610	830	945	1387	4273	1797	2988	760	1517	1508	822	869	1244	1665	1031
1980	1919	969	1176	1616	4572	2108	3321	912	1683	1774	816	1218	1579	1874	1296
1985	1655	989	981	1466	3893	1820	2846	783	1422	1509	718	1130	1368	1605	1395
B. Average Annual Growth Rate (%)															
1972-75	4.31	3.47	-2.32	3.33	5.40	4.13	5.15	3.09	3.25	5.39	4.35	4.01	3.03	3.58	1.21
1976-79	4.14	3.26	7.51	3.95	3.41	3.81	3.70	3.34	2.20	3.48	-0.17	0.84	6.23	3.34	5.61
1980-82	1.02	2.05	-2.38	3.42	0.76	0.04	0.60	1.53	2.00	1.32	1.09	1.12	-1.56	-1.01	-0.65
1983-85	-5.31	-0.37	-5.65	-6.40	-7.68	-4.41	-6.65	-4.65	-8.71	-5.57	-5.12	-3.39	-3.17	-4.41	3.95
1972-85	1.28	2.19	-0.00	1.30	0.70	1.12	0.93	1.02	0.34	1.34	0.02	3.12	1.52	0.60	2.77

\* NCR - National Capital Region (Metro Manila)

Table 7.5  
Instantaneous Income Effects of Price Interventions  
by Crop, Philippines

	As a Share of No-intervention Income				As a Share of Actual Income				
	Rice	Corn	Sugar	Copra	Rice	Corn	Sugar	Copra	Total
<b>A. Direct Nominal, annual</b>									
1971-74	-0.39	0.11	-0.79	-0.33	-0.41	0.11	-0.80	-0.33	-1.43
1975-79	-0.19	0.10	-0.66	-0.44	-0.19	0.10	-0.68	-0.45	-1.22
1980-84	-0.10	0.11	-0.20	-0.64	-0.11	0.11	-0.20	-0.65	-0.85
1971-84	-0.22	0.11	-0.53	-0.48	-0.22	0.11	-0.54	-0.49	-1.14
<b>B. Direct Real, annual</b>									
1971-74	0.07	0.51	-0.30	0.17	0.05	0.53	-0.37	0.09	0.30
1975-79	0.32	0.51	-0.16	0.07	0.31	0.59	-0.17	0.06	0.79
1980-84	-0.02	0.20	-0.12	-0.56	-0.03	0.18	-0.13	-0.58	-0.56
1971-84	0.12	0.46	-0.19	-0.13	0.11	0.43	-0.21	-0.16	0.17
<b>C. Total Nominal, annual</b>									
1971-74	-0.92	-0.17	-1.20	-0.92	-0.96	-0.17	-1.22	-0.94	-3.29
1975-79	-0.82	-0.26	-1.18	-1.46	-0.83	-0.26	-1.22	-1.48	-3.79
1980-84	-0.57	-0.25	-0.51	-1.45	-0.58	-0.25	-0.52	1.47	0.12
1971-84	-0.76	-0.23	-0.95	-1.30	-0.78	-0.23	-0.97	1.32	-0.66
<b>D. Total Real, annual</b>									
1971-74	-3.41	-2.65	-3.66	-3.39	-3.54	-2.76	-3.83	-3.54	-13.67
1975-79	-2.62	-2.07	-2.99	-3.24	-2.71	-2.13	-3.09	-3.39	-11.32
1980-84	-2.88	-2.56	-2.82	-3.73	-2.97	-2.64	-2.91	-3.89	-12.41
1971-84	-2.94	-2.41	-3.12	-3.46	-3.04	-2.49	-3.23	-3.61	-12.37

NOTE: No-intervention income is no-intervention GDP; actual income is actual GDP

Table 7.6  
Short Run Direct and Cumulative Total Income Effects  
of Price Interventions, by Crop, Philippines (in %)

	Share of No-intervention Income				Share of Actual Income				
	Rice	Corn	Sugar	Copra	Rice	Corn	Sugar	Copra	TOTAL
A. Short Run Direct, annual									
1971-74	0.07	0.63	-0.46		0.05	0.55	-0.52		0.08
1975-79	0.23	0.62	-0.47		0.23	0.60	-0.48		0.35
1980-84	-0.07	0.22	-0.17		-0.07	0.20	-0.18		-0.05
1971-84	0.08	0.48	-0.36		0.07	0.44	-0.38		0.13
B. Cumulative Total									
1971	-3.79	-4.96	-5.52	-4.45	-3.94	-5.22	-5.84	-4.65	-13.55
1974	-2.10	0.44	-2.19	1.22	-2.14	0.43	-2.24	1.21	-2.74
1979	-4.46	-3.63	-3.45	-2.51	-4.67	-3.77	-3.58	-2.57	-14.59
1984	-3.98	-3.79	-3.78	-2.78	-4.15	-3.94	-3.93	-2.86	-14.88

NOTE: No-intervention income is no-intervention GDP; actual income is actual GDP

Table 7.7  
Regional Concentration and Dependence by Crop, Philippines, 1971 and 1985

	RICE		CORN		SUGAR		COPRA	
	1971	1985	1971	1985	1971	1985	1971	1985
I. % Share to National Output								
PHILIPPINES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
ILOCOS REGION	12.23	9.21						
CABAYAN VALLEY	13.11	12.67	10.97	9.45	11.62	9.47		
CENTRAL LUZON	18.95	17.29			11.47	11.35		
SOUTHERN TAGALOG	12.49	11.17	6.80	6.71			11.38	18.63
BICOL	7.07	8.57	3.25	3.36			3.18	6.81
WESTERN VISAYAS	10.00	11.05	6.74	0.97	68.66	57.75	6.90	3.43
CENTRAL VISAYAS	2.00	1.58	8.32	6.21				
EASTERN VISAYAS	4.79	4.86			4.81	2.57	17.26	9.31
WESTERN MINDANAO	2.84	4.01	6.89	5.02			3.72	8.98
NORTHERN MINDANAO	3.70	3.27	7.80	5.81	0.25	1.20	18.54	4.90
SOUTHERN MINDANAO	3.55	6.61	40.22	32.22		4.67	32.81	30.99
CENTRAL MINDANAO				21.55		1.33		
II. % Share to Gross Regional Domestic Product								
PHILIPPINES	6.01	4.29	2.08	1.76	3.20	1.07	2.59	1.57
ILOCOS REGION	15.35	8.85						
CABAYAN VALLEY	29.85	18.62	8.65	5.69				
CENTRAL LUZON	13.49	7.47			4.41	1.03		
SOUTHERN TAGALOG	1.80	1.10	0.34	0.27	0.88	0.28	0.71	0.67
BICOL	10.86	10.80	1.73	1.73			2.11	3.14
WESTERN VISAYAS	5.35	6.32	1.25	0.23	19.59	8.28	3.72	1.22
CENTRAL VISAYAS	1.98	0.99	5.04	2.55				
EASTERN VISAYAS	8.35	9.34			4.47	1.24	12.98	6.54
WESTERN MINDANAO	5.49	4.95	4.61	2.54	1.00	0.19	3.10	4.05
NORTHERN MINDANAO	4.99	2.80	3.64	2.04		0.12	10.77	1.54
SOUTHERN MINDANAO	3.11	4.07	12.22	8.13			12.41	6.98
CENTRAL MINDANAO				9.92		0.37		

Table 7.8  
Instantaneous Income Effects of Price Interventions  
as a Share of Actual Income by Region, Philippines (in %)

	PHIL	ILOCOS	CAGAYAN VALLEY	CENTRAL LUZON	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	CENTRAL VISAYAS	EASTERN VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO	CENTRAL MINDANAO
<i>A. Direct Nominal, annual</i>													
1971-74	-1.43	1.46	-1.45	-1.91	-0.33	-1.60	-5.44	0.02	-2.49	-0.97	-1.62	-0.94	
1975-79	-1.22	0.94	-0.43	-1.01	-0.36	-1.08	-4.42	0.01	-2.88	-1.57	-1.32	-1.02	0.80
1980-84	-0.85	0.87	-0.08	-0.27	-0.45	-1.20	-2.04	0.03	-2.58	-1.82	-1.14	-1.47	0.82
1971-84	-1.14	1.07	-0.60	-1.01	-0.38	-1.28	-3.86	0.02	-2.67	-1.49	-1.38	-1.15	0.91
<i>B. Direct Real, annual</i>													
1971-74	0.30	1.95	-0.42	-0.95	-1.66	-3.27	-6.63	0.87	-4.19	-2.68	-3.35	-2.26	
1975-79	0.79	1.44	0.58	0.00	-0.75	-1.95	-4.72	1.00	-3.75	-2.46	-2.21	-1.41	1.02
1980-84	-0.56	0.95	0.07	-0.13	-2.63	-3.47	-4.19	0.17	-4.86	-4.10	-3.33	-3.89	0.97
1971-84	0.17	1.41	0.11	-0.32	-1.63	-2.86	-5.08	0.66	-4.27	-3.10	-2.95	-2.46	0.98
<i>C. Total Nominal, annual</i>													
1971-74	-3.29	0.61	-4.74	-3.95	-0.85	-3.68	-9.08	-0.42	-5.81	-2.84	-5.61	-5.72	
1975-79	-3.79	0.01	-3.98	-3.16	-1.32	-4.78	-9.38	-0.42	-7.82	-6.01	-4.55	-6.43	-1.44
1980-84	0.12	0.09	-2.42	-1.61	-1.18	-3.97	-5.69	-0.33	-6.62	-5.07	-3.57	-7.42	-3.32
1971-84	-0.66	0.21	-3.63	-2.82	-1.14	-4.17	-7.98	-0.38	-6.81	-4.76	-4.59	-6.58	-1.94
<i>D. Total Real, annual</i>													
1971-74	-10.64	-1.91	-9.89	-9.13	-8.21	-8.43	-16.53	-5.60	-10.53	-7.60	-10.33	-13.06	
1975-79	-8.91	-1.86	-7.77	-6.93	-6.44	-8.04	-14.51	-4.16	-11.04	-9.25	-10.40	-11.54	-7.07
1980-84	-9.92	-2.28	-7.23	-6.39	-8.25	-8.68	-12.84	-5.09	-11.33	-9.77	-10.65	-14.53	-7.13
1971-84	-9.76	-2.03	-8.19	-7.37	-7.59	-8.38	-14.50	-4.90	-10.99	-8.97	-11.26	-13.05	-7.08

NOTE: Actual income by region is actual gross regional domestic product

Table 7.9  
Short Run Direct and Cumulative Total Income Effects  
of Price Interventions as Percent Share of Actual Income by Region

	PHIL	ILOCOS	CAGAYAN VALLEY	CENTRAL LUZON	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	CENTRAL VISAYAS	EASTERN VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO	CENTRAL MINDANAO
1. Short Run Direct, <i>annual</i>													
1971-74	0.08	1.97	-0.36	-1.17	1.03	-0.22	-4.81	0.89	-0.34	0.39	0.89	1.75	
1975-79	0.35	1.33	0.28	-0.50	1.27	0.45	-4.74	0.98	-0.81	0.76	0.87	1.58	1.10
1980-84	-0.05	0.68	-0.02	-0.25	0.15	-0.04	-1.92	0.17	-0.33	0.13	0.09	0.93	1.09
1971-84	0.13	1.35	-0.01	-0.60	0.80	0.08	-3.75	0.66	-0.51	0.43	0.57	1.39	1.08
2. Cumulative Total													
1971	-19.65	-0.58	-5.94	-8.44	-18.68	-12.88	-23.27	-9.99	-18.40	-14.46	-17.90	-25.12	
1974	-2.74	-2.15	-13.50	-10.01	3.89	-5.73	-17.14	0.59	-11.76	-2.31	-13.63	-9.19	-7.07
1979	-14.59	-4.24	-11.61	-9.41	-12.48	-14.81	-12.95	-7.52	-18.40	-17.81	-16.35	-20.30	-8.36
1984	-14.89	-3.41	-9.73	-8.42	-12.47	-12.70	-16.37	-7.57	-18.15	-15.10	-15.34	-25.81	-10.03

NOTE: Actual income by region is actual gross regional domestic product

Table 7.10  
Instantaneous Real Income Effects of Price Interventions on Consumers:  
Urban and Rural, by Occupation (in %)

Year	U R B A N				R U R A L		
	All	Professional, Technical, Entrepreneur	Semi- skilled	Unskilled, No Occupation	All	Farm Owners	Farm Workers, Small & Hired Fishermen
<i>A. Direct, annual</i>							
1970-74	0.59	0.63	0.56	0.74	0.58	0.70	0.59
1975-79	0.99	0.90	0.98	1.14	1.33	1.41	1.40
1980-82	1.62	1.56	1.55	1.91	1.89	2.04	1.95
1983-86	-0.06	0.22	-0.20	0.07	-1.70	-1.41	-2.01
1970-86	0.74	0.78	0.68	0.91	0.49	0.65	0.46
<i>A. Total</i>							
1970-74	2.81	2.47	2.85	3.20	5.04	5.01	5.46
1975-79	3.91	3.34	4.00	4.40	7.39	7.26	8.03
1980-82	4.56	3.97	4.61	5.18	8.17	8.09	8.85
1983-86	2.68	2.47	2.66	3.10	4.03	4.11	4.26
1970-86	3.41	2.99	3.45	3.88	6.04	6.00	6.53

Table 7.11  
Instantaneous Real Income Effect of Direct Price Interventions on Consumers:  
Philippines, Rural, Urban, Manila, by Income Class (in %), annual

	1966-69	1970-72	1973-75	1976-79	1980-82	1983-86	1986-86
PHILIPPINES							
Poor	-3.63	-6.21	8.52	-0.05	0.48	-3.43	-0.96
Lower Middle	-2.61	-4.55	6.36	-0.07	0.34	-2.06	-0.60
Upper Middle	-1.85	-3.27	4.69	-0.04	0.26	-1.31	-0.37
Rich	-1.19	-2.14	3.24	0.00	0.17	-0.79	-0.20
RURAL							
Poor	-3.87	-6.58	9.04	-0.06	0.47	-3.67	-1.03
Lower Middle	-3.00	-5.19	7.14	-0.08	0.33	-2.46	-0.73
Upper Middle	-2.31	-4.05	5.76	-0.06	0.26	-1.66	-0.48
Rich	-1.70	-3.03	4.44	-0.01	0.17	-1.25	-0.34
URBAN							
Poor	-3.20	-5.61	7.82	0.80	2.23	-1.48	-0.10
Lower Middle	-2.43	-4.40	6.39	0.50	1.45	-0.92	-0.05
Upper Middle	-1.77	-3.28	4.73	0.33	1.01	-0.60	-0.04
Rich	-1.20	-2.25	3.52	0.23	0.63	-0.35	0.02
METRO MANILA							
Poor	-1.36	-3.43	5.01	0.89	1.86	-1.03	0.21
Lower Middle	-1.17	-2.97	4.31	0.65	1.33	-0.80	0.13
Upper Middle	-0.84	-2.18	3.20	0.47	0.95	-0.55	0.11
Rich	-0.58	-1.52	2.23	0.27	0.53	-0.31	0.06

NOTES:

- "Poor" - average family income in 1971 is below P2,999 and below P29,999 in 1985
- "Lower Middle" - average family income in 1971 is between P3,000 - P5,999 and between P30,000 - P59,999 in 1985
- "Upper Middle" - average family income in 1971 is between P6,000 - P9,999 and P60,000 - P99,999 in 1985
- "Rich" - average family income in 1971 is P10,000 or more and P100,000 or more in 1985

Table 7.12  
Instantaneous Real Income Effects of Total Price Interventions on Consumers:  
Philippines, Rural, Urban, Manila, by Income Class (in %), *annual*

	1966-69	1970-72	1973-75	1976-79	1980-82	1983-86	1986-86
PHILIPPINES							
Poor	2.45	-0.18	12.82	7.38	8.09	3.38	5.48
Lower Middle	2.00	0.08	9.47	4.97	5.01	2.22	3.83
Upper Middle	1.59	0.21	6.93	3.48	3.32	1.53	2.75
Rich	1.19	0.29	4.75	2.30	2.04	0.96	1.86
RURAL							
Poor	2.56	-0.24	13.63	7.79	8.50	3.50	5.76
Lower Middle	2.15	-0.04	10.68	5.63	5.71	2.45	4.28
Upper Middle	1.89	0.17	8.55	4.23	3.98	1.77	3.32
Rich	1.54	0.26	6.54	3.22	2.90	1.29	2.54
URBAN							
Poor	2.37	-0.07	11.69	6.89	7.83	3.76	5.26
Lower Middle	2.12	0.17	9.44	4.93	5.01	2.48	3.90
Upper Middle	1.63	0.19	6.95	3.51	3.42	1.73	2.82
Rich	1.34	0.34	5.13	2.42	2.09	1.08	2.00
METRO MANILA							
Poor	1.90	-0.01	7.11	5.02	6.28	3.14	3.83
Lower Middle	1.66	0.01	5.10	3.89	4.51	2.26	3.01
Upper Middle	1.28	0.07	4.52	2.83	3.19	1.62	2.20
Rich	0.91	0.07	3.14	1.74	1.77	0.91	1.39

NOTES:

"Poor" - average family income in 1971 is below P2,999 and below P29,999 in 1985

"Lower Middle" - average family income in 1971 is between P3,000 - P5,999 and between P30,000 - P59,999 in 1985

"Upper Middle" - average family income in 1971 is between P6,000 - P9,999 and P60,000 - P99,999 in 1985

"Rich" - average family income in 1971 is P10,000 or more and P100,000 or more in 1985

Table 8.1  
Variance of Relative Prices, 1960-1982

	P/PNA	Po/PNA	P*/PNA
<b>A. Relative Producer Prices</b>			
1. Rice			
1961-1972	0.0072	0.0117	0.0160
1973-1986	0.0155	0.1224	0.1557
1961-1986	0.0120	0.0783	0.1066
2. Corn			
1961-1972	0.0030	0.0042	0.0054
1973-1986	0.0050	0.0145	0.0200
1961-1986	0.0044	0.0111	0.0165
3. Sugar			
1961-1972	0.0118	0.0832 (0.0247)	0.1217 (0.0399)
1973-1986	0.0268	0.4097 (0.2848)	0.6001 (0.4291)
1961-1986	0.0204	0.2944 (0.1752)	0.4427 (0.2713)
4. Copra			
1961-1972	0.0073	0.0160	0.0291
1973-1986	0.1328	0.1315	0.2015
1961-1986	0.0727	0.0805	0.1289
<b>B. Relative Consumer Prices</b>			
1. Rice			
1961-1972	0.0126	0.0234	0.0349
1973-1986	0.0291	0.2557	0.3242
1961-1986	0.0214	0.1662	0.2276
2. Corn			
1961-1972	0.0072	0.0098	0.0124
1973-1986	0.0077	0.0300	0.0392
1961-1986	0.0089	0.0245	0.0364
3. Sugar			
1961-1972	0.0109	0.1482 (0.0399)	0.2174 (0.0618)
1973-1986	0.0026	0.7897 (0.4291)	1.1488 (0.7951)
1961-1986	0.0067	0.5382 (0.3061)	0.7999 (0.4673)

NOTE: The figures in parenthesis are the variance of border price of sugar using unit value of exports.

P/PNA = relative actual domestic price

Po/PNA = relative price of the border price at official exchange rate adjusted to the producer or retail levels.

P\*/PNA = relative price of the border price at equilibrium exchange rate adjusted to the producer or retail levels.

Table 8.2  
Z-statistic of Relative Prices, 1961-1982

	P/PNA	Po/PNA	P*/PNA
<b>A. Relative Producer Prices</b>			
1. Rice			
1961-1972	0.0082	0.0239	0.0291
1973-1986	0.0029	0.0946	0.1246
1961-1986	0.0051	0.0526	0.0776
2. Corn			
1961-1972	0.0020	0.0039	0.0049
1973-1986	0.0022	0.0087	0.0130
1961-1986	0.0020	0.0062	0.0089
3. Sugar			
1961-1972	0.0072	0.0960 (0.0116)	0.1438 (0.0229)
1973-1986	0.0167	0.4028 (0.2726)	0.6187 (0.4448)
1961-1986	0.0118	0.2517 (0.1469)	0.3850 (0.2413)
4. Copra			
1961-1972	0.0133	0.0262	0.0443
1973-1986	0.2472	0.2521	0.3951
1961-1986	0.1344	0.1427	0.2249
<b>B. Relative Consumer Prices</b>			
1. Rice			
1961-1972	0.0139	0.0389	0.0560
1973-1986	0.0070	0.2355	0.2978
1961-1986	0.0098	0.1396	0.1791
2. Corn			
1961-1972	0.0080	0.0101	0.0131
1973-1986	0.0045	0.0206	0.0305
1961-1986	0.0058	0.0152	0.0216
3. Sugar			
1961-1972	0.0134	0.1737 (0.0163)	0.2599 (0.0347)
1973-1986	0.0064	0.7939 (0.4841)	1.2007 (0.7815)
1961-1986	0.0092	0.4893 (0.2589)	0.7387 (0.4216)

NOTE: The figures in parenthesis are the Z-statistics of border price of sugar using unit value of exports.

P/PNA = relative actual domestic price

Po/PNA = relative price of the border price at official exchange rate adjusted to the producer or retail levels.

P\*/PNA = relative price of the border price at equilibrium exchange rate adjusted to the producer or retail levels.

Table 8.3  
Per Capita Output and Consumption: Variance and Correlation,  
By Crop

	Rice	Corn	Sugar	Coconut
<b>I. Variance</b>				
A. Per Capita Output				
1960-1972	23.29	23.67	11.27	10.59
1973-1984	34.05	16.66	72.29	87.54
1960-1984	67.64	86.00	41.31	70.03
B. Per Capita Consumption				
1960-1972	24.00	13.46	3.49	10.75
1973-1984	88.53	31.49	1.91	3.39
1960-1984	61.66	77.30	11.28	7.73
<b>II. Correlation</b>				
A. Between Per Capita Output and Per Capita Consumption				
1960-1972	0.29	0.97	-0.17	-0.04
1973-1984	-0.04	0.62	-0.45	0.48
1960-1984	0.29	0.93	-0.02	-0.04
B. Between Per Capita output and Pr/PNA				
1960-1972	-0.25	-0.68	-0.38	
1973-1984	0.42	-0.10	0.42	
1960-1984	0.50	-0.31	0.06	

Table 9.1  
Price Intervention Regressions: Rice

Variables	NPRD (62-86)	NPRLT (62-86)	Pp - BPo (63-86)	Pp-BP‡ (63-86)	Pp/Pna (63-86)	Pr - BPo (63-86)	Pr - BP‡ (63-86)	Pr/Pna (63-86)
Constant	0.75 (7.97)	0.37 (5.08)	4.58 (0.62)	4.52 (0.65)	0.69 (12.71)	6.96 (0.59)	7.27 (0.57)	0.90 (12.77)
BPo	-0.84 (-7.04)		-0.66 (-5.63)		0.04 (0.84)	-0.53 (-3.49)		0.15 (2.24)
BP‡		-0.52 (-6.48)		-0.69 (-7.20)			-0.61 (-4.67)	
MCAP		-2.21D-05 (-2.69)	-0.00 (-1.99)	-0.0002 (-2.18)	-2.57D-05 -4.50	-0.0002 (-1.90)	-0.0002 (-1.92)	-3.134D-05 (-3.83)
MCAP (-1)	-2.37D-05 (-2.45)							
Inflation	0.002 (0.65)	0.002 (0.64)						
Inflation (-1)			0.02 (3.79)	0.02 (3.89)	0.002 (1.20)	0.02 (3.47)	0.02 (3.40)	0.001 (0.72)
Variance	0.89 (2.67)	0.60 (2.19)						
Variance (-1)			-0.47 (-0.57)	-0.53 (0.66)	0.37 (2.58)	-0.79 (-0.74)	-0.84 (-0.77)	0.30 (1.51)
Adj. R <sup>2</sup>	0.67	0.69	0.76	0.89	0.76	0.60	0.68	0.75
Dw	1.75	1.67	2.04	2.11	1.93	2.32	2.31	2.37
Rho	-0.21	-0.19	0.97	0.97	0.30	0.97	0.97	0.34
F-statistics	10.86	11.61	15.69	38.88	16.91	8.02	10.87	14.92

NOTE: Variance and Variance (-1) are three-year moving averages. Variance is proxied by the absolute value of the ratio of the trend residual to the fitted estimate.

The border prices used in the regressions for NPRD, NPRLT, Pp/Pna and Pr/Pna are deflated by Pna; the border prices in the other regressions are not deflated.

Table 9.2  
Price Intervention Regressions: Corn

Variables	NPRD (62-86)	NPRLT (62-86)	Pp - BPo (62-86)	Pp-BP‡ (62-86)	Pp/Pna (62-86)	Pr - BPo (62-86)	Pr - BP‡ (63-86)	Pr/Pna (63-86)
Constant	0.84 (6.58)	0.48 (4.69)	0.20 (3.84)	0.24 (3.23)	0.22 (6.41)	7.33 (0.27)	7.79 (0.26)	0.43 (5.84)
BPo	-1.33 (-3.19)		0.25 (3.27)		0.53 (5.52)	-0.32 (-1.34)		0.71 (3.11)
BP‡		-0.90 (-3.30)		0.08 (0.84)			-0.54 (-2.73)	
MCAP						-6.59 (-0.68)	-5.6400-05 (-0.55)	-9.8370.07 (-0.15)
MCAP (-1)	1.48D-05 (1.40)	4.31D-06 (0.47)	-4.45D-05 (-2.96)	-7.21D-05 (-3.06)	-8.57D-06 (-2.54)			
Inflation	-0.004 (-0.92)	-0.002 (-0.70)	-0.02 (-4.24)	-0.02 (-3.64)				-0.002 (-1.03)
Inflation (-1)					0.002 (1.88)	0.02 (3.11)	0.02 (3.06)	
Variance	-0.07 (-0.09)	0.005 (0.01)	-1.15 (-2.65)	-1.11 (-1.80)	-0.34 (-1.82)			-0.38 (-1.01)
Variance (-1)						-0.62 (-0.44)	-0.55 (-0.37)	
Adj. R <sup>2</sup>	0.51	0.47	0.48	0.70	0.71	0.81	0.71	0.47
Dw	1.54	1.38	2.17	2.01	1.59	1.20	1.13	1.75
Rho	-0.20	-0.16	-0.28	-0.15	0.16	0.98	0.98	0.29
F-statistics	5.94	5.28	5.46	12.24	12.60	20.14	12.49	5.30

NOTE: Variance and Variance (-1) are three-year moving averages. Variance is proxied by the absolute value of the ratio of the trend residual to the fitted estimate.

The border prices used in the regressions for NPRD, NPRLT, Pp/Pna and Pr/Pna are deflated by Pna; the border prices in the other regressions are not deflated.

Table 9.3  
Price Intervention Regressions: Sugar

Variables	NPRD (63-86)	NPRLT (63-86)	Pp - BPo (62-86)	Pp-BP# (63-86)	Pp/Pna (62-86)	Pr - BPo (62-86)	Pr - BP# (62-86)	Pr/Pna (63-86)
Constant	0.11 (1.37)	0.16 (3.22)	0.23 (1.59)	0.45 (1.60)	0.52 (8.36)	9.20 (0.41)	10.17 (0.39)	0.80 (17.58)
BPo	-0.24 (-2.54)		-0.61 (-13.16)		0.25 (4.29)	-0.73 (-5.99)		0.07 (1.36)
BP#		-0.11 (-2.20)		-0.65 (-7.74)			-0.82 (-8.43)	
MCAP	1.01D-06 (0.09)	-2.35D-06 (-0.34)		0.0001 (1.67)		-0.0002 (-1.63)		-6.439D-06 (-1.06)
MCAP (-1)			0.0001 (3.24)		-1.25D-05 (-1.41)		-0.0002 (-1.39)	
Inflation			0.01 (3.02)		0.002 (0.96)	0.02 (3.02)	0.01 (2.13)	
Inflation (-1)	-0.005 (-1.56)	-0.004 (-2.04)		-0.008 (-0.91)				0.005 (-0.27)
Variance			-0.46 (-2.54)		0.04 (-0.58)	-0.44 (-1.40)	-0.42 (-1.31)	
Variance (-1)	-0.04 (-0.32)	-0.07 (-0.97)		-0.34 (-1.06)				-0.16 (-2.63)
Adj. R <sup>2</sup>	0.46	0.53	0.94	0.93	0.71	0.83	0.89	0.13
Dw	1.79	1.86	1.87	1.77	1.84	1.46	1.49	2.08
Rho	-0.01	-0.11	0.18	0.41	0.41	0.98	0.98	0.10
F-statistics	5.00	6.27	72.50	58.62	12.64	24.29	39.13	1.71

NOTE: Variance and Variance (-1) are three-year moving averages. Variance is proxied by the absolute value of the ratio of the trend residual to the fitted estimate.

The border prices used in the regressions for NPRD, NPRLT, Pp/Pna and Pr/Pna are deflated by Pna; the border prices in the other regressions are not deflated.

Table 9.4  
Price Intervention Regressions: Coconut

Variables	NPRD (62-86)	NPRLT (62-86)	Pp - BPo (62-86)	Pp-BP* (62-86)	Pp/Pna (62-86)
Constant	1.05 (2.57)	0.59 (1.68)	0.12 (1.04)	0.15 (1.70)	0.01 (0.13)
BPo	-0.90 (-4.00)		-0.29 (-4.38)		0.74 (9.76)
BP*		-0.53 (-3.67)		-0.44 (-10.83)	
MCAP	-5.46D-05 (-0.86)	-4.16D-05 -0.75			
MCAP (-1)			-5.48D-05 (-1.87)	-7.13D-05 (-3.10)	-1.26D-05 (-1.75)
Inflation			-0.003 (-0.23)	-0.006 (-0.56)	-0.002 (-0.77)
Variance*			-0.22 (-0.27)	0.40 (0.58)	0.06 (0.23)
Adj. R <sup>2</sup>	0.69	0.70	0.88	0.97	0.89
Dw	1.54	1.46	2.00	2.14	2.14
Rho	0.55	0.61	-0.05	-0.23	-0.20
F-statistics	11.35	11.74	34.85	152.45	40.73

\*Three-year moving average. Variance is proxied by the absolute value of the ratio of the trend residual to the fitted estimate.

NOTE: The border prices used in the regressions for NPRD, NPRLT, Pp/Pna and Pr/Pna are deflated by Pna; the border prices in the other



**APPENDIX TABLES**



Appendix Table A1.1  
Indices of Agricultural Production  
(1972=100)

YEA	FOOD		NONFOOD		IMPORTABLES	EXPORTABLES	NONTRADABLES
	a	b	a	b			
1950	35.77	34.83	43.04	51.37	42.17	30.38	35.21
1951	40.76	38.29	58.17	70.85	42.80	40.90	39.35
1952	42.54	43.10	42.92	62.07	47.53	37.12	48.72
1953	48.25	48.93	46.41	58.09	51.27	40.98	67.31
1954	51.88	52.50	50.27	60.94	52.64	46.93	70.70
1955	53.10	52.62	56.97	62.31	52.89	49.16	71.73
1956	54.03	53.39	60.53	74.24	55.38	48.52	75.36
1957	55.74	53.83	70.88	89.75	56.36	51.63	77.79
1958	57.21	55.74	69.47	87.01	54.11	56.24	80.72
1959	62.28	63.50	59.83	84.98	62.45	58.90	80.47
1960	64.35	65.96	60.48	90.16	66.49	59.05	83.06
1961	64.11	65.57	61.59	93.65	67.14	58.41	81.68
1962	71.26	71.56	75.10	104.02	71.50	69.90	83.64
1963	73.55	73.12	81.26	107.49	71.37	75.36	83.40
1964	76.28	76.35	81.07	107.70	70.63	80.41	90.29
1965	76.91	77.21	77.68	91.16	73.39	77.30	92.94
1966	76.37	76.40	80.41	101.98	75.08	75.21	92.41
1967	79.81	79.53	82.83	89.89	76.69	80.99	90.08
1968	83.72	84.63	81.81	100.23	84.46	82.85	88.21
1969	83.68	84.86	79.83	96.43	84.21	81.88	91.79
1970	96.53	98.53	88.10	106.64	98.39	94.44	99.77
1971	101.38	104.57	84.64	97.26	103.08	101.30	93.85
1972	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1973	99.89	100.11	100.62	111.14	88.29	111.83	101.91
1974	114.61	117.68	99.25	115.15	109.80	119.67	114.07
1975	128.99	128.28	131.20	120.70	117.57	138.33	135.88
1976	151.16	147.36	166.95	130.62	125.90	174.89	153.64
1977	157.95	152.93	178.24	127.59	133.17	174.10	186.11
1978	169.41	163.46	192.12	124.94	140.75	188.60	197.71
1979	179.65	174.58	196.94	129.21	148.28	198.44	218.95
1980	189.77	184.14	208.12	128.81	153.97	215.86	215.34
1981	188.90	185.23	195.95	119.02	153.96	213.88	213.32
1982	191.65	192.71	175.66	126.70	164.30	210.04	212.82
1983	178.01	180.09	161.33	140.12	154.55	204.20	159.25
1984	175.51	179.93	150.46	158.48	155.35	197.87	163.73

NOTES: The group indices (i.e., food, nonfood, etc.) were computed from the sum total of the value of production at 1972 prices of the individual crops comprising each group.

- a - including coconut
- b - excluding coconut

Source of Basic Data: NEDA, Philippine Statistical Yearbook, 1985.

Appendix Table A1.1 cont'd

YEAR	Rice	Corn	Sugarcane	Coconut	Banana	Pineapple	Mango	Abaca	Tobacco
1950	48.94	28.31	25.61	41.40	16.47	20.03	19.11	74.66	46.89
1951	49.14	29.80	36.43	55.68	18.85	23.96	18.90	118.44	53.11
1952	53.16	37.64	39.90	39.18	20.88	26.52	20.99	104.09	47.42
1953	59.05	35.05	42.54	44.13	26.83	32.65	31.38	102.36	39.79
1954	59.76	38.58	52.95	48.18	27.92	35.20	33.82	96.46	49.02
1955	60.15	38.04	51.08	55.93	30.08	36.62	35.15	94.91	53.46
1956	61.47	44.83	45.56	57.84	30.94	37.97	36.61	109.26	68.03
1957	62.83	44.23	43.20	67.19	32.56	38.43	36.96	116.71	90.41
1958	60.16	42.10	54.57	66.03	34.75	41.01	39.54	113.17	88.10
1959	69.19	50.19	70.76	54.91	34.27	37.89	38.08	101.27	91.83
1960	70.23	57.57	70.87	54.68	31.35	47.47	40.17	85.83	113.68
1961	69.58	59.76	66.93	55.31	35.61	41.05	41.35	104.27	106.57
1962	73.43	62.56	74.50	69.43	53.56	49.49	46.09	105.63	123.80
1963	74.50	62.88	79.50	76.12	56.82	53.67	64.37	116.08	120.25
1964	72.17	63.86	83.50	75.86	77.02	55.19	66.32	121.98	115.45
1965	74.98	64.85	79.69	75.04	69.87	62.42	90.24	121.71	81.35
1966	76.48	68.17	71.60	76.19	69.66	66.71	91.70	122.89	103.20
1967	76.88	73.60	79.40	81.44	78.09	73.77	93.51	106.81	90.76
1968	85.65	79.99	84.64	78.20	79.64	80.11	88.21	93.91	115.28
1969	83.47	85.60	84.84	76.58	76.21	84.51	98.05	96.19	100.89
1970	98.28	99.21	101.61	84.47	91.42	82.74	105.79	111.17	108.70
1971	104.76	99.39	116.71	82.17	105.58	83.06	95.89	95.00	99.11
1972	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1973	86.57	91.04	124.96	98.57	103.32	104.01	130.82	108.27	115.10
1974	109.69	111.53	135.10	96.14	126.06	119.92	133.54	114.35	112.61
1975	110.98	124.19	128.75	133.26	172.02	150.44	166.88	121.34	101.42
1976	120.77	134.24	159.42	174.06	231.67	148.85	204.39	126.52	104.62
1977	126.59	137.08	138.68	188.15	249.71	149.52	214.50	136.78	89.52
1978	135.19	138.13	128.53	205.28	321.99	164.69	233.75	117.89	100.71
1979	141.13	152.67	125.28	210.20	365.45	214.32	253.35	134.70	91.12
1980	147.15	154.27	122.22	223.65	405.79	453.99	263.04	142.78	74.60
1981	145.03	153.63	125.04	211.01	415.56	458.24	255.65	116.53	69.45
1982	152.52	162.54	133.26	185.25	416.03	440.30	297.28	108.72	83.13
1983	145.18	154.43	134.54	165.48	396.47	596.56	259.83	81.11	79.57
1984	147.25	165.31	127.68	148.90	396.65	609.25	263.11	81.02	117.58

Appendix Table A1.1 cont'd

YEAR	Coffee	Cacao	Peanuts	Citrus	Other Fruits & Nuts	Root- Crops	Vege- tables	Beans & Peas	Rubber, Ramie, & Maguey
1950	7.75	20.00	65.08	30.23	23.90	54.55	17.18	65.25	11.36
1951	8.91	22.86	85.19	32.21	24.88	57.37	23.33	93.22	15.75
1952	9.69	37.14	81.48	30.84	27.91	66.99	33.90	161.86	10.26
1953	11.05	37.14	89.95	41.98	38.17	93.24	56.25	151.69	12.45
1954	11.82	40.00	92.59	45.80	41.13	96.90	57.98	166.95	15.75
1955	13.57	42.86	93.12	48.09	43.59	98.55	56.74	169.49	14.29
1956	13.76	42.86	94.71	50.08	45.11	103.54	60.70	177.97	12.45
1957	16.09	45.71	96.30	52.37	46.80	106.10	61.26	186.86	25.27
1958	18.60	48.57	98.41	55.27	48.93	109.22	63.71	202.54	23.08
1959	20.54	48.57	86.77	56.49	46.80	110.00	62.27	208.05	26.01
1960	50.19	88.57	80.95	66.11	52.37	115.92	60.60	179.24	27.11
1961	62.60	102.86	67.72	81.07	52.37	118.69	53.99	141.53	28.94
1962	83.53	91.43	57.67	94.81	60.20	109.56	64.59	140.25	38.83
1963	63.76	97.14	58.73	94.81	60.79	111.72	59.62	132.63	47.99
1964	76.16	100.00	75.66	93.74	63.29	127.49	62.30	116.10	50.55
1965	85.47	120.00	69.84	108.09	66.19	126.20	70.68	108.90	50.92
1966	82.95	114.29	72.49	114.96	69.84	120.88	73.33	101.69	49.82
1967	85.85	100.00	75.66	119.85	72.72	112.31	76.01	86.86	47.99
1968	85.08	120.00	79.37	118.47	70.67	107.19	74.77	93.22	68.13
1969	85.66	125.71	78.84	113.89	73.37	109.89	81.54	84.75	83.15
1970	94.96	122.86	92.06	107.94	85.53	108.10	101.54	97.46	89.74
1971	95.93	102.86	100.00	95.73	76.10	100.25	99.61	100.00	96.70
1972	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1973	98.64	102.86	96.30	97.40	91.87	100.23	112.93	109.75	105.49
1974	102.71	117.14	114.29	94.05	96.92	115.86	130.89	98.31	124.91
1975	177.13	94.29	191.53	118.93	100.06	148.40	145.48	147.88	179.12
1976	156.59	91.43	215.87	183.51	102.94	176.03	151.70	174.15	220.88
1977	203.68	82.86	244.44	192.37	139.65	227.77	162.89	176.69	224.54
1978	230.23	88.57	200.00	187.33	150.21	246.73	171.56	174.15	216.48
1979	223.84	108.57	260.32	186.41	180.22	293.08	152.88	177.97	234.80
1980	242.83	117.14	264.02	199.24	155.52	284.93	165.35	200.42	264.84
1981	284.30	120.00	156.61	198.32	153.71	279.76	164.37	205.51	278.75
1982	332.17	151.43	257.14	202.44	171.44	260.61	168.91	213.14	303.66
1983	284.69	157.14	189.42	198.63	98.96	172.65	146.86	156.36	464.84
1984	221.51	137.14	223.81	190.38	94.22	182.01	154.52	165.68	464.84

NOTES:

Food crops include palay, corn, banana, fruits, sugarcane, coffee, cacao, citrus, rootcrops, vegetables, beans, peanuts.

Nonfood crops are coconut, abaca, tobacco, rubber, ramie, maguey and other commercial crops.

Importable crops are palay, corn, coffee, cacao and peanuts.

Nontraded crops are citrus, rootcrops, vegetables, beans and peas, rubber, ramie, maguey and all other crops not classified above.

Appendix Table A1.2  
Number and Area of Farms, by Crop  
1971 and 1980 Census

	(in 1,000)		(in thousand hectares)	
	Total Number of Farms 1971	1980	Total Area of Farms 1971	1980
Palay	981.9	1,610.5	2,661.2	3,755.7
Corn	514.2	753.6	1,493.9	1,955.0
Coconut	432.5	709.6	2,152.8	2,842.9
Sugarcane	27.0	34.6	368.1	132.8
Tobacco	3.9	5.3	7.3	8.1
Abaca	12.5	16.1 <sup>§/</sup>	64.3	60.1 <sup>§/</sup>
Banana	13.6	20.6	58.3	79.7
Pineapple	0.6	2.3	17.9	28.1
Coffee	14.1	37.3	48.0	123.8
Citrus	0.9	3.5	6.1	16.8
Vegetables	8.5	28.6	16.1	47.7
Rootcrops	33.3	76.8	68.2	131.6
Chicken	3.0	13.5	3.9	16.9
Hog	11.7	23.1	24.4	22.7
Cattle	23.6	6.6	387.2	128.7
All Types	2,354.6	3,420.3	8,493.7	9,725.2

<sup>§/</sup>Fibercrops, include ramie and maguey.

Sources of Data: 1971 and 1980 Censuses of Agriculture.

**Appendix Table A1.3**  
**Proportion of Total Agricultural Land, by Farm Size,**  
**1960, 1971 and 1980 Census**

Farm Size	AREA		Number of Farms	
	Area (000 has.)	Share (%)	Number (000)	Share (%)
<b>I. 1980 Census</b>				
Under 0.5	689	0.71	290.0	8.48
0.5 and under 1.0	3001	3.08	485.8	14.20
1.0 and under 2.0	11899	12.21	964.2	28.19
2.0 and under 3.0	13323	13.66	613.8	17.95
3.0 and under 5.0	20667	21.20	588.2	17.20
5.0 up to 7.0	16121	16.54	283.6	8.29
> 7.0 and < 10.0	6308	6.47	76.4	2.23
> 10.0 and < 25	14063	14.42	103.7	3.03
25 and over	11418	11.71	14.6	0.43
TOTAL	97492	100.00	3420.3	100.00
<b>II. 1971 Census</b>				
under 1.0	162.2	1.90	319.4	13.57
1.0 and under 3.0	1887.7	22.20	1117.6	47.47
3.0 and under 5.0	2013.3	23.70	558.3	23.71
5.0 and under 10.0	1553.5	18.30	243.8	10.35
10.0 and under 25	1412.1	16.60	101.1	4.29
25 and under 50	284.5	3.30	8.6	0.37
50 and over	1180.5	13.90	5.6	0.24
TOTAL	8493.7	100.00	2354.5	100.00
<b>III. 1960 Census</b>				
under 0.5	23.0	0.30		
0.5 and under 1.0	101.5	1.30		
1.0 and under 2.0	795.6	10.20		
2.0 and under 3.0	1000.5	12.90		
3.0 and under 5.0	1426.5	18.40		
5.0 and under 10.0	1845.2	23.70		
10 and under 20	1189.5	15.30		
20 and under 50	439.3	5.60		
50 and above	951.5	12.20		
TOTAL	7772.5	100.00		

Source: Philippine Census of Agriculture, 1960, 1971 and 1980

Appendix Table A1.4  
Distribution of Farms by Tenure of Operator, 1971  
(In percent)

TYPE OF FARM	TENURE OF OPERATOR				
	Full Owner	Part Owner	For Share of Produce	For Fixed Amt. of Cash/Produce	Others
<b>A. Share to total number of farms</b>					
All farms	58.0	11.4	24.2	2.1	4.3
Palay	45.0	15.9	29.5	4.7	4.9
Corn	61.4	7.3	27.5	0.1	3.7
Coconut	74.4	6.4	16.6	0.1	2.5
Tobacco	47.9	16.7	29.7	0.5	5.2
Sugarcane	30.8	11.9	45.6	1.5	10.2
Vegetable	57.2	10.6	21.7	0.9	9.6
Tuber, root & bulbs	76.6	5.0	11.2	0.2	7.0
Coffee	85.5	2.6	6.5	0.2	5.2
Abaca	76.7	7.9	11.3	0.2	3.9
Banana	68.8	6.2	10.6	1.0	13.4
Pineapple	37.5	8.6	37.8	0.8	15.3
Other Fruits	76.4	6.0	10.1	0.5	7.0
Chicken	71.0	6.7	8.8	1.3	12.2
Hog	62.4	13.5	16.8	1.5	5.8
Cattle	62.5	14.8	16.0	1.6	5.1
Others	69.0	12.4	13.7	0.5	4.4
<b>B. Share to Total Area of Farms</b>					
All Farms	62.9	11.0	16.3	1.5	8.3
Palay	49.8	15.9	23.1	4.4	6.8
Corn	69.5	8.1	18.2	4.4	6.8
Coconut	73.8	7.2	14.6	0.1	4.1
Tobacco	53.8	17.3	23.4	0.2	5.3
Sugarcane	48.5	18.1	10.9	0.6	21.9
Citrus	45.4	4.5	15.1	0.1	34.9
Vegetables	61.9	12.0	17.2	0.8	8.1
Tuber, root & bulb crops	80.4	5.1	8.3	0.1	6.1
Coffee	86.5	4.1	4.7	0.1	4.6
Abaca	76.9	8.3	8.9	0.1	5.8
Banana	63.5	6.0	7.2	0.7	22.6
Pineapple	3.5	0.6	2.1	0.1	93.7
Other Fruit	73.7	6.1	7.9	0.3	12.0
Chicken	64.4	9.8	10.8	2.3	12.7
Hog	60.8	15.2	11.4	1.0	11.6
Cattle	50.5	8.6	2.8	0.3	37.8
Others	71.5	9.9	9.7	0.4	8.5

Note: "Others" include rent free, manager, and other forms of tenure.

Source of Data: 1971 Census of Agriculture.

Appendix Table A1.5  
Distribution of Farms by Tenure of Operator, 1980  
(In Percent)

TYPE OF FARM	TENURE OF FARM				
	Fully Owned	Ownerlike Possession†	For Share	For Fixed Amount of Money/Produce	Others
<u>A. Share to Total Number of Farms</u>					
Palay	44.89	13.36	28.98	8.68	4.09
Corn	51.52	11.85	30.31	1.80	6.79
Coconut	60.60	11.08	25.16	1.35	1.81
Tobacco	41.05	10.96	37.10	4.58	6.31
Sugarcane	38.40	7.67	43.11	8.67	2.14
Citrus	56.92	11.04	21.18	6.32	4.54
Vegetable	49.79	15.45	20.06	5.96	8.73
Tuber, Root & Bulb Crops	51.12	15.58	18.16	2.10	13.04
Banana	60.81	13.74	14.38	1.66	9.40
Pineapple	48.25	9.27	25.66	6.06	10.76
Coffee	76.12	9.56	7.94	0.79	5.59
Mango	66.03	11.45	14.23	2.05	6.24
Fiber Crops	63.70	13.11	18.80	1.38	3.01
Other Permanent Crops	67.50	11.01	15.58	1.25	4.66
Other Temporary Crops	49.72	13.17	25.88	4.97	6.25
Cattle	65.41	11.69	10.92	1.26	10.72
Hog	65.48	14.71	6.55	0.91	12.35
Other Livestock	54.66	15.92	14.24	2.80	12.38
Chicken	67.52	12.65	5.72	1.60	12.51
Other Poultry	78.61	5.83	2.37	3.55	9.64
Others	70.18	13.91	4.35	1.29	10.27
ALL TYPES	50.31 <sup>a/</sup> 59.31 <sup>b/</sup>	12.50 <sup>a/</sup> 14.74 <sup>b/</sup>	27.34 <sup>a/</sup> 33.23 <sup>b/</sup>	5.25 <sup>a/</sup> 6.19 <sup>b/</sup>	4.60 <sup>a/</sup> 5.43 <sup>b/</sup>

Table A1.5 cont'd

TYPE OF FARM	T E N U R E   O F   F A R M				
	Fully Owned	Ownerlike Possession‡	For Share	For Fixed Amount of Money/ Produce	Others
<b>B. Share to Total Farm Area</b>					
Palay	55.20	12.94	21.91	7.48	2.47
Corn	65.08	10.20	18.33	1.39	5.00
Coconut	64.52	9.33	23.99	0.91	1.25
Tobacco	49.38	8.64	34.57	3.70	3.70
Sugarcane	65.15	12.05	13.88	7.58	1.34
Citrus	59.76	13.02	18.34	6.51	2.37
Vegetable	55.98	16.98	15.09	5.24	6.71
Tuber, Root & Bulb Crops	63.68	14.06	12.39	1.44	8.43
Banana	55.83	10.79	7.28	21.71	4.39
Pineapple	6.76	1.42	28.11	62.63	1.08
Coffee	78.92	11.47	4.44	0.48	4.69
Mango	66.67	13.33	8.89	2.22	8.89
Fiber Crops	70.05	12.31	14.48	0.66	2.50
Other Permanent Crops	71.28	11.65	10.50	1.50	5.07
Other Temporary Crops	59.12	10.46	20.72	6.46	3.24
Cattle	77.31	10.80	0.86	7.69	3.34
Hog	72.69	12.33	8.81	0.88	5.29
Other Livestock	66.27	15.39	10.65	2.37	5.32
Chicken	75.40	11.90	7.14	2.38	3.17
Other Poultry	85.71	14.29	-	-	-
Others	75.15	15.15	3.33	0.91	5.46
ALL TYPES	61.25 <sub>a/</sub> 61.15 <sub>b/</sub>	11.22 <sub>a/</sub> 11.25 <sub>b/</sub>	20.47 <sub>a/</sub> 20.52 <sub>b/</sub>	4.26 <sub>a/</sub> 4.27 <sub>b/</sub>	2.80 <sub>a/</sub> 2.80 <sub>b/</sub>

‡ The sum of the reported number of farms by tenure does not tally with the total number of farms.

<sub>a/</sub> Percent share to total number (area) of responses by tenure

<sub>b/</sub> Percent share to total number (area) of farms

Source of Data: NCSO, 1980 Census of Agriculture



Appendix to Chapter 2

ESTIMATION OF THE FREE TRADE EQUILIBRIUM EXCHANGE RATE

Appendix Table A2.1 presents in tabular form the computation for the free trade equilibrium exchange rate. The elasticities of supply of, and demand for, foreign exchange were estimated from elasticities of supply of export and demand for imports respectively.\* The price elasticity of demand for foreign exchange is Khan's (1980) estimate of price elasticity of demand for imports (equal to 2.7). The price elasticity of supply of foreign exchange (1.4) is a weighted average of the supply price elasticities of export for the major exports (except sugar) given in Bautista (1977). The supply price elasticity of sugar export was estimated from the price elasticities of output and domestic demand given in WB (1982) using the following formula:

$$S_{x, \text{ sugar}} = \frac{P}{X} S_{Q, \text{ sugar}} - \frac{D}{X} \eta_{DD, \text{ sugar}}$$

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 \*The relationship between the elasticity of supply of foreign exchange with the price elasticities of demand for, and supply of, exports is given by:

$$\epsilon_S = \frac{S_x (d_x + 1)}{d_x - S_x}$$

where  $S_x$  ( $d_x$ ) is the price elasticity of supply of (demand for) exports. Assuming that the country is a price taker,  $d_x \rightarrow \infty$  and  $\epsilon_S \rightarrow S_x$ . Similarly, the elasticity of demand for foreign exchange ( $\eta_D$ ) is given by:

$$\eta_D = \frac{d_m (S_m + 1)}{S_m - d_m}$$

where  $S_m$  ( $d_m$ ) is the price elasticity of supply of (demand for) imports. Assuming that the country is a price taker on the import side also,  $S_m \rightarrow \infty$  and  $\eta_D \rightarrow d_m$

Table A2.1  
Determination of Equilibrium Exchange Rate

Tx	Tm	Qo	Qs	Qd	eS	nD	Eo	E1	(E1-Eo)/Eo	E*	E*/Eo	(E*-E1)/Eo	E2	
		----	(M \$)	----					(%)			(%)		
1960	0.00	0.63	5	783	788	1.40	2.70	2.02	2.02	0.16	2.54	1.26	25.51	2.54
1961	0.00	0.50	70	706	776	1.40	2.70	2.02	2.07	2.27	2.52	1.25	22.65	2.48
1962	0.10	0.45	-32	810	778	1.40	2.70	3.83	3.79	-0.99	4.57	1.19	20.31	4.61
1963	0.10	0.42	-180	972	792	1.40	2.70	3.91	3.71	-5.14	4.45	1.14	18.88	4.65
1964	0.10	0.41	-84	1050	966	1.40	2.70	3.91	3.83	-2.06	4.57	1.17	18.92	4.65
1965	0.08	0.46	-122	1176	1054	1.40	2.70	3.93	3.82	-2.72	4.62	1.18	20.29	4.73
1966	0.06	0.43	-147	1269	1122	1.40	2.70	3.90	3.78	-3.06	4.53	1.16	19.23	4.65
1967	0.04	0.44	42	1391	1433	1.40	2.70	3.93	3.96	0.72	4.76	1.21	20.28	4.73
1968	0.02	0.45	266	1285	1551	1.40	2.70	3.93	4.10	4.44	4.95	1.26	21.58	4.78
1969	0.01	0.45	253	1259	1512	1.40	2.70	3.93	4.10	4.33	4.95	1.26	21.61	4.78
1970	0.03	0.44	48	1441	1489	1.40	2.70	5.91	5.96	0.80	7.16	1.21	20.31	7.11
1971	0.04	0.43	2	1536	1539	1.40	2.70	6.43	6.43	0.03	7.71	1.20	19.81	7.70
1972	0.03	0.41	-5	1667	1663	1.40	2.70	6.67	6.67	-0.07	7.94	1.19	19.14	7.95
1973	0.02	0.40	-473	2685	2211	1.40	2.70	6.76	6.43	-4.86	7.63	1.13	17.67	7.95
1974	0.05	0.39	208	3804	4012	1.40	2.70	6.79	6.88	1.29	8.15	1.20	18.72	8.06
1975	0.04	0.44	923	3488	4412	1.40	2.70	7.25	7.65	5.50	9.20	1.27	21.35	8.80
1976	0.02	0.50	1105	3657	4761	1.40	2.70	7.44	7.90	6.15	9.66	1.30	23.66	9.20
1977	0.02	0.55	820	4428	5248	1.40	2.70	7.40	7.70	4.03	9.52	1.29	24.57	9.22
1978	0.02	0.61	1162	5164	6326	1.40	2.70	7.37	7.72	4.78	9.67	1.31	26.48	9.32
1979	0.02	0.66	1562	6533	8095	1.40	2.70	7.38	7.75	5.04	9.81	1.33	27.89	9.44
1980	0.02	0.63	2033	8314	10347	1.40	2.70	7.51	7.90	5.14	9.93	1.32	27.14	9.55
1981	0.02	0.59	2292	8858	11150	1.40	2.70	7.90	8.33	5.39	10.39	1.32	26.13	9.96
1982	0.02	0.56	3356	8255	11611	1.40	2.70	8.54	9.21	7.82	11.43	1.34	26.00	10.76
1983	0.01	0.53	2750	8604	11354	1.40	2.70	11.11	11.83	6.44	14.58	1.31	24.78	13.86
1984	0.02	0.56	1298	8246	9544	1.40	2.70	16.70	17.28	3.48	21.40	1.28	24.69	20.82
1985	0.01	0.49	77	8296	8373	1.40	2.70	18.61	18.65	0.23	22.69	1.22	21.72	22.65
1986	0.01	0.45	-1022	9074	8052	1.40	2.70	20.39	19.79	-2.97	23.79	1.17	19.63	24.39

NOTES:

Tx = Export Tax	eS = Elasticity of Supply of Foreign Exchange
Tm = Import Tax	nD = Elasticity of Demand for Foreign Exchange
Qd = Demand for Foreign Exchange	Eo = Actual Nominal Exchange Rate (Peso-Dollar Rate)
Qs = Supply of Foreign Exchange	E* = Free Trade and External Balance Equilibrium Exchange Rate
Qo = Actual Current Account Deficit	E1 = External Balance Exchange Rate
(in million US dollars;	E2 = Free Trade Exchange Rate
- means surplus)	

where

$S_{x,sugar}$  = price elasticity of supply of sugar exports

$S_{Q,sugar}$  = price elasticity of output

$\eta_{DD}$  = price elasticity of domestic demand

P = production

The values of the average import tariff rate (tm) and average export tax rate (tx) were computed from estimates of implicit tariffs (and export taxes) by industry during 1969, 1974, 1979 and 1985 of Bautista and Power (1979) and Medalla and Power (1986). The weights for each industry were derived from the elasticities of supply and demand, output, exports and imports by industry:

importables:  $(e_d + e_s)Q + (e_d * M)$

exportables:  $(e_d + e_s)Q - (e_d * X)$

mixed:  $(e_d + e_s)Q - e_d(M - X)$

where

$e_d, e_s$  = elasticities of demand, supply

Q = output

M = imports

X = exports

The estimates of tm for the years intervening 1969, 1974, 1979 and 1985 were extrapolated from the estimates of tm for the four years. The values of tm for 1960-1968 were based on the

1969 estimate as adjusted backwards to 1960 using the weighted average of Baldwin's (1975) estimates of the effective exchange rate for imports during 1960-1969 as computed by Bautista (1986). The estimates of tx for the years intervening 1969, 1974, 1979 and 1985 were extrapolated from the estimates during the four years with the use of the ratio of actual export tax receipts to the value of exports of goods and services as the adjustment factor. The estimate of tx for 1962-1965 is the implied taxation due to the 20 percent retention scheme whereby exporters were required to sell to the Central Bank 20 percent of their export proceeds at the old official exchange rate. The estimates of tx for 1966-1968 were extrapolated from the 1965 and 1969 estimates.

In computing for the equilibrium exchange rate, the sustainable current account deficit is implicitly assumed to be zero. This assumption was adopted for practical, not analytical, reasons. In principle some amount of current account deficit is sustainable because the Philippines is a capital-scarce country. The problem is what is the sustainable deficit under free trade and given world capital market conditions. Historical data on long term capital inflows can not be used because the flows were paltry during the 1960s and very large during the 1970s, a reflection of the changes in world capital market conditions and the Philippine policy regime during the two decades. Intal (1983), using a modified Hooper-Morton model (1980), estimated that the sustainable current account deficit during the 1970s is

5.7 percent of (trend) GNP. However, this estimate seems to be high in light of the recent developments in the Philippines and the world. Without having to estimate a model complex enough to capture the impact of changes in world capital market conditions and investors' expectations on the sustainable deficit, the assumption of zero sustainable deficit seems to be the workable, least arbitrary assumption in computing for the equilibrium exchange rate.

Appendix Table A2.2a  
Domestic and Border Price of Fertilizer by Grade (peso/kg)

	Ex-warehouse Price					Border Price				
	Urea	Amosul	Amophos	Complete	Muriate of (14-14-14) Potash	Urea	Amosul	Amophos	Complete	Muriate of (14-14-14) Potash
1960	0.33	0.18	0.26	0.22	0.22	0.20	0.11	0.21	0.22	0.25
1961	0.33	0.19	0.29	0.24	0.24	0.19	0.13	0.25	0.26	0.25
1962	0.38	0.21	0.33	0.25	0.25	0.27	0.14	0.29	0.30	0.25
1963	0.44	0.22	0.36	0.25	0.25	0.28	0.15	0.28	0.29	0.25
1964	0.49	0.23	0.38	0.33	0.33	0.33	0.18	0.29	0.36	0.26
1965	0.49	0.27	0.39	0.34	0.34	0.35	0.19	0.31	0.23	0.26
1966	0.48	0.29	0.40	0.35	0.35	0.29	0.15	0.29	0.33	0.24
1967	0.47	0.29	0.38	0.38	0.33	0.27	0.13	0.29	0.20	0.21
1968	0.44	0.29	0.37	0.37	0.33	0.25	0.12	0.27	0.19	0.21
1969	0.40	0.29	0.37	0.35	0.33	0.25	0.17	0.23	0.24	0.25
1970	0.56	0.36	0.48	0.48	0.29	0.49	0.30	0.42	0.51	0.28
1971	0.52	0.39	0.52	0.52	0.63	0.63	0.36	0.52	0.57	0.31
1972	0.58	0.36	0.56	0.60	0.58	0.65	0.40	0.54	0.59	0.33
1973	0.78	0.48	0.58	0.72	0.61	0.71	0.39	0.55	1.00	0.35
1974	2.21	1.24	1.46	1.64	1.00	1.89	1.14	2.07	1.92	0.60
1975	2.49	1.44	1.71	1.66	1.32	2.69	1.59	1.47	2.80	0.65
1976	1.64	0.94	1.33	1.23	1.20	0.91	0.50	0.68	0.95	0.56
1977	1.53	0.96	1.33	1.23	1.07	0.96	0.67	0.73	1.10	0.51
1978	1.53	0.96	1.33	1.23	1.07	1.17	0.76	0.72	1.26	0.52
1979	1.72	1.20	1.59	1.47	1.21	1.30	0.82	1.08	1.30	0.69
1980	1.86	1.35	1.75	1.61	1.46	1.75	1.03	1.95	1.98	1.13
1981	2.23	1.65	2.09	1.93	2.01	2.17	1.21	1.78	1.86	1.20
1982	2.35	1.72	2.23	2.18	2.06	1.67	0.85	1.44	1.53	0.99
1983	2.52	1.79	2.45	2.47	2.23	1.63	0.99	1.81	1.88	1.11
1984	4.13	2.39	3.87	3.95	3.25	3.20	1.80	3.01	3.00	1.96
1985	3.67	2.91	4.81	4.99	3.82	3.10	1.80	3.04	3.19	1.74
1986	2.78	1.54	3.55	3.83	2.38	2.27	1.34	3.27	3.47	1.72

Appendix Table A2.2b  
 Implicit Tariff on Fertilizer by Grade (in %)

	Urea	Amosul	Amophos	Complete	Muriate of (14-14-14)	Potash
1960	65.00	63.64	23.81	0.00	-12.00	
1961	73.68	46.15	16.00	-7.69	-4.00	
1962	40.74	50.00	13.79	-16.67	0.00	
1963	57.14	46.67	28.57	-13.79	0.00	
1964	48.48	27.78	31.03	-8.33	26.92	
1965	40.00	42.11	25.81	47.83	30.77	
1966	65.52	93.33	37.93	6.06	45.83	
1967	74.07	123.08	31.03	90.00	57.14	
1968	76.00	141.67	37.04	94.74	57.14	
1969	60.00	70.59	60.87	45.83	32.00	
1970	14.29	20.00	14.29	-5.88	3.57	
1971	-17.46	8.33	0.00	-8.77	103.23	
1972	-10.77	-10.00	3.70	1.69	75.76	
1973	9.86	23.08	5.45	-28.00	74.29	
1974	16.93	8.77	-29.47	-14.58	66.67	
1975	-7.43	-9.43	16.33	-40.71	103.08	
1976	80.22	88.00	95.59	29.47	114.29	
1977	59.38	43.28	82.19	11.82	109.80	
1978	30.77	26.32	84.72	-2.38	105.77	
1979	32.31	46.34	47.22	13.08	75.36	
1980	6.29	31.07	-10.26	-18.69	29.20	
1981	2.76	36.36	17.42	3.76	67.50	
1982	40.72	102.35	54.86	42.48	108.08	
1983	54.60	80.81	35.36	31.38	100.90	
1984	29.06	32.78	28.57	31.67	65.82	
1985	18.39	61.67	58.22	56.43	119.54	
1986	22.47	14.93	8.56	10.37	38.37	

Appendix Table A2.3  
 Import Price, Wholesale Price and Net  
 Protection Rate for Rice, 1914-1940

Year	Import Price (P/MT)	Wholesale Price (Manila) (P/MT)	Wholesale Price Import Price
1914	67.60	95.71	1.42
1915	61.57	101.96	1.66
1916	68.71	109.11	1.59
1917	73.35	119.29	1.63
1918	17.39	163.39	9.10
1919	173.50	241.25	1.39
1920	211.16	245.54	1.16
1921	18.08	132.68	7.34
1922	108.85	135.00	1.24
1923	111.56	145.89	1.31
1924	122.60	169.64	1.38
1925	17.39	166.96	9.60
1926	128.65	163.57	1.27
1927	16.95	127.68	7.53
1928	111.55	131.43	1.18
1929	110.32	153.21	1.39
1930	137.62	109.46	0.80
1931	95.87	81.79	0.85
1932	75.68	73.57	0.97
1933	58.24	83.39	1.43
1934	75.91	71.43	0.94
1935	76.48	89.46	1.17
1936	64.16	113.93	1.78
1937	65.72	96.96	1.48
1938	106.62	113.39	1.06
1939	60.71	113.39	1.87
1940	64.09	102.68	1.60

Note: The import price was computed from Mears, et.al's data on the volume of imports and value of imports. The sharp decline in import prices in 1918, 1921, 1925 and 1927 may indicate printing errors in the value of imports.

Source of basic data: Leon Mears, et.al., Rice Economy of the Philippines, 1974, p. 330.

Appendix Table A3.1  
Domestic and Border Prices by Crop, Philippines (Peso/kg.)

	Retail Prices			Wholesale Prices				Producer Prices			
	Rice	Corn	Sugar	Rice	Corn	Sugar	Copra	Rice	Corn	Sugar	Copra
1960	0.43	0.29	0.30	0.36	0.22	0.22	0.40	0.31	0.17	0.24	0.31
1961	0.47	0.30	0.40	0.45	0.25	0.30	0.38	0.35	0.19	0.32	0.30
1962	0.44	0.30	0.39	0.41	0.20	0.31	0.48	0.34	0.18	0.37	0.37
1963	0.52	0.37	0.46	0.47	0.27	0.35	0.54	0.42	0.23	0.47	0.43
1964	0.64	0.40	0.50	0.57	0.28	0.36	0.57	0.48	0.25	0.40	0.43
1965	0.61	0.45	0.43	0.55	0.36	0.31	0.66	0.46	0.26	0.38	0.53
1966	0.75	0.50	0.53	0.67	0.36	0.41	0.58	0.52	0.28	0.46	0.46
1967	0.84	0.46	0.51	0.68	0.33	0.40	0.62	0.54	0.26	0.47	0.48
1968	0.73	0.46	0.55	0.64	0.33	0.40	0.75	0.51	0.26	0.47	0.55
1969	0.75	0.46	0.68	0.60	0.33	0.52	0.67	0.52	0.27	0.56	0.51
1970	0.80	0.50	0.75	0.72	0.38	0.60	0.96	0.55	0.33	0.68	0.74
1971	1.08	0.81	0.76	0.91	0.64	0.61	0.88	0.85	0.48	0.82	0.71
1972	1.15	0.82	1.07	1.06	0.63	0.79	0.67	0.92	0.54	0.93	0.52
1973	1.51	0.91	1.06	1.24	0.67	0.79	1.83	1.05	0.56	0.97	1.26
1974	1.98	1.39	1.15	1.78	1.07	0.83	3.63	1.37	0.91	1.58	2.26
1975	1.90	1.53	1.32	1.81	1.16	1.06	1.47	1.42	0.93	1.97	0.87
1976	2.03	1.46	1.37	1.91	1.19	1.24	1.68	1.48	0.94	1.71	0.99
1977	2.10	1.60	1.66	1.96	1.22	1.37	2.56	1.54	0.99	1.38	1.40
1978	2.10	1.60	1.75	1.91	1.23	1.44	3.04	1.49	0.97	1.42	1.84
1979	2.36	1.67	2.15	1.95	1.26	1.74	4.06	1.55	1.00	1.82	3.56
1980	2.38	2.00	2.30	2.13	1.62	1.85	2.56	1.66	1.16	2.07	1.36
1981	2.66	2.23	2.35	2.49	1.90	1.87	2.35	1.89	1.29	2.29	1.27
1982	2.94	2.35	2.98	2.61	2.06	2.57	1.86	2.00	1.34	2.61	1.21
1983	3.07	2.44	3.39	2.80	2.10	2.91	3.51	2.24	1.39	2.89	2.64
1984	4.72	3.96	5.32	4.37	3.38	4.80	9.16	3.59	2.36	4.22	7.02
1985	6.42	5.51	5.80	6.06	4.00	6.33	4.04	4.65	2.91	3.76	3.07
1986	5.92	5.36	6.26	5.40	3.83	6.05	2.68	3.90	2.70	4.16	1.96

Appendix Table A3.1 cont'd

	BPo(P/W)					BPo(R/W)			
	Rice	Corn	Sugar ISA	Sugar XUP	Copra	Rice	Corn	Sugar ISA	Sugar XUP
1960	0.24	0.08	0.13	0.28	0.30	0.34	0.13	0.18	0.38
1961	0.17	0.08	0.11	0.30	0.25	0.23	0.12	0.15	0.40
1962	0.38	0.17	0.22	0.46	0.38	0.49	0.29	0.28	0.58
1963	0.45	0.20	0.48	0.49	0.44	0.56	0.32	0.90	0.65
1964	0.40	0.21	0.47	0.46	0.47	0.53	0.34	0.66	0.64
1965	0.36	0.17	0.17	0.47	0.50	0.48	0.29	0.23	0.65
1966	0.39	0.18	0.15	0.55	0.52	0.57	0.33	0.19	0.71
1967	0.47	0.19	0.16	0.55	0.52	0.73	0.33	0.20	0.70
1968	0.50	0.15	0.16	0.59	0.58	0.72	0.27	0.22	0.81
1969	0.51	0.19	0.26	0.59	0.52	0.74	0.33	0.35	0.77
1970	0.54	0.31	0.46	0.89	0.92	0.79	0.47	0.57	1.11
1971	0.48	0.34	0.61	1.03	0.80	0.61	0.57	0.76	1.28
1972	0.75	0.34	1.02	1.13	0.62	0.94	0.52	1.38	1.54
1973	1.89	0.57	1.34	1.28	1.16	2.72	0.92	1.79	1.72
1974	2.56	1.04	4.22	3.26	2.75	3.70	1.59	5.84	4.52
1975	1.71	0.93	3.09	4.35	1.30	2.28	1.53	3.85	5.42
1976	1.27	0.76	1.80	2.16	1.04	1.74	1.19	1.99	2.38
1977	1.69	0.72	1.26	1.70	1.85	2.30	1.16	1.53	2.06
1978	1.84	0.76	1.20	1.33	2.13	2.59	1.25	1.46	1.61
1979	1.76	0.76	1.49	1.33	3.57	2.68	1.27	1.84	1.64
1980	2.28	0.97	4.51	2.70	2.28	3.27	1.67	5.61	3.36
1981	2.40	1.07	2.81	3.63	1.91	3.38	1.85	3.53	4.57
1982	1.64	0.78	1.51	2.82	1.87	2.40	1.36	1.75	3.27
1983	2.13	1.10	1.95	3.44	2.77	2.92	1.94	2.27	4.01
1984	3.57	1.98	2.95	4.34	8.08	4.69	3.33	3.27	4.81
1985	3.43	1.90	1.66	5.58	4.79	4.73	3.59	1.52	5.12
1986	3.83	1.58	2.45	7.95	2.70	5.81	3.14	2.53	8.23

NOTES:

ISA - border price based on average International Sugar Agreement daily price

XUP - export unit price (or value)

BPo(P/W) - border price at official exchange rate adjusted at producer level

BPo(R/W) - border price at official exchange rate adjusted at retail level

Appendix Table A3.1 cont'd

Year	BP\$(P/W)					BP\$(R/W)			
	Rice	Corn	Sugar ISA	Sugar XUP	Copra	Rice	Corn	Sugar ISA	Sugar XUP
1960	0.31	0.10	0.15	0.30	0.34	0.42	0.17	0.21	0.42
1961	0.22	0.10	0.13	0.33	0.28	0.29	0.15	0.17	0.44
1962	0.45	0.21	0.27	0.59	0.50	0.59	0.34	0.34	0.75
1963	0.52	0.23	0.85	0.62	0.56	0.64	0.37	1.11	0.82
1964	0.46	0.24	0.59	0.59	0.61	0.62	0.39	0.83	0.83
1965	0.43	0.20	0.23	0.60	0.65	0.56	0.35	0.32	0.83
1966	0.46	0.21	0.18	0.63	0.60	0.66	0.38	0.23	0.82
1967	0.57	0.23	0.19	0.67	0.63	0.88	0.40	0.24	0.85
1968	0.63	0.20	0.20	0.74	0.73	0.90	0.35	0.27	1.02
1969	0.64	0.24	0.35	0.74	0.66	0.93	0.41	0.45	0.97
1970	0.66	0.37	0.57	1.07	1.12	0.95	0.57	0.72	1.34
1971	0.58	0.40	0.69	1.23	0.96	0.73	0.60	0.86	1.54
1972	0.90	0.41	1.19	1.35	0.74	1.12	0.62	1.61	1.83
1973	2.13	0.64	1.53	1.45	1.31	3.07	1.04	2.05	1.95
1974	3.07	1.25	5.05	3.91	3.31	4.44	1.91	7.00	5.42
1975	2.17	1.18	3.96	5.52	1.65	2.90	1.94	4.93	6.87
1976	1.65	0.99	2.32	2.80	1.36	2.26	1.54	2.56	3.10
1977	2.17	0.93	1.62	2.19	2.38	2.96	1.50	1.96	2.65
1978	2.41	0.99	1.55	1.74	2.79	3.40	1.64	1.88	2.12
1979	2.34	1.01	1.96	1.77	4.74	3.56	1.69	2.42	2.18
1980	3.02	1.28	5.96	3.57	3.02	4.33	2.21	7.41	4.44
1981	3.15	1.41	3.74	4.78	2.51	4.44	2.44	4.70	6.01
1982	2.19	1.04	2.06	3.77	2.50	3.22	1.83	2.39	4.37
1983	2.80	1.45	2.70	4.52	3.64	3.84	2.54	3.14	5.27
1984	4.57	2.54	3.97	5.56	10.35	6.01	4.26	4.40	6.17
1985	4.18	2.31	2.13	6.81	5.84	5.77	4.38	1.95	6.24
1986	4.47	1.84	3.00	9.28	3.15	6.78	3.66	3.11	9.60

NOTES:

ISA - border price based on average International Sugar Agreement daily price

XUP - export unit price (or value)

BP\$(P/W) - border price at equilibrium exchange rate adjusted at producer level

BP\$(R/W) - border price at equilibrium exchange rate adjusted at retail level

Appendix Table A3.2  
Nominal Rates of Protection  
at the Producer Level (in %)

	Rice	Corn	N P	R D	Sugar ISA XUP	Copra
1960	29.17	112.50			84.62 -14.29	3.33
1961	105.88	137.50			190.91 6.67	20.00
1962	-10.53	5.88			68.18 -19.57	-2.63
1963	-6.67	15.00			-30.88 -4.08	-2.27
1964	20.00	19.05			-14.89 -13.04	-8.51
1965	27.78	52.94			123.53 -19.15	6.00
1966	33.33	55.56			206.67 -16.36	-11.54
1967	14.89	36.84			193.75 -14.55	-7.69
1968	2.00	73.33			193.75 -20.34	-5.17
1969	1.96	42.11			115.38 -5.08	-1.92
1970	1.85	6.45			47.83 -23.60	-19.57
1971	77.08	41.18			34.43 -20.39	-11.25
1972	22.67	58.82			-8.82 -17.70	-16.13
1973	-44.44	-1.75			-27.61 -24.22	8.62
1974	-46.48	-12.50			-62.56 -51.53	-17.82
1975	-16.96	0.00			-36.25 -54.71	-33.08
1976	16.54	23.68			-5.00 -20.83	-4.81
1977	-8.88	37.50			9.52 -18.82	-24.32
1978	-19.02	27.63			18.33 6.77	-13.62
1979	-11.93	31.58			22.15 36.84	-0.28
1980	-27.19	19.59			-54.10 -23.33	-40.35
1981	-21.25	20.56			-18.51 -36.91	-33.51
1982	21.95	71.79			72.85 -7.45	-35.29
1983	5.16	26.36			26.67 -28.20	-4.69
1984	0.56	19.19			37.29 -6.68	-13.12
1985	35.57	53.16			126.51 -32.62	-35.91
1986	1.83	70.89			69.80 -47.67	-27.41

NPRD - Nominal rate of protection due to  
direct price interventions

Appendix Table A3.2 cont'd

	Using Free Trade Equilibrium Exchange Rate					Using Free Trade Exchange Rate				
	Rice	Corn	Sugar		Copra	Rice	Corn	Sugar		Copra
			ISA	XUP				ISA	XUP	
1960	2.73	69.00	67.18	-22.38	-6.43	2.73	69.00	67.18	-22.38	-6.43
1961	65.04	90.38	165.50	-2.65	9.52	67.70	93.45	169.78	-1.08	11.29
1962	-25.01	-11.26	29.54	-38.05	-25.00	-25.67	-12.04	28.41	-38.59	-25.66
1963	-17.99	1.05	-45.33	-24.13	-22.70	-21.52	-3.30	-47.68	-27.39	-26.02
1964	2.67	1.85	-34.45	-33.02	-29.53	0.90	0.10	-35.57	-34.17	-30.74
1965	8.69	30.10	73.21	-37.35	-17.86	6.16	27.07	69.19	-38.80	-19.77
1966	14.79	33.93	164.03	-27.99	-23.84	11.83	30.47	157.21	-29.85	-25.81
1967	-5.14	12.98	142.53	-29.45	-23.79	-4.54	13.69	144.06	-29.00	-23.31
1968	-19.02	37.62	133.23	-36.75	-24.71	-16.14	42.51	141.51	-34.51	-22.04
1969	-19.05	12.83	71.01	-24.64	-22.13	-16.17	16.83	77.08	-21.96	-19.36
1970	-15.93	-12.13	22.02	-36.93	-33.61	-15.34	-11.51	22.88	-36.49	-33.14
1971	47.68	17.74	12.11	-33.61	-25.99	47.88	17.89	12.26	-33.52	-25.89
1972	3.05	33.42	-23.41	-30.86	-29.54	2.92	33.25	-23.50	-30.95	-29.63
1973	-50.78	-12.96	-35.87	-32.86	-3.76	-52.76	-16.46	-38.45	-35.56	-7.64
1974	-55.41	-27.10	-68.81	-59.62	-31.53	-54.92	-26.28	-68.46	-59.17	-30.77
1975	-34.56	-21.20	-49.76	-64.31	-47.26	-31.59	-17.61	-47.48	-62.69	-44.86
1976	-10.25	-4.74	-26.83	-39.03	-26.68	-5.76	0.02	-23.18	-35.98	-23.02
1977	-29.17	6.88	-14.87	-36.90	-41.18	-26.86	10.36	-12.09	-34.85	-39.26
1978	-38.28	-2.73	-9.81	-18.63	-34.16	-35.97	0.93	-6.43	-15.57	-31.69
1979	-33.75	-1.02	-8.11	2.94	-24.98	-31.15	2.87	-4.51	6.98	-22.04
1980	-44.93	-9.55	-65.29	-42.02	-54.89	-42.74	-5.95	-63.91	-39.71	-53.09
1981	-40.12	-8.33	-38.04	-52.03	-49.44	-37.54	-4.38	-35.36	-49.96	-47.26
1982	-8.88	28.36	29.15	-30.85	-51.65	-3.21	36.35	37.18	-26.55	-48.65
1983	-19.86	-3.71	12.94	-35.98	-27.37	-15.70	1.29	18.80	-32.66	-23.60
1984	-21.52	-6.98	11.64	-24.12	-32.20	-19.34	-4.39	14.74	-22.01	-30.31
1985	11.19	25.62	85.78	-44.73	-47.43	11.39	25.84	86.10	-44.64	-47.34
1986	-12.72	46.47	45.54	-55.15	-37.78	-14.87	42.86	41.95	-56.26	-39.31

NPRST - Nominal rate of protection due to short run total price interventions

Appendix Table A3.2 cont'd

	Using Free Trade Equilibrium Exchange Rate					Using Free Trade Exchange Rate				
	Rice	Corn	Sugar		Copra	Rice	Corn	Sugar		Copra
			ISA	XUP				ISA	XUP	
1960	-3.28	59.12	57.41	-26.92	-11.90	-3.28	59.12	57.41	-26.92	-11.90
1961	57.86	82.10	153.96	-6.88	4.76	59.80	84.34	157.08	-5.74	6.05
1962	-28.55	-15.45	23.43	-40.97	-28.54	-29.02	-16.01	22.62	-41.36	-29.01
1963	-22.42	-4.41	-48.28	-28.22	-26.87	-24.96	-7.55	-49.97	-30.57	-29.26
1964	-1.93	-2.71	-37.38	-36.02	-32.69	-3.22	-3.99	-38.21	-36.86	-33.57
1965	3.24	23.57	64.53	-40.49	-21.98	1.38	21.35	61.57	-41.56	-23.38
1966	9.19	27.39	151.13	-31.51	-27.56	7.01	24.85	146.13	-32.87	-29.00
1967	-9.56	7.72	131.24	-32.73	-27.34	-9.14	8.22	132.31	-32.42	-27.00
1968	-22.05	32.46	124.49	-39.12	-27.53	-20.10	35.77	130.09	-37.60	-25.72
1969	-22.06	8.63	64.64	-27.44	-25.03	-20.13	11.32	68.72	-25.65	-23.17
1970	-19.97	-16.36	16.15	-39.97	-36.80	-19.59	-15.96	16.70	-39.68	-36.50
1971	40.58	12.07	6.71	-36.80	-29.55	40.71	12.17	6.81	-36.74	-29.48
1972	-1.88	27.04	-27.07	-34.17	-32.91	-1.96	26.94	-27.12	-34.22	-32.96
1973	-54.13	-18.87	-40.23	-37.42	-10.31	-55.30	-20.96	-41.76	-39.03	-12.61
1974	-57.41	-30.37	-70.20	-61.43	-34.60	-57.11	-29.88	-69.99	-61.16	-34.14
1975	-36.89	-24.00	-51.54	-65.58	-49.14	-35.04	-21.78	-50.13	-64.58	-47.65
1976	-13.84	-8.55	-29.76	-41.47	-29.62	-11.00	-5.54	-27.45	-39.54	-27.30
1977	-32.95	1.17	-19.42	-40.27	-44.32	-31.51	3.35	-17.68	-38.99	-43.12
1978	-41.90	-8.43	-15.10	-23.40	-38.02	-40.44	-6.13	-12.97	-21.48	-36.47
1979	-37.88	-7.19	-13.84	-3.48	-29.66	-36.25	-4.75	-11.58	-0.94	-27.81
1980	-48.16	-14.85	-67.32	-45.41	-57.53	-46.78	-12.59	-66.45	-43.96	-56.40
1981	-43.22	-13.08	-41.24	-54.52	-52.06	-41.56	-10.53	-39.52	-53.18	-50.66
1982	-12.61	23.11	23.87	-33.67	-53.63	-8.90	28.33	29.12	-30.86	-51.67
1983	-23.22	-7.74	8.21	-38.66	-30.42	-20.51	-4.49	12.02	-36.50	-27.96
1984	-26.08	-12.39	5.15	-28.52	-36.14	-24.72	-10.77	7.10	-27.20	-34.96
1985	4.66	18.24	74.86	-47.98	-50.52	4.78	18.37	75.06	-47.92	-50.46
1986	-18.34	37.03	36.16	-58.04	-41.79	-19.71	34.74	33.88	-58.74	-42.76

NPRLT - Nominal rate of protection due to long run total price interventions

Appendix Table A3.3  
Nominal Rates of Protection  
at the Retail Level (in %)

	Rice	Corn	N F	R D	Sugar ISA XUP	Copra
1960	26.47	123.08			66.67 -21.05	2.56
1961	104.35	150.00			166.67 0.00	18.75
1962	-10.20	3.45			39.29 -32.76	-2.04
1963	-7.14	15.62			-48.89 -29.23	-3.57
1964	20.75	17.65			-24.24 -21.88	-5.00
1965	27.08	55.17			86.96 -33.85	3.13
1966	31.58	51.52			178.95 -25.35	-12.12
1967	15.07	39.39			155.00 -27.14	-7.46
1968	1.39	70.37			150.00 -32.10	0.00
1969	1.35	39.39			94.29 -11.69	0.00
1970	1.27	6.38			31.58 -32.43	-18.64
1971	77.05	42.11			0.00 -40.63	-14.56
1972	22.34	57.69			-22.46 -30.52	-16.25
1973	-44.49	-1.09			-40.78 -38.37	22.82
1974	-46.49	-12.58			-80.31 -74.56	2.83
1975	-16.67	0.00			-65.71 -75.65	-11.98
1976	16.67	22.69			-31.16 -42.44	25.37
1977	-8.70	37.93			8.50 -19.42	8.02
1978	-18.92	28.00			19.86 8.70	11.36
1979	-11.94	31.50			-37.50 -29.88	-11.35
1980	-27.22	19.76			-59.00 -31.55	-12.63
1981	-21.30	20.54			-33.43 -48.58	-4.08
1982	22.50	72.79			70.29 -8.87	-22.18
1983	5.14	25.77			49.34 -15.46	-1.40
1984	0.64	18.92			62.69 10.60	-11.50
1985	35.73	53.48			281.58 13.28	-34.20
1986	1.89	70.70			147.43 -23.94	-22.77

NPRD - Nominal rate of protection due to  
direct price interventions

Appendix Table A3.3 cont'd

	N P R S T					N P R S T				
	Using Free Trade Equilibrium Exchange Rate					Using Free Trade Exchange Rate				
	Rice	Corn	Sugar		Copra	Rice	Corn	Sugar		Copra
		ISA	XUP				ISA	XUP		
1960	0.58	77.41	50.93	-28.51	-7.12	0.58	77.41	50.93	-28.51	-7.12
1961	63.81	100.40	143.38	-8.73	8.38	66.45	103.63	147.30	-7.26	10.13
1962	-24.74	-13.30	7.28	-48.21	-24.55	-25.40	-14.06	6.35	-48.66	-25.20
1963	-18.41	1.59	-59.57	-44.02	-23.72	-21.92	-2.78	-61.31	-46.43	-27.00
1964	3.32	0.66	-41.65	-39.83	-26.83	1.53	-1.08	-42.65	-40.86	-28.08
1965	8.10	31.99	44.87	-48.74	-20.09	5.59	28.92	41.51	-49.93	-21.95
1966	13.28	30.45	140.16	-35.73	-24.34	10.36	27.08	133.96	-37.39	-26.29
1967	-5.00	15.09	110.54	-39.85	-23.60	-4.40	15.81	111.86	-39.47	-23.12
1968	-19.50	35.27	98.49	-46.09	-20.60	-16.64	40.07	105.54	-44.17	-17.78
1969	-19.53	10.67	54.26	-29.88	-20.60	-16.67	14.60	59.74	-27.39	-17.78
1970	-16.41	-12.19	8.61	-44.23	-32.85	-15.82	-11.57	9.38	-43.83	-32.37
1971	47.65	18.51	-16.60	-50.48	-28.75	47.85	18.67	-16.49	-50.42	-28.65
1972	2.77	32.47	-34.87	-41.63	-29.65	2.64	32.30	-34.95	-41.71	-29.73
1973	-50.82	-12.37	-47.53	-45.40	8.81	-52.79	-15.89	-49.64	-47.60	4.44
1974	-55.42	-27.17	-83.59	-78.80	-14.33	-54.92	-26.35	-83.41	-78.57	-13.37
1975	-34.33	-21.20	-72.98	-80.81	-30.64	-31.35	-17.61	-71.75	-79.94	-27.48
1976	-10.15	-5.51	-46.98	-55.67	-3.44	-5.66	-0.79	-44.33	-53.45	1.39
1977	-29.03	7.21	-15.67	-37.36	-16.04	-26.72	10.71	-12.92	-35.32	-13.30
1978	-38.21	-2.45	-8.65	-17.16	-15.13	-35.88	1.22	-5.22	-14.05	-11.94
1979	-33.75	-1.08	-12.10	-1.38	-33.31	-31.15	2.80	-8.65	2.49	-30.70
1980	-44.95	-9.42	-68.99	-48.23	-33.92	-42.76	-5.82	-67.76	-46.17	-31.29
1981	-40.16	-8.35	-49.38	-60.90	-27.07	-37.58	-4.39	-47.20	-59.21	-23.92
1982	-8.47	29.10	27.23	-31.91	-41.85	-2.78	37.14	35.15	-27.67	-38.23
1983	-19.88	-4.16	13.80	-35.58	-24.87	-15.72	0.82	19.71	-32.23	-20.97
1984	-21.46	-7.20	26.96	-13.69	-30.93	-19.28	-4.61	30.50	-11.28	-29.01
1985	11.33	25.89	212.97	-7.09	-46.03	11.52	26.10	213.51	-6.93	-45.94
1986	-12.67	46.31	112.08	-34.80	-33.80	-14.82	42.70	106.85	-36.41	-35.43

NPRST - Nominal rate of protection due to short run total price interventions

Appendix Table A3.3 cont'd

	Using Free Trade Equilibrium Exchange Rate					Using Free Trade Exchange Rate				
	Rice	Corn	Sugar		Copra	Rice	Corn	Sugar		Copra
			ISA	XUP				ISA	XUP	
1960	-5.30	67.04	42.10	-32.69	-12.55	-5.30	67.04	42.10	-32.69	-12.55
1961	56.69	91.69	132.80	-12.70	3.67	58.61	94.04	135.66	-11.63	4.94
1962	-28.29	-17.39	2.22	-50.65	-28.11	-28.77	-17.94	1.55	-50.98	-28.58
1963	-22.82	-3.89	-61.75	-47.04	-27.84	-25.35	-7.04	-63.01	-48.78	-30.20
1964	-1.31	-3.85	-44.26	-42.52	-30.11	-2.61	-5.12	-44.99	-43.28	-31.02
1965	2.68	25.38	37.61	-51.31	-24.10	0.83	23.12	35.13	-52.18	-25.46
1966	7.75	24.08	128.43	-38.87	-28.03	5.61	21.61	123.88	-40.09	-29.47
1967	-9.42	9.73	100.74	-42.65	-27.15	-9.00	10.24	101.66	-42.38	-26.82
1968	-22.52	30.20	91.05	-48.11	-23.58	-20.58	33.45	95.83	-46.81	-21.67
1969	-22.52	6.56	48.52	-32.49	-23.56	-20.61	9.19	52.19	-30.82	-21.66
1970	-20.43	-16.41	3.38	-46.91	-36.08	-20.06	-16.02	3.87	-46.66	-35.77
1971	40.55	12.81	-20.62	-52.87	-32.18	40.68	12.91	-20.54	-52.82	-32.11
1972	-2.14	26.14	-37.98	-44.42	-33.01	-2.22	26.04	-38.03	-44.47	-33.06
1973	-54.16	-18.32	-51.10	-49.11	1.42	-55.34	-20.42	-52.36	-50.42	-1.19
1974	-57.41	-30.43	-84.33	-79.75	-18.16	-57.11	-29.94	-84.22	-79.61	-17.59
1975	-36.66	-24.00	-73.94	-81.49	-33.10	-34.81	-21.78	-73.18	-80.95	-31.15
1976	-13.74	-9.29	-49.10	-57.44	-7.30	-10.90	-6.30	-47.42	-56.04	-4.25
1977	-32.82	1.49	-20.17	-40.71	-20.52	-31.37	3.67	-18.45	-39.43	-18.81
1978	-41.83	-8.17	-14.00	-22.02	-20.11	-40.37	-5.86	-11.85	-20.06	-18.10
1979	-37.89	-7.25	-17.58	-7.53	-37.47	-36.25	-4.81	-15.41	-5.10	-35.83
1980	-48.18	-14.73	-70.81	-51.26	-37.79	-46.80	-12.46	-70.03	-49.96	-36.13
1981	-43.26	-13.09	-52.00	-62.93	-30.84	-41.60	-10.55	-50.60	-61.84	-28.82
1982	-12.21	23.83	22.03	-34.69	-44.23	-8.49	29.08	27.20	-31.93	-41.87
1983	-23.24	-8.17	9.03	-38.28	-28.01	-20.53	-4.94	12.88	-36.10	-25.48
1984	-26.02	-12.59	19.59	-18.70	-34.94	-24.66	-10.97	21.80	-17.20	-33.74
1985	4.78	18.49	194.58	-12.55	-49.20	4.90	18.62	194.92	-12.45	-49.15
1986	-18.29	36.89	98.42	-39.00	-38.07	-19.66	34.59	95.09	-40.03	-39.11

NPRLT - Nominal rate of protection due to long run total price interventions

Appendix Table A4.1  
Short Run and Cumulative Direct and Total Output Effects  
(as Ratio of No-intervention Output): RICE

	Sugar Border Price is XUP				Sugar Border Price is ISA			
	SRD	SRT	CD	CT	SRD	SRT	CD	CT
1961	0.0267	-0.0075	0.0267	-0.0132	0.0267	-0.0164	0.0267	-0.0216
1962	0.1545	0.0720	0.1689	0.0572	0.1545	0.0551	0.1689	0.0366
1963	-0.0203	-0.0285	0.0631	-0.0020	-0.0203	-0.0353	0.0631	-0.0196
1964	-0.0152	-0.0226	-0.0261	-0.0279	-0.0152	-0.0205	-0.0261	-0.0353
1965	0.0280	0.0070	0.0198	-0.0136	0.0280	0.0071	0.0198	-0.0175
1966	0.0376	0.0101	0.0528	-0.0040	0.0376	-0.0009	0.0528	-0.0166
1967	0.0418	0.0167	0.0622	0.0081	0.0418	-0.0025	0.0622	-0.0171
1968	0.0162	-0.0066	0.0388	-0.0077	0.0162	-0.0238	0.0388	-0.0377
1969	-0.0122	-0.0301	-0.0035	-0.0370	-0.0122	-0.0471	-0.0035	-0.0695
1970	-0.0054	-0.0263	-0.0120	-0.0495	-0.0054	-0.0359	-0.0120	-0.0762
1971	-0.0018	-0.0160	-0.0048	-0.0471	-0.0018	-0.0219	-0.0048	-0.0671
1972	0.1190	0.0660	0.1180	0.0324	0.1190	0.0614	0.1180	0.0172
1973	0.0236	0.0006	0.0879	0.0128	0.0236	-0.0002	0.0879	0.0038
1974	-0.0717	-0.0645	-0.0590	-0.0601	-0.0717	-0.0642	-0.0590	-0.0646
1975	-0.0783	-0.0645	-0.1170	-0.0990	-0.0783	-0.0636	-0.1170	-0.1006
1976	-0.0352	-0.0377	-0.0774	-0.0931	-0.0352	-0.0391	-0.0774	-0.0954
1977	0.0228	-0.0089	0.0038	-0.0637	0.0228	-0.0101	0.0038	-0.0660
1978	-0.0275	-0.0377	-0.0152	-0.0761	-0.0275	-0.0399	-0.0152	-0.0795
1979	-0.0403	-0.0499	-0.0552	-0.0952	-0.0403	-0.0508	-0.0552	-0.0978
1980	-0.0266	-0.0470	-0.0483	-0.1021	-0.0266	-0.0459	-0.0483	-0.1024
1981	-0.0574	-0.0559	-0.0717	-0.1139	-0.0574	-0.0536	-0.0717	-0.1119
1982	-0.0463	-0.0484	-0.0773	-0.1127	-0.0463	-0.0498	-0.0773	-0.1130
1983	0.0156	-0.0149	-0.0094	-0.0800	0.0156	-0.0209	-0.0094	-0.0860
1984	0.0022	-0.0232	0.0106	-0.0695	0.0022	-0.0281	0.0106	-0.0774
1985	-0.0047	-0.0266	-0.0035	-0.0681	-0.0047	-0.0302	-0.0035	-0.0758
1986	0.0427	0.0145	0.0401	-0.0287	0.0427	0.0014	0.0401	-0.0451

NOTES:

SRD - Short run direct

SRT - Short run total

CD - Cumulative direct

CT - Cumulative total

Appendix Table A4.2  
Short Run and Cumulative Direct and Total Output Effects  
(as Ratio of No-intervention Output): CORN

	Sugar Border Price is XUP				Sugar Border Price is ISA			
	SRD	SRT	CD	CT	SRD	SRT	CD	CT
1961	0.1831	0.1132	0.1831	0.0965	0.1831	0.1132	0.1831	0.0965
1962	0.2127	0.1389	0.3061	0.2572	0.2127	0.1389	0.3061	0.2572
1963	0.0116	-0.0183	0.1677	-0.0510	0.0116	-0.0183	0.1677	-0.0510
1964	0.0260	0.0007	0.1115	-0.0156	0.0260	0.0007	0.1115	-0.0156
1965	0.0259	-0.0033	0.0827	-0.0229	0.0259	-0.0033	0.0827	-0.0229
1966	0.0839	0.0446	0.1261	0.0714	0.0839	0.0446	0.1261	0.0714
1967	0.0843	0.0488	0.1486	0.0767	0.0843	0.0488	0.1486	0.0767
1968	0.0570	0.0179	0.1328	0.0203	0.0570	0.0179	0.1328	0.0203
1969	0.1202	0.0621	0.1880	0.1064	0.1202	0.0621	0.1880	0.1064
1970	0.0692	0.0211	0.1650	0.0294	0.0692	0.0211	0.1650	0.0294
1971	0.0056	-0.0236	0.0898	-0.0613	0.0056	-0.0236	0.0898	-0.0613
1972	0.0507	0.0152	0.0965	0.0118	0.0507	0.0152	0.0965	0.0118
1973	0.0905	0.0484	0.1397	0.0791	0.0905	0.0484	0.1397	0.0791
1974	0.0073	-0.0123	0.0785	-0.0466	0.0073	-0.0123	0.0785	-0.0466
1975	-0.0783	-0.0404	0.0240	-0.0930	-0.0161	-0.0404	0.0240	-0.0930
1976	-0.0352	-0.0374	0.0090	-0.0865	-0.0032	-0.0374	0.0090	-0.0865
1977	0.0356	-0.0117	0.0402	-0.0371	0.0356	-0.0117	0.0402	-0.0371
1978	0.0603	0.0093	0.0808	-0.0011	0.0603	0.0093	0.0808	-0.0011
1979	0.0476	-0.0042	0.0889	-0.0256	0.0476	-0.0042	0.0889	-0.0256
1980	0.0557	0.0001	0.1010	-0.0205	0.0557	0.0001	0.1010	-0.0205
1981	0.0307	-0.0187	0.0822	-0.0551	0.0307	-0.0187	0.0822	-0.0551
1982	0.0324	-0.0151	0.0743	-0.0479	0.0324	-0.0151	0.0743	-0.0479
1983	0.1086	0.0380	0.1465	0.0615	0.1086	0.0380	0.1465	0.0615
1984	0.0413	-0.0081	0.1160	-0.0301	0.0413	-0.0081	0.1160	-0.0301
1985	0.0289	-0.0137	0.0880	-0.0449	0.0289	-0.0137	0.0880	-0.0449
1986	0.0739	0.0317	0.1188	0.0383	0.0739	0.0317	0.1188	0.0383

NOTES:

SRD - Short run direct  
SRT - Short run total

CD - Cumulative direct  
CT - Cumulative total

Appendix Table A4.3  
Short Run and Cumulative Direct and Total Output Effects  
(as Ratio of No-intervention Output): SUGAR

	Border Price is KUP				Border Price is ISA			
	SRD	SRT	CD	CT	SRD	SRT	CD	CT
1961	-0.0199	-0.0239	-0.0199	-0.0269	0.2626	-0.0280	0.2626	0.1814
1962	-0.0092	-0.0128	-0.0213	-0.0340	0.5963	-0.0134	0.2708	0.4875
1963	0.0378	0.0393	-0.0158	-0.0255	0.2225	0.0393	0.3963	0.2807
1964	0.0000	0.0060	0.0000	0.0088	-0.0366	-0.0366	0.2431	0.1248
1965	-0.0005	0.0028	-0.0005	0.0028	-0.0519	-0.1083	0.0440	-0.0713
1966	-0.0139	-0.0105	-0.0139	-0.0071	0.3955	0.2359	0.3955	0.2114
1967	0.0099	0.0099	0.0099	0.0099	0.6671	0.5321	0.6671	0.4915
1968	0.0126	0.0126	0.0126	0.0126	0.6280	0.4678	0.6280	0.4300
1969	-0.0390	-0.0474	-0.0390	-0.0551	-0.0552	-0.0552	0.8018	0.4697
1970	0.0200	0.0227	0.0195	0.0227	0.0255	0.0255	1.0264	0.6326
1971	0.0463	0.0436	0.0463	0.0436	0.1577	0.0779	0.7775	0.4207
1972	-0.0759	-0.1148	-0.0759	-0.1229	0.1001	0.0351	0.7247	0.3699
1973	-0.0653	-0.0877	-0.0653	-0.1100	-0.0359	-0.0889	0.7158	0.3547
1974	-0.0745	-0.1008	-0.0745	-0.1123	-0.0876	-0.1106	0.5435	0.2129
1975	-0.0922	-0.0898	-0.1618	-0.1867	-0.0991	-0.0991	0.5203	0.1864
1976	-0.1413	-0.1372	-0.1743	-0.2042	-0.1124	-0.1461	0.3738	0.0614
1977	-0.0721	-0.1229	-0.0721	-0.1284	-0.0199	-0.0838	0.1210	-0.0925
1978	-0.0624	-0.1143	-0.0624	-0.1228	0.0321	-0.0426	0.0321	-0.0543
1979	0.0233	-0.0544	0.0233	-0.0662	0.0592	-0.0251	0.0592	-0.0401
1980	0.1186	0.0158	0.1186	-0.0023	0.0697	-0.0201	0.0697	-0.0381
1981	-0.0703	-0.1259	-0.0703	-0.1346	-0.1713	-0.2009	0.0078	-0.2063
1982	-0.1172	-0.1598	-0.1172	-0.1685	-0.0585	-0.1142	-0.0420	-0.1229
1983	-0.0287	-0.0978	-0.0287	-0.1064	0.2321	0.0978	0.2321	0.0826
1984	-0.0939	-0.1123	-0.0939	-0.1210	0.0854	0.0475	0.0854	0.0322
1985	-0.0235	-0.0721	-0.0235	-0.0871	0.1199	0.0452	0.1199	0.0237
1986	-0.1129	-0.1457	-0.1129	-0.1537	0.4087	0.2814	0.4087	0.2473

NOTES:

SRD - Short run direct  
SRT - Short run total

CD - Cumulative direct  
CT - Cumulative total

Appendix Table A4.4  
Cumulative Output Effects: COCONUT  
(as Ratio of No-intervention Output)

	Direct	Total
1968	-0.0458	-0.0458
1969	-0.1426	-0.0791
1970	-0.1248	-0.0677
1971	-0.1242	-0.0743
1972	-0.1485	-0.0987
1973	-0.1948	-0.1370
1974	-0.2166	-0.1526
1975	-0.2128	-0.1456
1976	-0.2130	-0.1404
1977	-0.2031	-0.1295
1978	-0.2346	-0.1568
1979	-0.2779	-0.1948
1980	-0.2654	-0.1794
1981	-0.2495	-0.1543
1982	-0.2189	-0.1247
1983	-0.2501	-0.1415
1984	-0.2041	-0.1096
1985	-0.1977	-0.0996
1986	-0.2050	-0.0937

Appendix Table A4.5  
Short Run Consumption Effects  
(as Ratio of No-intervention Consumption)

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Sugar Border Price is XUP

	D I R E C T				T O T A L			
	Rice	Corn	Sugar	Copra	Rice	Corn	Sugar	Copra
1960	-0.1700	0.0585	0.0878	-0.0833	-0.0497	0.0154	0.1156	0.1062
1961	-0.4594	0.3446	0.0286	-0.3567	-0.2853	0.2334	0.0541	-0.1549
1962	0.0500	0.0152	0.1259	0.0017	0.1112	0.0492	0.1920	0.4523
1963	0.0257	0.0173	0.1105	0.0441	0.0735	0.0612	0.1771	0.4359
1964	-0.0749	0.1476	0.0957	0.0849	-0.0003	0.1701	0.1725	0.5117
1965	-0.1135	0.1455	0.1387	-0.0937	-0.0330	0.1653	0.2041	0.3571
1966	-0.1394	0.2015	0.1171	0.2300	-0.0572	0.1800	0.1595	0.4578
1967	-0.0685	0.1150	0.1147	0.1183	0.0176	0.1089	0.1678	0.4467
1968	-0.0394	0.0061	0.1227	-0.0409	0.0573	0.0180	0.1821	0.3693
1969	-0.0268	-0.0053	0.0462	-0.0158	0.0668	0.0082	0.1207	0.3891
1970	0.0018	0.1169	0.1361	0.3556	0.0738	0.1101	0.1845	0.6241
1971	-0.2768	0.4771	0.1972	0.2906	-0.1620	0.4079	0.2293	0.5580
1972	-0.1088	0.1687	0.1379	0.2997	-0.0245	0.1566	0.1816	0.5690
1973	0.1806	-0.2200	0.1118	-0.5388	0.2103	-0.1915	0.1444	-0.2616
1974	0.2088	-0.0907	0.2666	-0.1688	0.2448	-0.0664	0.2893	0.1738
1975	0.0948	0.0923	0.2922	0.1515	0.1631	0.0898	0.3174	0.5319
1976	-0.0414	0.0709	0.1496	-0.5614	0.0681	0.0682	0.2116	-0.0089
1977	0.0151	-0.0661	0.0632	-0.1940	0.1063	-0.0360	0.1402	0.2735
1978	0.0424	-0.1699	-0.0498	-0.2264	0.1330	-0.1146	0.0595	0.2732
1979	0.0287	0.0021	0.1174	0.1853	0.1022	-0.0714	0.0124	0.6661
1980	0.0883	-0.0550	0.1205	0.2188	0.1713	-0.0292	0.1884	0.6271
1981	0.0805	-0.0204	0.1816	0.0148	0.1638	-0.0012	0.2353	0.4691
1982	-0.1386	0.1377	0.0582	0.4494	0.0045	0.1204	0.1476	0.8250
1983	-0.0291	0.0345	0.0598	0.0034	0.0800	0.0441	0.1465	0.4656
1984	-0.0288	0.0013	-0.0341	0.2399	0.0709	0.0181	0.0659	0.6151

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Appendix Table A4.5

(cont'd)

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Sugar Border Price is ISA

	D I R E C T				T O T A L			
	Rice	Corn	Sugar	Copra	Rice	Corn	Sugar	Copra
1960	-0.2189	-0.1066	-0.2482	0.0213	-0.0941	-0.1347	-0.1900	0.2013
1961	-0.5518	0.0315	-0.6087	-0.1573	-0.3697	-0.0518	-0.5265	0.0257
1962	0.0105	-0.1196	-0.1479	0.0892	0.0806	-0.0540	-0.0183	0.5174
1963	0.0369	0.0549	0.1872	0.0209	0.0823	0.0912	0.2381	0.4167
1964	-0.0738	0.1513	0.1033	0.0824	0.0008	0.1739	0.1800	0.5093
1965	-0.1807	-0.0815	-0.3235	0.0501	-0.0852	-0.0110	-0.1550	0.4686
1966	-0.2523	-0.1811	-0.6614	0.4735	-0.1548	-0.1501	-0.5125	0.6673
1967	-0.1683	-0.2257	-0.5773	0.3395	-0.0654	-0.1739	-0.4067	0.6297
1968	-0.1393	-0.3347	-0.5695	0.1800	-0.0219	-0.2517	-0.3661	0.5434
1969	-0.0856	-0.2042	-0.3587	0.1101	0.0201	-0.1495	-0.2004	0.4885
1970	-0.0337	-0.0031	-0.1083	0.4317	0.0443	0.0107	-0.0181	0.6869
1971	-0.2996	0.4001	0.0404	0.3390	-0.1804	0.3460	0.1031	0.5970
1972	-0.1138	0.1518	0.1035	0.3104	-0.0284	0.1434	0.1549	0.5773
1973	0.1823	-0.2143	0.1233	-0.5424	0.2120	-0.1858	0.1559	-0.2652
1974	0.2116	-0.0813	0.2856	-0.1748	0.2476	-0.0570	0.3084	0.1679
1975	0.0893	0.0735	0.2540	0.1633	0.1587	0.0748	0.2868	0.5414
1976	-0.0476	0.0502	0.1076	-0.5484	0.0631	0.0513	0.1772	0.0017
1977	0.0000	-0.1168	-0.0400	-0.1621	0.0946	-0.0754	0.0599	0.2984
1978	0.0362	-0.1905	-0.0918	-0.2134	0.1285	-0.1296	0.0289	0.2827
1979	0.0332	0.0171	0.1480	0.1758	0.1083	-0.0507	0.0545	0.6531
1980	0.1033	-0.0043	0.2237	0.1868	0.1830	0.0102	0.2687	0.6022
1981	0.0716	-0.0504	0.1205	0.0338	0.1572	-0.0237	0.1895	0.4833
1982	-0.1825	-0.0105	-0.2437	0.5429	-0.0283	0.0097	-0.0779	0.8948
1983	-0.0647	-0.0855	-0.1847	0.0793	0.0522	-0.0498	-0.0446	0.5249
1984	-0.0577	-0.0963	-0.2328	0.3016	0.0481	-0.0588	-0.0907	0.6637

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Appendix Table A4.6  
 Cumulative Consumption Effects  
 (as Ratio of No-intervention Consumption)

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Sugar Border Price is XUP

	D I R E C T				T O T A L			
	Rice	Corn	Sugar	Copra	Rice	Corn	Sugar	Copra
1960	-0.1700	0.0585	0.0878	-0.0833	-0.0220	0.0188	0.1327	0.2236
1961	-0.4594	0.3446	0.0286	-0.3567	-0.2550	0.2241	0.0693	-0.0796
1962	0.0502	0.0153	0.1263	0.0024	0.1249	0.0520	0.2044	0.5099
1963	0.0262	0.0176	0.1118	0.0463	0.0951	0.0585	0.1895	0.5136
1964	-0.0749	0.1476	0.0958	0.0851	0.0175	0.1686	0.1843	0.5686
1965	-0.1135	0.1455	0.1388	-0.0936	-0.0114	0.1615	0.2123	0.4353
1966	-0.1392	0.2016	0.1174	0.2306	-0.0357	0.1773	0.1716	0.5350
1967	-0.0682	0.1151	0.1153	0.1191	0.0354	0.1074	0.1798	0.5038
1968	-0.0393	0.0062	0.1232	-0.0401	0.0711	0.0197	0.1904	0.4277
1969	-0.0268	-0.0053	0.0461	-0.0160	0.0798	0.0090	0.1290	0.4474
1970	0.0018	0.1169	0.1360	0.3553	0.0906	0.1077	0.1959	0.6802
1971	-0.2769	0.4770	0.1969	0.2902	-0.1334	0.3920	0.2398	0.6134
1972	-0.1089	0.1686	0.1377	0.2995	-0.0032	0.1489	0.1891	0.6265
1973	0.1807	-0.2199	0.1119	-0.5387	0.2239	-0.1702	0.1639	-0.1021
1974	0.2088	-0.0907	0.2665	-0.1689	0.2527	-0.0602	0.2950	0.2545
1975	0.0948	0.0923	0.2922	0.1514	0.1747	0.0831	0.3174	0.5720
1976	-0.0415	0.0708	0.1495	-0.5617	0.0828	0.0643	0.2164	0.0708
1977	0.0150	-0.0661	0.0631	-0.1942	0.1245	-0.0288	0.1572	0.3705
1978	0.0423	-0.1699	-0.0499	-0.2266	0.1517	-0.1056	0.0803	0.3690
1979	0.0287	0.0021	0.1173	0.1851	0.1224	-0.0616	0.0401	0.7388
1980	0.0883	-0.0550	0.1205	0.2186	0.1860	-0.0218	0.2013	0.7050
1981	0.0804	-0.0204	0.1816	0.0148	0.1772	0.0035	0.2444	0.5482
1982	-0.1386	0.1377	0.0581	0.4492	0.0227	0.1159	0.1587	0.8611
1983	-0.0291	0.0345	0.0598	0.0033	0.0931	0.0449	0.1549	0.5241
1984	-0.0289	0.0013	-0.0342	0.2398	0.0934	0.0191	0.0857	0.6899

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Appendix Table A4.6 cont'd

Sugar Border Price is ISA								
	D I R E C T				T O T A L			
	Rice	Corn	Sugar	Copra	Rice	Corn	Sugar	Copra
1960	-0.2189	-0.1066	-0.2482	0.0213	-0.0636	-0.1219	-0.1538	0.3128
1961	-0.5518	0.0315	-0.6087	-0.1573	-0.3359	-0.0497	-0.4880	0.0945
1962	0.0104	-0.1197	-0.1481	0.0889	0.0958	-0.0473	0.0027	0.5741
1963	0.0376	0.0553	0.1889	0.0237	0.1035	0.0867	0.2471	0.4962
1964	-0.0736	0.1515	0.1038	0.0833	0.0181	0.1705	0.1882	0.5676
1965	-0.1806	-0.0814	-0.3232	0.0504	-0.0609	-0.0055	-0.1278	0.5408
1966	-0.2522	-0.1810	-0.6611	0.4740	-0.1284	-0.1360	-0.4660	0.7338
1967	-0.1680	-0.2256	-0.5767	0.3404	-0.0438	-0.1623	-0.3683	0.6780
1968	-0.1391	-0.3346	-0.5690	0.1808	-0.0055	-0.2407	-0.3390	0.5953
1969	-0.0842	-0.2033	-0.3551	0.1158	0.0356	-0.1425	-0.1785	0.5466
1970	-0.0318	-0.0020	-0.1035	0.4394	0.0639	0.0145	0.0075	0.7439
1971	-0.2997	0.4001	0.0402	0.3387	-0.1512	0.3319	0.1174	0.6512
1972	-0.1139	0.1518	0.1034	0.3103	-0.0065	0.1377	0.1662	0.6337
1973	0.1824	-0.2143	0.1234	-0.5422	0.2250	-0.1665	0.1716	-0.1044
1974	0.2117	-0.0813	0.2858	-0.1746	0.2550	-0.0527	0.3104	0.2499
1975	0.0893	0.0735	0.2540	0.1634	0.1708	0.0699	0.2908	0.5804
1976	-0.0476	0.0502	0.1075	-0.5486	0.0783	0.0493	0.1859	0.0803
1977	0.0000	-0.1168	-0.0401	-0.1623	0.1128	-0.0683	0.0769	0.3954
1978	0.0362	-0.1906	-0.0919	-0.2136	0.1473	-0.1206	0.0497	0.3785
1979	0.0332	0.0171	0.1479	0.1756	0.1280	-0.0428	0.0783	0.7270
1980	0.1033	-0.0043	0.2237	0.1867	0.1971	0.0157	0.2777	0.6813
1981	0.0715	-0.0504	0.1204	0.0337	0.1711	-0.0172	0.2024	0.5612
1982	-0.1826	-0.0106	-0.2439	0.5427	-0.0091	0.0089	-0.0592	0.9286
1983	-0.0647	-0.0856	-0.1848	0.0792	0.0669	-0.0433	-0.0247	0.5798
1984	-0.0578	-0.0963	-0.2329	0.3014	0.0717	-0.0541	-0.0634	0.7361

Appendix Table A4.7  
Short Run Foreign Exchange Effects  
(as Ratio of Actual Export Earnings)

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Sugar Border Price is XUP

	D I R E C T					T O T A L				
	Rice	Corn	Sugar	Copra	Total	Rice	Corn	Sugar	Copra	Total
1960	-0.4953	0.0096	-0.0107	0.0733	0.5482	-0.2197	0.0088	-0.0149	0.0242	0.2203
1961	-0.0468	-0.0183	-0.0145	-0.0002	0.0504	0.0170	-0.0092	-0.0207	-0.0329	-0.0614
1962	0.0216	0.0006	0.0035	-0.0011	-0.0198	0.0478	0.0077	-0.0010	-0.0082	-0.0647
1963	-0.0283	0.0089	-0.0077	-0.0037	0.0081	0.0083	0.0135	-0.0112	-0.0159	-0.0489
1964	-0.0687	0.0090	-0.0118	0.0058	0.0537	-0.0191	0.0135	-0.0155	-0.0147	-0.0245
1965	-0.0859	0.0078	-0.0138	-0.0108	0.0535	-0.0303	0.0101	-0.0161	-0.0181	-0.0140
1966	-0.0613	0.0017	-0.0078	-0.0058	0.0460	-0.0003	0.0042	-0.0120	-0.0171	-0.0330
1967	-0.0333	-0.0050	-0.0086	0.0022	0.0319	0.0354	-0.0004	-0.0136	-0.0140	-0.0626
1968	-0.0095	-0.0147	-0.0182	0.0008	0.0068	0.0521	-0.0065	-0.0283	-0.0147	-0.0886
1969	0.0048	0.0031	-0.0049	-0.0130	-0.0257	0.0394	0.0077	-0.0073	-0.0190	-0.0735
1970	-0.1010	0.0352	-0.0034	-0.0081	0.0543	-0.0459	0.0355	-0.0062	-0.0129	-0.0087
1971	-0.0907	0.0088	-0.0416	-0.0077	0.0327	-0.0351	0.0108	-0.0613	-0.0121	-0.0491
1972	0.0869	-0.0360	-0.0260	0.0410	-0.0359	0.1119	-0.0279	-0.0351	0.0124	-0.1067
1973	0.1749	-0.0141	-0.0683	0.0125	-0.2166	0.1841	-0.0073	-0.0843	-0.0091	-0.2703
1974	0.0870	0.0176	-0.1315	-0.0053	-0.2413	0.1005	0.0215	-0.1348	-0.0139	-0.2707
1975	0.0021	0.0086	-0.0686	0.0190	-0.0602	0.0347	0.0142	-0.0733	0.0001	-0.1221
1976	0.0028	-0.0110	-0.0188	0.0103	-0.0004	-0.0391	-0.0025	-0.0352	-0.0092	-0.0028
1977	-0.0291	-0.0262	-0.0053	0.0091	0.0592	-0.0627	-0.0136	-0.0193	-0.0067	0.0504
1978	-0.0212	-0.0040	-0.0027	-0.0082	0.0144	-0.0427	-0.0058	-0.0058	-0.0209	0.0217
1979	-0.0363	-0.0108	0.0077	-0.0046	0.0503	-0.0644	-0.0028	-0.0096	-0.0099	0.0477
1980	-0.0482	-0.0053	-0.0290	-0.0003	0.0242	-0.0705	0.0022	-0.0460	-0.0059	0.0164
1981	0.0285	0.0074	-0.0252	-0.0027	-0.0637	-0.0147	0.0107	-0.0397	-0.0039	-0.0396
1982	0.0127	-0.0063	-0.0085	-0.0001	-0.0150	-0.0220	0.0005	-0.0255	-0.0062	-0.0102
1983	0.0092	-0.0041	-0.0078	-0.0062	-0.0192	-0.0258	0.0030	-0.0158	-0.0123	-0.0053
1984	-0.0289	0.0013	-0.0342	0.2398	0.2332	0.0934	0.0191	0.0857	0.6899	0.6631

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Appendix Table A4.7 cont'd

Sugar Border Price is ISA									
	D I R E C T					T O T A L			
	Rice	Corn	Sugar	Copra	Total	Rice	Corn	Sugar	Copra
1960	-0.7088	-0.0158	0.0950	0.0247	0.8442	-0.3218	-0.0187	0.0419	-0.0033
1961	-0.0684	-0.0339	0.0715	-0.0086	0.1652	0.0107	-0.0198	-0.0015	-0.0360
1962	0.0269	0.0038	0.0616	-0.0006	0.0303	0.0541	0.0100	-0.0065	-0.0079
1963	-0.0298	0.0095	-0.0192	-0.0036	-0.0025	0.0090	0.0137	-0.0244	-0.0159
1964	-0.1097	-0.0111	0.0123	-0.0027	0.1303	-0.0446	-0.0007	-0.0051	-0.0178
1965	-0.1606	-0.0285	0.0752	-0.0185	0.2458	-0.0786	-0.0208	0.0433	-0.0230
1966	-0.1351	-0.0375	0.0720	-0.0140	0.2305	-0.0383	-0.0260	0.0478	-0.0213
1967	-0.0980	-0.0483	0.0692	-0.0079	0.2076	0.0010	-0.0305	0.0418	-0.0182
1968	-0.0447	-0.0427	0.0198	-0.0052	0.1020	0.0388	-0.0273	0.0039	-0.0173
1969	-0.0114	-0.0077	0.0097	-0.0149	0.0139	0.0317	-0.0013	0.0048	-0.0201
1970	-0.1125	0.0316	0.0190	-0.0091	0.0907	-0.0525	0.0323	0.0061	-0.0135
1971	-0.0930	0.0075	0.0172	-0.0079	0.0948	-0.0339	0.0104	-0.0038	-0.0122
1972	0.0856	-0.0351	-0.0197	0.0416	-0.0286	0.1128	-0.0269	-0.0377	0.0127
1973	0.1776	-0.0122	-0.0993	0.0131	-0.2517	0.1887	-0.0056	-0.1181	-0.0089
1974	0.0837	0.0142	-0.0904	-0.0056	-0.1940	0.1010	0.0195	-0.0937	-0.0141
1975	-0.0019	0.0067	-0.0421	0.0180	-0.0288	0.0330	0.0118	-0.0586	0.0000
1976	0.0093	-0.0165	-0.0004	0.0082	0.0150	-0.0356	-0.0066	-0.0156	-0.0098
1977	-0.0258	-0.0292	0.0086	0.0084	0.0720	-0.0614	-0.0154	-0.0064	-0.0068
1978	-0.0225	-0.0027	-0.0009	-0.0078	0.0165	-0.0443	-0.0037	-0.0052	-0.0207
1979	-0.0390	-0.0055	-0.0067	-0.0041	0.0339	-0.0655	0.0009	-0.0315	-0.0097
1980	-0.0445	-0.0085	-0.0400	-0.0006	0.0124	-0.0663	-0.0002	-0.0506	-0.0061
1981	0.0458	-0.0037	0.0070	-0.0031	-0.0381	-0.0059	0.0022	-0.0080	-0.0041
1982	0.0220	-0.0191	0.0273	-0.0014	0.0229	-0.0183	-0.0089	0.0102	-0.0067
1983	0.0196	-0.0159	0.0187	-0.0075	0.0075	-0.0217	-0.0059	0.0075	-0.0129
1984	-0.0578	-0.0963	-0.2329	0.3014	0.2226	0.0717	-0.0541	-0.0634	0.7361

Appendix Table A4.8  
 Cumulative Foreign Exchange Effects  
 (as Ratio of Actual Export Earnings)

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Sugar Border Price is XUP

	D I R E C T					T O T A L				
	Rice	Corn	Sugar	Copra	Total	Rice	Corn	Sugar	Copra	Total
1960	-0.4953	0.0096	-0.0107	0.0733	0.5482	-0.1876	0.0091	-0.0175	0.0114	0.1724
1961	-0.0549	-0.0255	-0.0191	-0.0003	0.0610	0.0276	-0.0178	-0.0298	-0.0357	-0.0752
1962	-0.0131	-0.0137	-0.0142	-0.0012	0.0114	0.0428	0.0109	-0.0227	-0.0091	-0.0855
1963	-0.0240	0.0015	-0.0077	-0.0037	0.0111	0.0205	0.0155	-0.0111	-0.0170	-0.0642
1964	-0.0651	0.0043	-0.0118	0.0058	0.0548	-0.0014	0.0153	-0.0160	-0.0169	-0.0469
1965	-0.0896	0.0036	-0.0138	-0.0108	0.0614	-0.0160	0.0071	-0.0160	-0.0201	-0.0273
1966	-0.0705	-0.0047	-0.0079	-0.0059	0.0614	0.0143	0.0021	-0.0129	-0.0185	-0.0478
1967	-0.0436	-0.0107	-0.0087	-0.0151	0.0305	0.0421	-0.0003	-0.0143	-0.0328	-0.0890
1968	-0.0152	-0.0216	-0.0182	-0.0542	-0.0357	0.0644	-0.0109	-0.0318	-0.0447	-0.1300
1969	0.0048	-0.0060	-0.0049	-0.0601	-0.0638	0.0529	0.0064	-0.0081	-0.0440	-0.1123
1970	-0.1011	0.0255	-0.0033	-0.0446	0.0276	-0.0275	0.0404	-0.0069	-0.0344	-0.0542
1971	-0.0908	0.0043	-0.0416	-0.0429	0.0021	-0.0124	0.0113	-0.0654	-0.0350	-0.0993
1972	0.0495	-0.0404	-0.0260	-0.0114	-0.0465	0.1119	-0.0277	-0.0428	-0.0303	-0.1572
1973	0.1670	-0.0244	-0.0683	-0.0859	-0.2969	0.1877	0.0004	-0.0912	-0.0766	-0.3560
1974	0.1129	0.0096	-0.1924	-0.0627	-0.3777	0.1293	0.0320	-0.2225	-0.0508	-0.4747
1975	0.0186	0.0072	-0.0614	-0.0283	-0.1355	0.0595	0.0202	-0.1010	-0.0295	-0.2103
1976	-0.0054	-0.0110	-0.0188	-0.0625	-0.0650	-0.0668	0.0017	-0.0375	-0.0540	-0.0253
1977	-0.0244	-0.0232	-0.0052	-0.0952	-0.0479	-0.0884	-0.0114	-0.0217	-0.0717	0.0064
1978	-0.0294	-0.0071	-0.0027	-0.1832	-0.1503	-0.0662	-0.0032	-0.0083	-0.1323	-0.0712
1979	-0.0438	-0.0142	0.0077	-0.0903	-0.0246	-0.0878	0.0000	-0.0129	-0.0625	0.0128
1980	-0.0522	-0.0103	-0.0290	-0.0625	-0.0290	-0.0954	0.0062	-0.0489	-0.0408	-0.0005
1981	0.0196	0.0041	-0.0252	-0.0521	-0.1011	-0.0376	0.0133	-0.0422	-0.0291	-0.0471
1982	0.0054	-0.0094	-0.0085	-0.0581	-0.0627	-0.0437	-0.0012	-0.0275	-0.0354	-0.0150
1983	0.0118	-0.0116	-0.0078	-0.0994	-0.1075	-0.0459	0.0054	-0.0179	-0.0579	-0.0352
1984	-0.0259	0.0013	-0.0242	0.2398	0.2302	0.0934	0.0191	0.0957	0.4999	0.6631

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Appendix Table A4.8  
(cont'd)

Sugar Border Price is ISA

	D I R E C T					T O T A L				
	Rice	Corn	Sugar	Copra	Total	Rice	Corn	Sugar	Copra	Total
1960	-0.7088	-0.0158	0.0950	0.0247	0.8442	-0.2733	-0.0167	0.0620	-0.0114	0.3407
1961	-0.0744	-0.0407	0.0442	-0.0086	0.1506	0.0269	-0.0284	0.0556	-0.0385	0.0186
1962	-0.0091	-0.0101	0.1065	-0.0006	0.1251	0.0553	0.0134	0.0731	-0.0089	-0.0045
1963	-0.0250	0.0016	0.0483	-0.0036	0.0681	0.0231	0.0152	0.0182	-0.0170	-0.0371
1964	-0.1067	-0.0164	0.0217	-0.0027	0.1421	-0.0226	0.0019	-0.0021	-0.0196	-0.0011
1965	-0.1663	-0.0321	0.0751	-0.0185	0.2550	-0.0565	-0.0215	0.0372	-0.0244	0.0908
1966	-0.1443	-0.0433	0.0719	-0.0140	0.2455	-0.0170	-0.0271	0.0434	-0.0223	0.0652
1967	-0.1095	-0.0545	0.0691	-0.0252	0.2079	0.0183	-0.0291	0.0385	-0.0366	0.0125
1968	-0.0488	-0.0493	0.0968	-0.0606	0.1343	0.0612	-0.0312	0.0603	-0.0471	-0.0128
1969	-0.0079	-0.0163	0.0850	-0.0622	0.0470	0.0570	-0.0018	0.0604	-0.0451	-0.0398
1970	-0.1118	0.0213	0.0657	-0.0456	0.1106	-0.0291	0.0369	0.0401	-0.0349	-0.0025
1971	-0.0928	0.0034	0.1142	-0.0431	0.1605	-0.0091	0.0103	0.0649	-0.0351	0.0286
1972	0.0513	-0.0395	0.0987	-0.0108	0.0761	0.1160	-0.0271	0.0549	-0.0302	-0.0642
1973	0.1677	-0.0228	0.1546	-0.0854	-0.0757	0.1924	0.0009	0.0516	-0.0765	-0.2191
1974	0.1086	0.0063	0.1477	-0.0631	-0.0304	0.1293	0.0309	0.0466	-0.0509	-0.1507
1975	0.0154	0.0049	0.0636	-0.0293	0.0139	0.0608	0.0195	0.0016	-0.0297	-0.1084
1976	0.0016	-0.0169	0.0171	-0.0645	-0.0321	-0.0662	-0.0029	-0.0179	-0.0545	-0.0073
1977	-0.0200	-0.0313	0.0086	-0.0959	-0.0359	-0.0868	-0.0131	-0.0088	-0.0718	0.0193
1978	-0.0279	-0.0059	-0.0008	-0.1828	-0.1499	-0.0665	-0.0011	-0.0079	-0.1321	-0.0724
1979	-0.0471	-0.0693	-0.0067	-0.0897	-0.0400	-0.0913	0.0035	-0.0370	-0.0625	-0.0814
1980	-0.0504	-0.0136	-0.0064	-0.0629	-0.0052	-0.0947	0.0048	-0.0526	-0.0409	-0.0035
1981	0.0268	-0.0071	0.0086	-0.0525	-0.0735	-0.0303	0.0052	-0.0098	-0.0293	-0.0149
1982	0.0159	-0.0220	0.0273	-0.0595	-0.0261	-0.0395	-0.0102	0.0081	-0.0359	0.0220
1983	0.0218	-0.0229	0.0187	-0.1007	-0.0808	-0.0424	-0.0028	0.0051	-0.0584	-0.0981
1984	-0.0578	-0.0963	-0.2329	0.3014	0.2226	0.0717	-0.0541	-0.0634	0.7361	0.5551

Appendix Table A6.1  
 Nominal Transfers Out of (-) and Into (+) Agriculture  
 (In million pesos at constant 1982 prices)  
 Sugar Border Price is XUP

	OUTPUT PRICE RELATED TRANSFERS											
	Direct Transfers					Total Transfers						
	Rice	Corn	Sugar	Copra	All Products	Rice	Corn	Sugar	Copra	All Products		
				+	-					+	-	
1960	885.47	496.31	-414.61	101.63	1483.41	-414.61	0.00	386.02	-621.91	-304.88	386.02	-926.79
1961	2274.59	617.60	214.27	552.30	3658.76	0.00	1642.76	505.31	-107.13	220.92	2368.99	-107.13
1962	-490.57	54.02	-973.69	-115.15	54.02	-1579.41	-1349.07	-162.07	-2380.14	-1496.92	0.00	-5388.20
1963	-335.97	150.82	-214.30	-104.83	150.82	-655.10	-1119.89	0.00	-1607.25	-1362.78	0.00	-4089.92
1964	860.75	195.56	-599.96	-381.31	1056.31	-981.27	215.19	48.89	-1899.88	-1715.88	264.08	-3615.76
1965	1063.09	436.49	-785.02	271.97	1771.55	-785.02	318.93	291.00	-1918.93	-1087.88	609.93	-3006.81
1966	1326.93	490.16	-772.17	-551.50	1817.09	-1323.67	612.43	343.11	-1458.54	-1286.84	955.54	-2745.38
1967	710.61	348.85	-676.92	-351.93	1059.46	-1028.85	-304.55	149.51	-1692.31	-1319.75	149.51	-3316.61
1968	100.63	563.07	-974.78	-240.30	663.70	-1215.08	-1207.60	307.13	-2193.25	-1441.77	307.13	-4842.62
1969	105.88	437.01	-265.30	-78.45	542.89	-343.75	-1270.54	163.88	-1591.83	-1176.75	163.88	-4039.12
1970	103.30	102.61	-1802.79	-1301.72	205.91	-3104.51	-1136.28	-205.21	-3348.03	-2748.07	0.00	-7437.59
1971	3358.39	692.52	-1509.56	-604.14	4050.91	-2113.70	2450.72	395.73	-2947.23	-1678.17	2846.45	-4625.40
1972	1279.66	819.50	-1494.37	-639.41	2099.16	-2133.78	150.55	532.68	-3138.17	-1406.70	683.23	-4544.87
1973	-5155.10	-37.34	-2227.73	542.13	542.13	-7420.17	-6627.99	-298.75	-3449.39	-271.07	0.00	-10647.20
1974	-6153.66	-435.95	-9321.04	-2036.83	0.00	-17947.48	-8790.94	-1140.17	-12927.40	-4364.63	0.00	-27223.14
1975	-1502.16	0.00	-13792.90	-1881.11	0.00	-17176.17	-3884.89	-914.99	-20573.45	-3412.24	0.00	-28785.57
1976	1043.45	580.36	-2409.84	-235.75	1623.81	-2645.59	-844.70	-161.21	-5837.18	-1744.51	0.00	-8587.60
1977	-718.91	813.87	-1402.85	-2193.03	813.87	-4314.79	-3019.42	180.86	-3550.96	-4775.93	180.86	-11346.31
1978	-1599.85	618.68	341.64	-1465.44	960.32	-3065.29	-4205.32	-58.92	-1214.72	-4800.59	0.00	-10279.55
1979	-866.88	631.40	1595.00	-46.85	2226.40	-913.73	-3261.13	-26.31	162.76	-5528.62	162.76	-8816.06
1980	-2241.47	434.00	-1800.10	-3866.28	434.00	-7907.85	-4916.78	-274.10	-4285.94	-6976.11	0.00	-16452.93
1981	-1745.10	467.03	-3619.15	-2401.86	467.03	-7766.11	-4311.43	-254.74	-6725.14	-4653.61	0.00	-15944.92
1982	1177.75	1095.85	-512.10	-2082.96	2273.60	190.64	-621.59	587.06	-2828.73	-4071.24	587.06	-7521.56
1983	316.49	512.54	-1181.69	-314.74	829.03	-1496.43	-1611.24	-106.04	-3502.10	-2421.08	0.00	-7640.46
1984	39.57	469.99	-138.97	-1955.48	509.56	-2094.45	-1938.96	-222.63	-1551.82	-6143.15	0.00	-9856.56
1985	2210.89	1151.13	-1609.52	-2719.71	3362.02	-4329.23	851.74	683.84	-2697.28	-4380.00	1535.58	-7077.28
1986	130.11	1336.41	-2542.42	-1184.55	1466.52	-3726.97	-1059.44	1026.18	-3434.61	-1904.89	1026.18	-6398.94

Appendix Table A6.1 cont'd

	Fertilizers				Four-wheeled Tractors				Credit				All Inputs			
	Direct		Total		Direct		Total		Direct		Total		Direct		Total	
	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
1960	4.91	-92.60	33.72	-48.46									4.91	-92.60	33.72	-48.46
1961	9.60	-118.67	55.22	-62.96									9.60	-118.67	55.22	-62.96
1962	24.20	-140.36	73.73	-70.76									24.20	-140.36	73.73	-70.76
1963	8.41	-83.33	21.88	-59.91									8.41	-83.33	21.88	-59.91
1964	10.26	-144.18	31.78	-79.32									10.26	-144.18	31.78	-79.32
1965	0.00	-187.15	0.00	-100.06	-54.99	-51.66							0.00	-242.14	0.00	-151.72
1966	0.00	-136.38	7.05	-99.89	-49.62	-45.54							0.00	-186.00	7.05	-145.43
1967	0.00	-337.69	0.00	-244.15	-87.81	-70.66							0.00	-425.50	0.00	-314.81
1968	0.00	-370.68	0.00	-248.60	-83.81	-59.71							0.00	-454.49	0.00	-308.31
1969	0.00	-324.23	0.00	-175.10	-61.50	-40.77							0.00	-385.73	0.00	-215.87
1970	10.34	-85.74	86.42	0.00	-44.38	-26.59							10.34	-130.12	86.42	-26.59
1971	82.09	-70.72	247.49	-45.75	-46.53	-23.18							82.09	-117.25	247.49	-68.93
1972	51.07	-50.54	205.06	-31.55	-78.89	-58.07							51.07	-129.43	205.06	-89.62
1973	92.96	-146.23	169.92	-68.86	-107.31	-92.67	103.05	108.64					196.01	-253.54	278.56	-161.53
1974	246.49	-246.27	565.15	-42.02	-106.92	-82.40	235.67	243.21					482.16	-353.19	808.36	-124.42
1975	342.34	-129.97	898.53	-59.23	-290.83	-253.78	174.51	177.11					516.85	-420.80	1075.64	-313.01
1976	0.00	-670.14	1.03	-408.42	-199.06	-188.36	442.86	446.17					442.86	-869.20	447.20	-596.78
1977	0.00	-501.62	41.66	-257.57	-157.34	-125.65	127.00	130.02					127.00	-658.96	171.68	-383.22
1978	7.08	-396.71	113.56	-119.04	-188.74	-163.93	103.56	106.65					110.64	-585.45	220.21	-282.97
1979	0.00	-452.38	63.57	-84.39	-107.22	-65.54	78.26	81.62					78.26	-559.60	145.19	-149.93
1980	100.43	-119.38	513.16	0.00	-65.22	-48.83	817.53	846.99					917.96	-184.60	1360.15	-48.83
1981	0.00	-188.49	345.74	-37.33	-50.72	-29.20	687.09	706.89					687.09	-239.21	1052.63	-66.53
1982	0.00	-647.53	0.00	-188.95	-42.10	-21.75	714.47	720.04					714.47	-689.63	720.04	-210.70
1983	0.00	-633.31	0.00	-256.57	-20.01	-3.11	549.12	559.32					549.12	-653.32	559.32	-259.68
1984	0.00	-350.80	0.00	-37.76	15.35	28.23	321.28	331.50					321.28	-335.45	331.50	-9.53

Appendix Table A6.1 cont'd

	All Products and inputs						Proportion to GVA crops&livestock (%)					
	Direct		net	Total		net	Direct		net	Total		net
+	-	+		-	+		-	+		-	+	
1960	1488.32	-507.21	981.11	419.74	-975.25	-555.51						
1961	3668.36	-118.67	3549.69	2424.21	-170.09	2254.12						
1962	78.22	-1719.77	-1641.55	73.73	-5458.96	-5385.23						
1963	159.23	-738.43	-579.20	21.88	-4149.83	-4127.95						
1964	1066.57	-1125.45	-58.88	295.86	-3695.08	-3399.22						
1965	1771.55	-1027.16	744.39	609.93	-3158.53	-2548.60						
1966	1817.09	-1509.67	307.42	962.59	-2890.81	-1928.22						
1967	1059.46	-1454.35	-394.89	149.51	-3631.42	-3481.91	4.21	-5.78	-1.57	0.59	-14.43	-13.84
1968	663.70	-1669.57	-1005.87	307.13	-5150.93	-4843.80	2.56	-6.43	-3.87	1.18	-19.83	-18.65
1969	542.89	-729.48	-186.59	163.88	-4254.99	-4091.11	2.05	-2.75	-0.70	0.62	-16.06	-15.44
1970	216.25	-3234.63	-3018.38	86.42	-7464.18	-7377.76	0.79	-11.74	-10.96	0.31	-27.10	-26.79
1971	4133.00	-2230.95	1902.05	3093.94	-4694.33	-1600.39	14.10	-7.61	6.49	10.55	-16.01	-5.46
1972	2150.23	-2263.21	-112.98	888.29	-4634.49	-3746.20	6.99	-7.36	-0.37	2.89	-15.07	-12.18
1973	738.14	-7673.71	-6935.57	278.56	-10808.73	-10530.17	2.32	-24.07	-21.76	0.87	-33.91	-33.04
1974	482.16	-18300.67	-17818.51	808.36	-27347.56	-26539.20	1.40	-53.24	-51.84	2.35	-79.56	-77.21
1975	516.85	-17596.97	-17080.12	1075.64	-29098.58	-28022.94	1.39	-47.16	-45.78	2.88	-77.99	-75.10
1976	2066.67	-3514.79	-1448.12	447.20	-9184.38	-8737.18	5.16	-8.78	-3.62	1.12	-22.93	-21.81
1977	940.87	-4973.75	-4032.88	352.54	-11729.53	-11376.99	2.23	-11.78	-9.55	0.84	-27.79	-26.95
1978	1070.96	-3650.74	-2579.78	220.21	-10562.52	-10342.31	2.41	-8.21	-5.80	0.50	-23.76	-23.26
1979	2304.66	-1473.33	831.33	307.95	-8965.99	-8658.04	4.86	-3.11	1.75	0.65	-18.91	-18.26
1980	1351.96	-8092.45	-6740.49	1360.15	-16501.76	-15141.61	2.70	-16.16	-13.46	2.72	-32.96	-30.24
1981	1154.12	-8005.32	-6851.20	1052.63	-16011.45	-14958.82	2.21	-15.30	-13.10	2.01	-30.61	-28.59
1982	2988.07	-498.99	2489.08	1307.10	-7732.26	-6425.16	5.47	-0.91	4.56	2.39	-14.16	-11.77
1983	1378.15	-2149.75	-771.60	559.32	-7900.14	-7340.82	2.61	-4.08	-1.46	1.06	-14.98	-13.92
1984	830.84	-2429.90	-1599.06	331.50	-9866.09	-9534.59	1.51	-4.42	-2.91	0.60	-17.95	-17.35
1985	3585.18	-4752.88	-1167.70	1783.47	-7295.48	-5512.01	6.27	-8.31	-2.04	3.12	-12.75	-9.63
1986	1466.52	-3926.06	-2459.54	1061.87	-6439.95	-5378.08	2.46	-6.58	-4.12	1.78	-10.80	-9.02

Appendix Table A6.1 cont'd

	NON PRICE TRANSFERS (Direct)						Total Non Price Transfers			Total Non Price Transfers		
	Tax Revenues with other Taxes	without other taxes	Infrastructure with rural roads	without rural roads	Research and Agricultural Extension Services	Support Services	+	-	net	+	-	net
1960	-300.2	-55.4	76.2	3.1	325.6	263.3	665.1	-300.2	364.9	592.0	-55.4	536.6
1961	-303.2	-61.8	85.5	3.2	253.4	316.7	655.6	-303.2	352.3	573.2	-61.8	511.5
1962	-264.1	-17.0	76.2	4.8	208.3	226.0	510.6	-264.1	246.4	439.1	-17.0	422.1
1963	-323.3	-17.6	555.3	508.2	248.4	172.3	976.1	-323.3	652.8	928.9	-17.6	911.3
1964	-352.3	-67.3	116.2	59.3	288.7	690.5	1095.4	-352.3	743.1	1038.5	-67.3	971.3
1965	-336.3	-49.1	351.1	280.6	304.3	322.7	978.1	-336.3	641.8	907.6	-49.1	858.5
1966	-372.0	-51.0	175.9	110.9	321.0	372.0	868.9	-372.0	496.9	803.9	-51.0	752.9
1967	-336.8	-55.8	163.2	112.6	291.4	371.7	826.4	-336.8	489.6	775.8	-55.8	720.0
1968	-478.9	-50.6	264.5	167.7	245.7	355.8	866.0	-478.9	387.1	769.2	-50.6	718.6
1969	-376.1	-49.7	470.4	376.1	269.1	422.5	1162.0	-376.1	785.9	1067.7	-49.7	1018.0
1970	-395.3	-51.1	726.7	517.2	243.9	417.3	1387.9	-395.3	992.6	1178.4	-51.1	1127.3
1971	-424.2	-55.5	793.0	717.8	273.5	405.6	1472.1	-424.2	1047.9	1396.9	-55.5	1341.4
1972	-382.2	-43.9	1155.2	1096.4	314.7	413.2	1883.0	-382.2	1500.9	1824.2	-43.9	1780.4
1973	-430.5	-63.7	1668.9	1618.9	364.3	426.2	2459.3	-430.5	2028.8	2409.4	-63.7	2345.7
1974	-411.9	-61.4	1826.3	1796.2	490.4	557.7	2874.5	-411.9	2462.6	2844.3	-61.4	2782.9
1975	-412.1	-60.9	1801.6	1706.3	528.5	694.8	3024.9	-412.1	2612.8	2929.6	-60.9	2868.7
1976	-403.0	-69.5	1922.0	1823.5	656.2	607.1	3185.3	-403.0	2782.3	3086.8	-69.5	3017.3
1977	-538.5	-76.5	2507.6	2418.1	651.5	577.2	3736.3	-538.5	3197.8	3646.8	-76.5	3570.3
1978	-630.8	-83.2	3024.7	2938.4	653.9	673.9	4352.5	-630.8	3721.7	4266.3	-83.2	4183.1
1979	-670.6	-100.8	2947.0	2859.7	615.0	750.2	4312.3	-670.6	3641.7	4225.0	-100.8	4124.1
1980	-594.2	-115.5	2654.7	2576.4	659.4	800.4	4114.5	-594.2	3520.3	4036.2	-115.5	3920.7
1981	-804.4	-124.7	2655.5	2523.2	792.5	953.8	4401.8	-804.4	3597.4	4269.4	-124.7	4144.8
1982	-797.5	-72.6	2330.0	2160.8	731.6	908.7	3970.3	-797.5	3172.8	3801.1	-72.6	3728.5

Appendix Table A6.1 cont'd

	NON PRICE TRANSFERS (Total)							Total Non Price Transfers			Total Non Price Transfers		
	Tax Revenues with other Taxes	without other taxes	Infrastructure with rural roads	without rural roads	Research and Extension	Agric'l. Support Services		+	-	net	+	-	net
1960	-307.6	-56.8	78.1	3.2	333.6	269.7	681.4	-307.6	373.8	606.5	-56.8	549.7	
1961	-303.5	-61.8	85.6	3.2	253.6	317.0	656.1	-303.5	352.6	573.7	-61.8	511.9	
1962	-270.4	-17.4	78.0	4.9	213.2	231.4	522.6	-270.4	252.3	449.5	-17.4	432.1	
1963	-333.8	-18.2	573.4	524.7	256.5	177.9	1007.8	-333.8	674.0	959.1	-18.2	940.9	
1964	-358.9	-68.5	118.4	60.4	294.1	703.4	1115.9	-358.9	757.0	1057.9	-68.5	989.4	
1965	-343.6	-50.2	358.7	286.8	310.9	329.7	999.4	-343.6	655.8	927.4	-50.2	877.2	
1966	-381.0	-52.2	180.1	113.6	328.7	381.0	889.8	-381.0	508.9	823.3	-52.2	771.1	
1967	-343.1	-56.8	166.2	114.7	296.9	378.7	841.7	-343.1	498.7	790.2	-56.8	733.4	
1968	-482.0	-50.9	266.2	168.8	247.3	358.1	871.6	-482.0	389.6	774.2	-50.9	723.3	
1969	-379.4	-50.2	474.4	379.4	271.4	426.2	1172.0	-379.4	792.6	1076.9	-50.2	1026.8	
1970	-404.7	-52.4	744.0	529.5	249.7	427.3	1421.0	-404.7	1016.3	1206.5	-52.4	1154.2	
1971	-430.6	-56.3	804.9	728.6	277.6	411.7	1494.2	-430.6	1063.6	1417.9	-56.3	1361.6	
1972	-390.2	-44.8	1179.5	1119.4	321.3	421.8	1922.5	-390.2	1532.3	1862.5	-44.8	1817.7	
1973	-453.8	-67.1	1759.3	1706.6	384.0	449.3	2592.5	-453.8	2138.7	2539.9	-67.1	2472.8	
1974	-425.1	-63.3	1884.8	1853.7	506.1	575.6	2966.5	-425.1	2541.4	2935.3	-63.3	2872.0	
1975	-418.3	-61.8	1828.4	1731.7	536.4	705.2	3070.0	-418.3	2651.7	2973.3	-61.8	2911.4	
1976	-406.0	-70.0	1936.3	1837.1	661.1	611.6	3209.0	-406.0	2803.0	3109.8	-70.0	3039.8	
1977	-551.3	-78.3	2567.3	2475.7	667.0	590.9	3825.2	-551.3	3273.9	3733.6	-78.3	3655.2	
1978	-649.7	-85.7	3115.1	3026.3	673.4	694.1	4482.6	-649.7	3832.9	4393.8	-85.7	4308.1	
1979	-699.4	-105.1	3073.4	2982.3	641.4	782.4	4497.1	-699.4	3797.8	4406.1	-105.1	4300.9	
1980	-615.6	-119.6	2750.3	2669.2	683.2	829.3	4262.8	-615.6	3647.1	4181.6	-119.6	4062.0	
1981	-827.6	-128.3	2732.1	2595.9	815.3	981.2	4528.6	-827.6	3701.0	4392.5	-128.3	4264.2	
1982	-803.7	-73.1	2348.2	2177.6	737.3	915.8	4001.2	-803.7	3197.5	3830.7	-73.1	3757.6	

Appendix Table A6.1 cont'd

	Proportion to GVA crops&livestock (%)				Proportion to GNP (%)							
	Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other taxes and rural roads)		Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other tax and rural roads)		Total Net Transfer (with other taxes and rural roads)		Total Net Transfers (without other taxes and rural roads)	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total
1960	1346.01	-181.71	1517.71	-5.81					1.38	-0.19	1.56	-0.01
1961	3901.99	2606.72	4061.19	2766.02					3.75	2.50	3.90	2.66
1962	-1395.15	-5132.93	-1219.45	-4953.13					-1.27	-4.65	-1.11	-4.49
1963	73.60	-3453.95	332.10	-3187.05					0.06	-2.91	0.28	-2.69
1964	604.22	-2642.22	912.42	-2409.82					0.56	-2.17	0.75	-1.98
1965	1386.19	-1892.80	1602.89	-1671.40					1.08	-1.48	1.25	-1.31
1966	804.32	-1419.32	1060.32	-1157.12					0.60	-1.05	0.79	-0.86
1967	94.71	-2983.21	325.11	-2748.51	0.38	-11.86	1.29	-10.92	0.07	-2.11	0.23	-1.94
1968	-618.77	-4454.20	-287.27	-4120.50	-2.38	-17.15	-1.11	-15.86	-0.41	-2.98	-0.19	-2.75
1969	599.31	-3298.51	831.41	-3064.31	2.26	-12.45	3.14	-11.56	0.37	-2.05	0.52	-1.91
1970	-2025.78	-6361.46	-1891.08	-6223.56	-7.36	-23.10	-6.87	-22.60	-1.19	-3.75	-1.11	-3.67
1971	2949.95	-536.79	3243.45	-238.79	10.06	-1.83	11.06	-0.81	1.60	-0.29	1.76	-0.13
1972	1387.92	-2213.90	1667.42	-1928.50	4.51	-7.20	5.42	-6.27	0.71	-1.13	0.85	-0.99
1973	-4906.77	-8391.47	-4589.87	-8057.37	-15.39	-26.33	-14.40	-25.28	-2.34	-4.01	-2.19	-3.85
1974	-15355.91	-23997.80	-15035.61	-23667.20	-44.67	-69.82	-43.74	-68.85	-6.90	-10.78	-6.75	-10.63
1975	-14467.32	-25371.24	-14211.42	-25111.54	-38.77	-68.00	-38.09	-67.30	-6.14	-10.76	-6.03	-10.65
1976	1334.18	-5934.18	1569.18	-5697.38	3.33	-14.82	3.92	-14.22	0.53	-2.37	0.63	-2.28
1977	-835.08	-8103.09	-462.58	-7721.79	-1.98	-19.20	-1.10	-18.29	-0.31	-3.03	-0.17	-2.89
1978	1141.92	-6509.41	1603.32	-6034.21	2.57	-14.64	3.61	-13.57	0.40	-2.28	0.56	-2.11
1979	4473.03	-4860.24	4955.43	-4357.14	9.43	-10.25	10.45	-9.19	1.47	-1.59	1.62	-1.43
1980	-3220.19	-11494.51	-2819.79	-11079.61	-6.43	-22.96	-5.63	-22.13	-1.01	-3.61	-0.89	-3.48
1981	-3253.80	-11257.82	-2706.40	-10694.62	-6.22	-21.52	-5.17	-20.44	-0.99	-3.41	-0.82	-3.24
1982	5661.88	-3227.66	6217.58	-2667.56	10.37	-5.91	11.39	-4.89	1.69	-0.96	1.85	-0.80

Appendix Table A6.2  
Real Transfers Out of (-) and Into (+) Agriculture  
(In million pesos at constant 1982 prices)  
Sugar Border Price is XUP

OUTPUT PRICE RELATED TRANSFERS												
	Direct Transfers						Total Transfers					
	Rice	Corn	Sugar	Copra	All Products		Rice	Corn	Sugar	Copra	All Products	
					+	-					+	-
1960	801.34	484.09	-495.04	17.13	1302.56	-495.04	-207.20	356.88	-786.22	-487.45	356.88	-1480.87
1961	2097.70	580.61	-50.39	324.91	3003.22	-50.39	1411.46	458.59	-401.29	-36.41	1870.05	-437.70
1962	-452.50	61.53	-933.04	-79.40	61.53	-1464.94	-1433.68	-179.46	-2478.00	-1585.18	0.00	-5676.32
1963	-310.61	155.88	-187.88	-81.62	155.88	-580.11	-1278.71	-31.54	-1788.43	-1522.88	0.00	-4621.56
1964	816.00	184.89	-647.79	-427.89	1000.89	-1075.68	70.25	14.53	-2072.65	-1886.17	84.78	-3958.82
1965	990.58	420.87	-862.69	186.09	1597.54	-862.69	130.88	251.09	-2134.22	-1330.29	381.97	-3464.51
1966	1260.03	475.33	-851.48	-631.84	1735.36	-1483.32	418.48	300.59	-1681.82	-1514.66	719.07	-3196.48
1967	670.81	340.95	-715.74	-390.10	1011.76	-1105.84	-461.27	118.46	-1845.85	-1469.88	118.46	-3777.00
1968	63.18	557.35	-1010.46	-274.88	620.53	-1285.34	-1296.27	292.81	-2277.32	-1523.55	292.81	-5097.14
1969	75.18	431.11	-294.96	-101.64	506.29	-396.60	-1367.67	145.09	-1685.63	-1250.97	145.09	-4304.27
1970	146.66	114.97	-1743.39	-1249.99	261.63	-2993.38	-1244.82	-235.43	-3494.26	-2877.01	0.00	-7851.52
1971	3206.16	633.76	-1768.26	-791.78	3839.92	-2560.04	2184.86	295.80	-3393.75	-2003.60	2480.66	-5397.35
1972	1210.89	802.53	-1597.23	-687.70	2013.42	-2284.93	-75.76	476.56	-3475.12	-1564.76	476.56	-5115.64
1973	-4880.28	13.09	-2009.78	691.14	704.23	-6890.06	-7009.57	-368.51	-3753.56	-478.38	0.00	-11610.02
1974	-5627.08	-297.22	-8601.58	-1582.12	0.00	-16108.00	-8647.29	-1102.24	-12731.10	-4240.13	0.00	-26720.76
1975	-1276.00	86.91	-13149.23	-1735.90	86.91	-16161.13	-3761.04	-867.41	-20220.97	-3332.71	0.00	-28182.13
1976	996.74	562.22	-2495.48	-272.05	1558.96	-2767.53	-967.00	-208.82	-6060.85	-1840.17	0.00	-9076.84
1977	-721.72	813.12	-1405.44	-2196.16	813.12	-4323.32	-3270.65	113.14	-3782.88	-5056.11	113.14	-12109.64
1978	-1595.81	619.76	344.07	-1460.27	963.83	-3056.08	-4529.06	-144.63	-1408.83	-5214.91	0.00	-11297.43
1979	-819.78	644.36	1623.07	61.58	2329.01	-819.78	-3609.89	-122.24	-45.26	-6330.44	0.00	-10107.83
1980	-2113.73	468.34	-1680.54	-3717.79	468.34	-7512.06	-5134.90	-332.52	-4489.73	-7229.66	0.00	-17186.81
1981	-1635.83	497.25	-3488.70	-2306.48	497.25	-7431.01	-4474.46	-300.02	-6920.40	-4796.08	0.00	-16490.96
1982	1083.29	1068.98	-633.16	-2186.86	2152.27	-2820.02	-804.54	535.09	-3063.49	-4272.72	535.09	-8140.75
1983	293.91	505.38	-1208.92	-339.45	799.29	-1548.37	-1791.17	-163.28	-3718.99	-2617.90	0.00	-8291.34
1984	11.60	460.29	-158.87	-2014.51	471.89	-2173.38	-2263.64	-335.43	-1783.03	-6828.77	0.00	-11210.87
1985	2054.97	1096.81	-1733.30	-2909.69	3151.78	-4642.99	447.89	543.48	-3018.35	-4872.31	991.37	-7890.66
1986	65.62	1319.34	-2590.73	-1223.71	1384.96	-3814.44	-1459.00	920.59	-3734.00	-2147.39	920.59	-7340.39

Appendix Table A6.2 cont'd

	Fertilizers				Four-wheeled Tractors		Credit		All Inputs			
	Direct		Total		Direct	Total	Direct	Total	Direct		Total	
	+	-	+	-					+	-	+	-
1960	7.55	-85.27	42.34	-38.07					7.55	-85.27	42.34	-38.07
1961	20.32	-90.26	73.92	-42.11					20.32	-90.26	73.92	-42.11
1962	23.20	-145.48	79.02	-64.57					23.20	-145.48	79.02	-64.57
1963	8.14	-84.82	24.15	-52.67					8.14	-84.82	24.15	-52.67
1964	11.42	-138.68	35.05	-63.84					11.42	-138.68	35.05	-63.84
1965	0.00	-174.45	0.00	-72.50	-102.67	-107.73			0.00	-277.12	0.00	-180.23
1966	0.00	-129.41	10.04	-85.73	-112.70	-118.75			0.00	-242.11	10.04	-204.48
1967	0.00	-331.04	0.00	-222.54	-261.96	-282.38			0.00	-593.00	0.00	-504.92
1968	0.00	-364.43	0.00	-236.85	-270.81	-296.06			0.00	-635.24	0.00	-532.91
1969	0.00	-319.12	0.00	-162.22	-222.80	-244.76			0.00	-541.92	0.00	-406.98
1970	9.04	-90.99	99.83	0.00	-220.76	-241.71			9.04	-311.75	99.83	-241.71
1971	103.12	-60.50	287.28	-40.38	-277.87	-303.70			103.12	-338.37	287.28	-344.08
1972	56.33	-45.07	231.32	-28.39	-308.32	-333.23			56.33	-353.39	231.32	-361.62
1973	87.16	-169.56	193.66	-56.70	-412.09	-440.63	103.05	108.64	190.21	-581.65	302.30	-497.33
1974	211.15	-315.86	542.65	-43.39	-387.74	-420.02	235.67	243.21	446.82	-703.60	785.86	-463.41
1975	301.84	-143.56	876.95	-60.99	-604.44	-648.07	174.51	177.11	476.35	-748.00	1054.06	-709.06
1976	0.00	-658.70	4.77	-389.12	-277.95	-290.44	442.86	446.17	442.86	-936.65	450.94	-679.56
1977	0.00	-501.09	48.06	-227.65	-395.92	-434.19	127.00	130.02	127.00	-897.01	178.08	-661.84
1978	6.94	-397.36	150.54	-108.12	-379.65	-412.96	103.56	106.65	110.50	-777.01	257.19	-521.08
1979	0.00	-463.88	102.95	-59.71	-377.78	-429.82	78.26	81.62	78.26	-841.66	184.57	-489.53
1980	91.39	-135.93	546.15	0.00	-180.20	-200.98	817.53	846.99	908.92	-316.13	1393.14	-200.98
1981	0.00	-211.61	366.48	-31.79	-191.98	-216.98	687.09	706.89	687.09	-403.59	1073.37	-248.77
1982	0.00	-615.15	0.00	-186.22	-161.06	-182.21	714.47	720.04	714.47	-776.21	720.04	-368.43
1983	0.00	-626.47	6.44	-221.54	-129.17	-147.47	549.12	559.32	549.12	-755.64	565.76	-369.01
1984	0.00	-344.99	28.39	-13.46	-70.28	-84.03	321.28	331.50	321.28	-415.27	359.89	-97.49

Appendix Table A6.2 cont'd

	All Products and inputs						Proportion to GVA crops&livestock (%)					
	Direct		Total		net		Direct		Total		net	
	+	-	+	-	+	-	+	-	+	-	+	-
1960	1310.11	-580.31	729.80	399.22	-1518.94	-1119.72						
1961	3023.54	-140.65	2882.89	1943.97	-479.81	1464.16						
1962	84.73	-1610.42	-1525.69	79.02	-5740.89	-5661.87						
1963	164.02	-664.93	-500.91	24.15	-4674.23	-4650.08						
1964	1012.31	-1214.36	-202.05	119.83	-4022.66	-3902.83						
1965	1597.54	-1139.81	457.73	381.97	-3644.74	-3262.77						
1966	1735.36	-1725.43	9.93	729.11	-3400.96	-2671.85						
1967	1011.76	-1698.84	-687.08	118.46	-4281.92	-4163.46	4.02	-6.75	-2.73	0.47	-17.02	-16.55
1968	620.53	-1920.58	-1300.05	292.81	-5630.05	-5337.24	2.39	-7.39	-5.01	1.13	-21.68	-20.55
1969	506.29	-938.52	-432.23	145.09	-4711.25	-4566.16	1.91	-3.54	-1.63	0.55	-17.78	-17.23
1970	270.67	-3305.13	-3034.46	99.83	-8093.23	-7993.40	0.98	-12.00	-11.02	0.36	-29.39	-29.02
1971	3943.04	-2898.41	1044.63	2767.94	-5741.43	-2973.49	13.45	-9.89	3.56	9.44	-19.58	-10.14
1972	2069.75	-2638.32	-568.57	707.88	-5477.26	-4769.38	6.73	-8.58	-1.85	2.30	-17.81	-15.51
1973	894.44	-7471.71	-6577.27	302.30	-12107.35	-11805.05	2.81	-23.44	-20.63	0.95	-37.98	-37.04
1974	446.82	-16811.60	-16364.78	785.86	-27184.17	-26398.31	1.30	-48.91	-47.61	2.29	-79.09	-76.80
1975	563.26	-16909.13	-16345.87	1054.06	-28891.19	-27837.13	1.51	-45.32	-43.81	2.82	-77.43	-74.61
1976	2001.82	-3704.18	-1702.36	450.94	-9756.40	-9305.46	5.00	-9.25	-4.25	1.13	-24.36	-23.23
1977	940.12	-5220.33	-4280.21	291.22	-12771.48	-12480.26	2.23	-12.37	-10.14	0.69	-30.26	-29.57
1978	1074.33	-3833.09	-2758.76	257.19	-11818.51	-11561.32	2.42	-8.62	-6.21	0.58	-26.59	-26.01
1979	2407.27	-1661.44	745.83	184.57	-10597.36	-10412.79	5.08	-3.50	1.57	0.39	-22.35	-21.96
1980	1377.26	-7828.19	-6450.93	1393.14	-17387.79	-15994.65	2.75	-15.64	-12.89	2.78	-34.73	-31.95
1981	1184.34	-7834.60	-6650.26	1073.37	-16739.73	-15666.36	2.26	-14.98	-12.71	2.05	-32.00	-29.95
1982	2866.74	-3596.23	-729.49	1255.13	-8509.18	-7254.05	5.25	-6.59	-1.34	2.30	-15.59	-13.29
1983	1348.41	-2304.01	-955.60	565.76	-8660.35	-8094.59	2.56	-4.37	-1.81	1.07	-16.42	-15.35
1984	793.17	-2588.65	-1795.48	359.89	-11308.36	-10948.47	1.44	-4.71	-3.27	0.65	-20.58	-19.92

Appendix Table A6.2 cont'd

	NON PRICE TRANSFERS (Direct)						Total Non Price Transfers			Total Non Price Transfers		
	Tax Revenues with other Taxes	without other taxes	with rural roads	without rural roads	Research and Extension	Agric'l. Support Services	+	-	net	+	-	net
1960	-300.2	-55.4	76.2	3.1	325.6	263.3	665.1	-300.2	364.9	592.0	-55.4	536.6
1961	-303.2	-61.8	85.5	3.2	253.4	316.7	655.6	-303.2	352.3	573.2	-61.8	511.5
1962	-264.1	-17.0	76.2	4.8	208.3	226.0	510.6	-264.1	246.4	439.1	-17.0	422.1
1963	-323.3	-17.6	555.3	508.2	248.4	172.3	976.1	-323.3	652.8	928.9	-17.6	911.3
1964	-352.3	-67.3	116.2	59.3	298.7	690.5	1095.4	-352.3	743.1	1038.5	-67.3	971.3
1965	-336.3	-49.1	351.1	280.6	304.3	322.7	978.1	-336.3	641.8	907.6	-49.1	858.5
1966	-372.0	-51.0	175.9	110.9	321.0	372.0	868.9	-372.0	496.9	803.9	-51.0	752.9
1967	-336.8	-55.8	163.2	112.6	291.4	371.7	826.4	-336.8	489.6	775.8	-55.8	720.0
1968	-478.9	-50.6	264.5	167.7	245.7	355.8	866.0	-478.9	387.1	769.2	-50.6	718.6
1969	-376.1	-49.7	470.4	376.1	269.1	422.5	1162.0	-376.1	785.9	1067.7	-49.7	1018.0
1970	-395.3	-51.1	726.7	517.2	243.9	417.3	1387.9	-395.3	992.6	1178.4	-51.1	1127.3
1971	-424.2	-55.5	793.0	717.8	273.5	405.6	1472.1	-424.2	1047.9	1396.9	-55.5	1341.4
1972	-382.2	-43.9	1155.2	1096.4	314.7	413.2	1883.0	-382.2	1500.9	1824.2	-43.9	1780.4
1973	-430.5	-63.7	1668.9	1618.9	364.3	426.2	2459.3	-430.5	2028.8	2409.4	-63.7	2345.7
1974	-411.9	-61.4	1826.3	1796.2	490.4	557.7	2874.5	-411.9	2462.6	2844.3	-61.4	2782.9
1975	-412.1	-60.9	1801.6	1706.3	528.5	694.8	3024.9	-412.1	2612.8	2929.6	-60.9	2868.7
1976	-403.0	-69.5	1922.0	1823.5	656.2	607.1	3185.3	-403.0	2782.3	3086.8	-69.5	3017.3
1977	-538.5	-76.5	2507.6	2418.1	651.5	577.2	3736.3	-538.5	3197.8	3646.8	-76.5	3570.3
1978	-630.8	-83.2	3024.7	2938.4	653.9	673.9	4352.5	-630.8	3721.7	4266.3	-83.2	4183.1
1979	-670.6	-100.8	2947.0	2859.7	615.0	750.2	4312.3	-670.6	3641.7	4225.0	-100.8	4124.1
1980	-594.2	-115.5	2654.7	2576.4	659.4	800.4	4114.5	-594.2	3520.3	4036.2	-115.5	3920.7
1981	-804.4	-124.7	2655.5	2523.2	792.5	953.8	4401.8	-804.4	3597.4	4269.4	-124.7	4144.8
1982	-797.5	-72.6	2330.0	2160.8	731.6	908.7	3970.3	-797.5	3172.8	3801.1	-72.6	3728.5

Appendix Table A6.2 cont'd

	NON PRICE TRANSFERS (Total)						Total Non Price Transfers			Total Non Price Transfers		
	Tax Revenues with other Taxes	without other taxes	Infrastructure with rural roads	Research without rural roads	and Extension	Agric'l. Support Services	+	-	net	+	-	net
1960	-307.6	-56.8	78.1	3.2	333.6	269.7	681.4	-307.6	373.8	606.5	-56.8	549.7
1961	-303.5	-61.8	85.6	3.2	253.6	317.0	656.1	-303.5	352.6	573.7	-61.8	511.9
1962	-270.4	-17.4	78.0	4.9	213.2	231.4	522.6	-270.4	252.3	449.5	-17.4	432.1
1963	-333.8	-18.2	573.4	524.7	256.5	177.9	1007.8	-333.8	674.0	959.1	-18.2	940.9
1964	-358.9	-69.5	118.4	60.4	294.1	703.4	1115.9	-358.9	757.0	1057.9	-68.5	989.4
1965	-343.6	-50.2	356.7	286.8	310.9	329.7	999.4	-343.6	655.8	927.4	-50.2	877.2
1966	-381.0	-52.2	180.1	113.6	328.7	381.0	889.8	-381.0	508.9	823.3	-52.2	771.1
1967	-343.1	-56.8	166.2	114.7	296.9	378.7	841.7	-343.1	499.7	790.2	-56.8	733.4
1968	-482.0	-50.9	266.2	168.8	247.3	358.1	871.6	-482.0	389.6	774.2	-50.9	723.3
1969	-379.4	-50.2	474.4	379.4	271.4	426.2	1172.0	-379.4	792.6	1076.9	-50.2	1026.8
1970	-404.7	-52.4	744.0	529.5	249.7	427.3	1421.0	-404.7	1016.3	1206.5	-52.4	1154.2
1971	-430.6	-56.3	804.9	728.6	277.6	411.7	1494.2	-430.6	1063.6	1417.9	-56.3	1361.6
1972	-390.2	-44.8	1179.5	1119.4	321.3	421.8	1922.5	-390.2	1532.3	1862.5	-44.8	1817.7
1973	-453.8	-67.1	1759.3	1706.6	384.0	449.3	2592.5	-453.8	2138.7	2539.9	-67.1	2472.8
1974	-425.1	-63.3	1884.8	1853.7	506.1	575.6	2966.5	-425.1	2541.4	2935.3	-63.3	2872.0
1975	-418.3	-61.8	1828.4	1731.7	536.4	705.2	3070.0	-418.3	2651.7	2973.3	-61.8	2911.4
1976	-406.0	-70.0	1936.3	1837.1	661.1	611.6	3209.0	-406.0	2803.0	3109.8	-70.0	3039.8
1977	-551.3	-78.3	2567.3	2475.7	667.0	590.9	3825.2	-551.3	3273.9	3733.6	-78.3	3655.2
1978	-649.7	-85.7	3115.1	3026.3	673.4	694.1	4482.6	-649.7	3832.9	4393.8	-85.7	4308.1
1979	-699.4	-105.1	3073.4	2982.3	641.4	782.4	4497.1	-699.4	3797.8	4406.1	-105.1	4300.9
1980	-615.6	-119.6	2750.3	2669.2	683.2	829.3	4262.8	-615.6	3647.1	4181.6	-119.6	4062.0
1981	-827.6	-128.3	2732.1	2595.9	815.3	981.2	4528.6	-827.6	3701.0	4392.5	-128.3	4264.2
1982	-803.7	-73.1	2348.2	2177.6	737.3	915.8	4001.2	-803.7	3197.5	3830.7	-73.1	3757.6

Appendix Table A6.2 cont'd

	Proportion to GVA crops&livestock (%)								Proportion to GNP (%)			
	Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other tax and rural roads)		Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other taxes and rural roads)		Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other taxes and rural roads)	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total
1960	1094.7	-745.9	1266.4	-570.0					1.1	-0.8	1.3	-0.6
1961	3235.2	1816.8	3394.4	1976.1					3.1	1.7	3.3	1.9
1962	-1279.3	-5409.6	-1103.6	-5229.8					-1.2	-4.9	-1.0	-4.7
1963	151.9	-3976.1	410.4	-3709.2					0.1	-3.4	0.3	-3.1
1964	541.0	-3145.8	769.2	-2913.4					0.4	-2.6	0.6	-2.4
1965	1099.5	-2607.0	1316.2	-2385.6					0.9	-2.0	1.0	-1.9
1966	506.8	-2163.0	762.8	-1900.8					0.4	-1.6	0.6	-1.4
1967	-197.5	-3664.8	32.9	-3430.1	-0.8	-14.6	0.1	-13.6	-0.1	-2.6	.0	-2.4
1968	-913.0	-4947.6	-581.5	-4613.9	-3.5	-19.0	-2.2	-17.8	-0.6	-3.3	-0.4	-3.1
1969	353.7	-3773.6	585.8	-3539.4	1.3	-14.2	2.2	-13.4	0.2	-2.4	0.4	-2.2
1970	-2041.9	-6977.1	-1907.2	-6839.2	-7.4	-25.3	-6.9	-24.8	-1.2	-4.1	-1.1	-4.0
1971	2092.5	-1909.9	2386.0	-1611.9	7.1	-6.5	8.1	-5.5	1.1	-1.0	1.3	-0.9
1972	932.3	-3237.1	1211.8	-2951.7	3.0	-10.5	3.9	-9.6	0.5	-1.7	0.6	-1.5
1973	-4548.5	-9666.4	-4231.6	-9332.3	-14.3	-30.3	-13.3	-29.3	-2.2	-4.6	-2.0	-4.5
1974	-13902.2	-23856.9	-13581.9	-23526.3	-40.4	-69.4	-39.5	-68.4	-6.2	-10.7	-6.1	-10.6
1975	-13733.1	-25185.4	-13477.2	-24925.7	-36.8	-67.5	-36.1	-66.8	-5.8	-10.7	-5.7	-10.6
1976	1079.9	-6502.5	1314.9	-6265.7	2.7	-16.2	3.3	-15.6	0.4	-2.6	0.5	-2.5
1977	-1082.4	-9206.4	-709.9	-8825.1	-2.6	-21.8	-1.7	-20.9	-0.4	-3.4	-0.3	-3.3
1978	962.9	-7728.4	1424.3	-7253.2	2.2	-17.4	3.2	-16.3	0.3	-2.7	0.5	-2.5
1979	4387.5	-6615.0	4869.9	-6111.9	9.3	-14.0	10.3	-12.9	1.4	-2.2	1.6	-2.0
1980	-2930.6	-12347.5	-2530.2	-11932.6	-5.9	-24.7	-5.1	-23.8	-0.9	-3.9	-0.8	-3.7
1981	-3052.9	-11965.4	-2505.5	-11402.2	-5.8	-22.9	-4.8	-21.8	-0.9	-3.6	-0.8	-3.5
1982	2443.3	-4056.6	2999.0	-3496.5	4.5	-7.4	5.5	-6.4	0.7	-1.2	0.9	-1.0

Appendix Table A6.3  
 Nominal Transfers Out of (-) and Into (+) Agriculture  
 (In million pesos at constant 1982 prices)  
 Sugar Border Price is ISO

	OUTPUT PRICE RELATED TRANSFERS											
	Direct Transfers					Total Transfers						
	Rice	Corn	Sugar	Copra	All Products	Rice	Corn	Sugar	Copra	All Products		
				+	-					+	-	
1960	885.47	496.31	1140.18	101.63	2623.59	0.00	0.00	386.02	932.87	-304.88	1318.89	-304.88
1961	2274.59	617.60	2249.81	552.30	5694.30	0.00	1642.76	505.31	2035.54	220.92	4404.53	0.00
1962	-490.57	54.02	1622.82	-115.15	1676.84	-605.72	-1349.07	-162.07	1081.88	-1496.92	1081.88	-3008.06
1963	-335.97	150.82	-2250.15	-104.83	150.82	-2690.95	-1119.89	0.00	-4071.69	-1362.78	0.00	-6554.36
1964	860.75	195.56	-699.96	-381.31	1056.31	-1081.27	215.19	48.89	-1899.88	-1715.88	264.08	-3615.76
1965	1063.09	436.49	1831.71	271.97	3603.26	0.00	318.93	291.00	1308.36	-1087.88	1918.29	-1087.88
1966	1326.93	490.16	2659.70	-551.50	4476.79	-551.50	612.43	343.11	2402.31	-1286.84	3357.85	-1286.84
1967	710.61	348.85	2623.07	-351.93	3682.53	-351.93	-304.55	149.51	2369.23	-1319.75	2518.74	-1624.30
1968	100.63	563.07	2518.18	-240.30	3181.88	-240.30	-1207.60	307.13	2193.25	-1441.77	2500.38	-2649.37
1969	105.88	437.01	2653.04	-78.45	3195.93	-78.45	-1270.54	163.88	1857.13	-1176.75	2021.01	-2447.29
1970	103.30	102.61	1888.63	-1301.72	2094.54	-1301.72	-1136.28	-205.21	944.32	-2748.07	944.32	-4089.56
1971	3358.39	692.52	1509.56	-604.14	5560.47	-604.14	2450.72	395.73	934.49	-1678.17	3780.94	-1678.17
1972	1279.66	819.50	-672.47	-639.41	2099.16	-1311.88	150.55	532.68	-1942.68	-1406.70	683.23	-3349.38
1973	-5155.10	-37.34	-2658.90	542.13	542.13	-7851.34	-6627.99	-298.75	-4024.29	-271.07	0.00	-11222.10
1974	-6153.66	-435.95	-14647.36	-2036.83	0.00	-23273.80	-8790.94	-1140.17	-19252.39	-4364.63	0.00	-33548.13
1975	-1502.16	0.00	-6490.78	-1881.11	0.00	-9874.05	-3884.89	-914.99	-11532.72	-3412.24	0.00	-19744.84
1976	1043.45	580.36	-481.97	-235.75	1623.81	-717.72	-844.70	-161.21	-3266.68	-1744.51	0.00	-6017.10
1977	-718.91	813.87	526.07	-2193.03	1339.94	-2911.94	-3019.42	180.86	-1052.14	-4775.93	180.86	-8847.49
1978	-1599.85	618.68	835.12	-1465.44	1453.80	-3065.29	-4205.32	-58.92	-493.48	-4800.59	0.00	-9558.31
1979	-866.88	631.40	1074.18	-46.85	1705.58	-913.73	-3261.13	-26.31	-455.71	-5528.62	0.00	-9271.77
1980	-2241.47	434.00	-6971.80	-3866.28	434.00	-13079.55	-4916.78	-274.10	-11114.87	-6976.11	0.00	-23281.86
1981	-1745.10	467.03	-1404.45	-2401.86	467.03	-5551.41	-4311.43	-254.74	-3916.25	-4653.61	0.00	-13136.03
1982	1177.75	1095.85	2682.42	-2082.96	4956.02	-2082.96	-621.59	587.06	1341.21	-4071.24	1928.27	-4692.83
1983	316.49	512.54	2019.62	-314.74	2848.65	-314.74	-1611.24	-106.04	408.22	-2421.08	408.22	-4138.36
1984	39.57	469.99	1470.75	-1955.48	1980.31	-1955.48	-1938.96	-222.63	289.52	-6143.15	289.52	-8304.74
1985	2210.89	1151.13	1857.14	-2719.71	5219.16	-2719.71	851.74	683.84	1441.50	-4380.00	2977.08	-4380.00
1986	130.11	1336.41	1147.11	-1184.55	2613.63	-1184.55	-1059.44	1026.18	778.15	-1904.89	1804.33	-2964.33

Appendix Table A6.3

	Fertilizers				Four-wheeled Tractors		Credit		All Inputs			
	Direct		Total		Direct	Total	Direct	Total	Direct		Total	
	+	-	+	-					+	-	+	-
1960	4.94	-93.24	33.91	-48.73					4.94	-93.24	33.91	-48.73
1961	9.71	-120.10	55.79	-63.62					9.71	-120.10	55.79	-63.62
1962	24.35	-141.23	73.99	-71.00					24.35	-141.23	73.99	-71.00
1963	8.39	-83.22	21.85	-59.83					8.39	-83.22	21.85	-59.83
1964	10.26	-144.18	31.78	-79.32					10.26	-144.18	31.78	-79.32
1965	0.00	-188.49	0.00	-100.55	-55.38	-51.91			0.00	-243.87	0.00	-152.46
1966	0.00	-137.93	7.12	-100.82	-50.19	-45.96			0.00	-188.12	7.12	-146.78
1967	0.00	-348.97	0.00	-250.54	-90.74	-72.50			0.00	-439.71	0.00	-323.04
1968	0.00	-382.84	0.00	-254.70	-86.55	-61.18			0.00	-469.39	0.00	-315.88
1969	0.00	-330.01	0.00	-177.47	-62.60	-41.33			0.00	-392.61	0.00	-218.80
1970	10.47	-86.84	0.00	87.26	-44.95	-26.84			10.47	-131.79	0.00	60.42
1971	82.85	-71.37	228.03	-46.07	-46.95	-23.34			82.85	-118.32	228.03	-69.41
1972	32.39	-50.63	205.28	-31.58	-79.03	-58.13			32.39	-129.66	205.28	-89.71
1973	92.91	-146.15	169.87	-68.84	-107.25	-92.64	103.00	108.60	195.91	-253.40	278.47	-161.48
1974	246.23	-246.00	564.65	-41.98	-106.81	-82.33	235.42	243.00	481.65	-352.81	807.65	-124.31
1975	343.10	-130.26	899.81	-59.31	-291.48	-254.15	174.89	177.36	517.99	-421.74	1077.17	-313.46
1976	0.00	-671.79	1.03	-409.13	-199.55	-188.68	443.96	446.93	443.96	-871.34	447.96	-597.81
1977	0.00	-503.89	41.81	-258.49	-158.05	-126.10	127.57	130.48	127.57	-661.94	172.29	-384.59
1978	7.09	-397.35	113.71	-119.20	-189.05	-164.15	103.73	106.79	110.82	-586.40	220.50	-283.35
1979	0.00	-451.82	63.47	-84.26	-107.09	-65.43	78.17	81.49	78.17	-558.91	144.96	-149.69
1980	100.04	-118.91	511.72	0.00	-64.97	-48.70	814.35	844.61	914.39	-183.88	1356.33	-48.70
1981	0.00	-188.92	346.23	-37.39	-50.84	-29.24	688.64	707.90	688.64	-239.76	1054.13	-66.63
1982	0.00	-655.47	0.00	-235.23	-42.62	-21.94	723.23	726.37	723.23	-698.09	726.37	-257.17
1983	0.00	-637.96	0.00	-257.92	-20.16	-3.12	553.15	562.26	553.15	-658.12	562.26	-261.04
1984	0.00	-353.43	0.00	-37.97	15.47	28.38	323.69	333.32	323.69	-337.96	333.32	-9.59

Appendix Table A6.3 cont'd

	All Products and inputs						Proportion to GVA crops&livestock (%)						
	Direct		net	Total		net	Direct			Total			
	+	-		+	-		+	-	net	+	-	net	
1960	2628.53	-93.24	2535.29	1352.80	-353.61	999.19							
1961	5704.01	-120.10	5583.91	4460.32	-63.62	4396.70							
1962	1701.19	-746.95	954.24	1155.87	-3079.06	-1923.19							
1963	159.21	-2774.17	-2614.96	21.85	-6614.19	-6592.34							
1964	1066.57	-1225.45	-158.88	295.86	-3695.08	-3399.22							
1965	3603.26	-243.87	3359.39	1918.29	-1240.34	677.95							
1966	4476.79	-739.62	3737.17	3364.97	-1433.62	1931.35							
1967	3682.53	-791.64	2890.89	2518.74	-1947.34	571.40	14.64	-3.15	11.49	10.01	-7.74	2.27	
1968	3181.88	-709.69	2472.19	2500.38	-2965.25	-464.87	12.25	-2.73	9.52	9.63	-11.42	-1.79	
1969	3195.93	-471.06	2724.87	2021.01	-2666.09	-645.08	12.06	-1.78	10.28	7.63	-10.06	-2.43	
1970	2105.01	-1433.51	671.50	944.32	-4029.14	-3084.82	7.64	-5.20	2.44	3.43	-14.63	-11.20	
1971	5643.32	-722.46	4920.86	4008.97	-1747.58	2261.39	19.25	-2.46	16.79	13.67	-5.96	7.71	
1972	2131.55	-1441.54	690.01	888.51	-3439.09	-2550.58	6.93	-4.69	2.24	2.89	-11.18	-8.29	
1973	738.04	-8104.74	-7366.70	278.47	-11383.58	-11105.11	2.32	-25.43	-23.11	0.87	-35.71	-34.84	
1974	481.65	-23626.61	-23144.96	807.65	-33672.44	-32864.79	1.40	-68.74	-67.33	2.35	-97.96	-95.61	
1975	517.99	-10295.79	-9777.80	1077.17	-20058.30	-18981.13	1.39	-27.59	-26.21	2.89	-53.76	-50.87	
1976	2067.77	-1589.06	478.71	447.96	-6614.91	-6166.95	5.16	-3.97	1.20	1.12	-16.52	-15.40	
1977	1467.51	-3573.88	-2106.37	353.15	-9232.08	-8878.93	3.48	-8.47	-4.99	0.84	-21.87	-21.04	
1978	1564.62	-3651.69	-2087.07	220.50	-9841.66	-9621.16	3.52	-8.21	-4.69	0.50	-22.14	-21.64	
1979	1783.75	-1472.64	311.11	144.96	-9421.46	-9276.50	3.76	-3.11	0.66	0.31	-19.87	-19.57	
1980	1348.39	-13263.43	-11915.04	1356.33	-23330.56	-21974.23	2.69	-26.49	-23.80	2.71	-46.60	-43.89	
1981	1155.67	-5791.17	-4635.50	1054.13	-13202.66	-12148.53	2.21	-11.07	-8.86	2.01	-25.24	-23.22	
1982	5679.25	-2781.05	2898.20	2654.64	-4950.00	-2295.36	10.40	-5.09	5.31	4.86	-9.07	-4.20	
1983	3401.80	-972.86	2428.94	970.48	-4399.40	-3428.92	6.45	-1.84	4.61	1.84	-8.34	-6.50	
1984	2304.00	-2293.44	10.56	622.84	-8314.33	-7691.49	4.19	-4.17	0.02	1.13	-15.13	-14.00	

Appendix Table A6.3 cont'd

	Tax Revenues		NON PRICE TRANSFERS (Direct)				Total Non Price Transfers			Total Non Price Transfers		
	with other Taxes	without other taxes	Infrastructure with rural roads	Infrastructure without rural roads	Research and Extension	Agric'l. Support Services	(with other taxes, rural roads) +                    -                    net			(without other taxes, rural roads) +                    -                    net		
1960	-302.3	-55.8	76.7	3.1	327.9	265.1	669.8	-302.3	367.4	596.1	-55.8	540.3
1961	-306.9	-62.5	86.5	3.2	256.4	320.5	663.5	-306.9	356.6	580.1	-62.5	517.6
1962	-265.8	-17.1	76.7	4.8	209.6	227.4	513.7	-265.8	247.9	441.8	-17.1	424.7
1963	-322.9	-17.6	554.6	507.5	248.1	172.1	974.9	-322.9	652.0	927.8	-17.6	910.2
1964	-352.3	-67.3	116.2	59.3	288.7	690.5	1095.4	-352.3	743.1	1038.5	-67.3	971.3
1965	-338.7	-49.5	353.6	282.6	306.5	325.0	985.1	-338.7	646.4	914.1	-49.5	864.6
1966	-376.2	-51.6	177.9	112.2	324.6	376.2	878.8	-376.2	502.5	813.0	-51.6	761.5
1967	-348.1	-57.7	168.6	116.4	301.2	384.2	854.0	-348.1	505.9	801.7	-57.7	744.1
1968	-494.6	-52.3	273.2	173.2	253.7	367.5	894.4	-494.6	399.8	794.5	-52.3	742.2
1969	-382.8	-50.6	478.8	382.8	273.9	430.1	1182.7	-382.8	799.9	1086.8	-50.6	1036.2
1970	-400.3	-51.8	736.0	523.8	247.0	422.7	1405.7	-400.3	1005.4	1193.5	-51.8	1141.7
1971	-428.1	-56.0	800.3	724.4	276.0	409.4	1485.6	-428.1	1057.5	1409.7	-56.0	1353.8
1972	-382.8	-43.9	1157.3	1098.3	315.2	413.9	1886.3	-382.8	1503.5	1827.4	-43.9	1783.5
1973	-430.2	-63.6	1667.9	1618.0	364.1	426.0	2457.9	-430.2	2027.7	2408.0	-63.6	2344.4
1974	-411.5	-61.3	1824.4	1794.3	489.9	557.1	2871.4	-411.5	2459.9	2841.3	-61.3	2780.0
1975	-413.1	-61.1	1805.6	1710.1	529.7	696.4	3031.6	-413.1	2618.6	2936.1	-61.1	2875.1
1976	-404.0	-69.6	1926.7	1828.0	657.8	608.6	3193.1	-404.0	2789.2	3094.4	-69.6	3024.7
1977	-541.0	-76.9	2519.0	2429.1	654.4	579.8	3753.2	-541.0	3212.3	3663.3	-76.9	3586.4
1978	-631.8	-83.3	3029.5	2943.2	654.9	675.0	4359.5	-631.8	3727.7	4273.1	-83.3	4189.8
1979	-669.8	-100.7	2943.4	2856.2	614.3	749.3	4306.9	-669.8	3637.1	4219.7	-100.7	4119.0
1980	-591.9	-115.0	2644.4	2566.3	656.8	797.3	4098.5	-591.9	3506.6	4020.5	-115.0	3905.5
1981	-806.2	-125.0	2661.5	2528.9	794.3	955.9	4111.7	-806.2	3605.5	4279.1	-125.0	4154.1
1982	-807.3	-73.4	2358.6	2187.3	740.5	919.9	4019.0	-807.3	3211.7	3847.7	-73.4	3774.2

Appendix Table A6.3 cont'd

	Tax Revenues		NON PRICE TRANSFERS (Total)				Total Non Price Transfers			Total Non Price Transfers		
	with other Taxes	without other taxes	Infrastructure with rural roads	Infrastructure without rural roads	Research and Extension	Agric'l. Support Services	+	-	net	+	-	net
1960	-309.3	-57.1	78.5	3.2	335.4	271.2	685.2	-309.3	375.9	609.8	-57.1	552.7
1961	-306.6	-62.4	86.5	3.2	256.2	320.3	662.9	-306.6	356.3	579.7	-62.4	517.2
1962	-271.3	-17.5	78.3	4.9	214.0	232.2	524.5	-271.3	253.1	451.0	-17.5	433.6
1963	-333.3	-18.2	572.6	524.0	256.2	177.7	1006.5	-333.3	673.2	957.8	-18.2	939.7
1964	-358.9	-68.5	118.4	60.4	294.1	703.4	1115.9	-358.9	757.0	1057.9	-68.5	989.4
1965	-345.3	-50.5	360.5	288.1	312.5	331.3	1004.3	-345.3	659.0	931.9	-50.5	881.5
1966	-384.5	-52.7	181.8	114.6	331.8	384.5	838.1	-384.5	513.6	830.9	-52.7	778.2
1967	-352.0	-58.3	170.6	117.7	304.6	388.6	853.8	-352.0	511.7	810.9	-58.3	752.6
1968	-493.9	-52.2	272.8	173.0	253.3	366.9	893.0	-493.9	399.2	793.2	-52.2	741.0
1969	-384.5	-50.8	480.9	384.5	275.1	432.0	1187.9	-384.5	803.4	1091.5	-50.8	1040.7
1970	-408.6	-52.9	751.3	534.7	252.1	431.5	1434.9	-408.6	1026.2	1218.3	-52.9	1165.4
1971	-433.6	-56.7	810.6	733.7	279.5	414.6	1504.7	-433.6	1071.0	1427.8	-56.7	1371.1
1972	-390.6	-44.8	1180.7	1120.6	321.6	422.3	1924.6	-390.6	1534.0	1864.5	-44.8	1819.6
1973	-453.7	-67.1	1758.7	1706.1	383.9	449.2	2591.8	-453.7	2138.1	2539.1	-67.1	2472.0
1974	-424.7	-63.3	1883.1	1852.0	505.6	575.1	2963.8	-424.7	2539.1	2932.7	-63.3	2869.5
1975	-418.9	-61.9	1831.0	1734.2	537.2	706.2	3074.4	-418.9	2655.5	2977.5	-61.9	2915.6
1976	-406.7	-70.1	1939.7	1840.2	662.3	612.6	3214.6	-406.7	2807.9	3115.1	-70.1	3045.0
1977	-553.3	-78.6	2576.5	2484.5	669.3	593.0	3838.9	-553.3	3285.6	3746.9	-78.6	3668.3
1978	-650.5	-85.8	3119.2	3030.3	674.3	695.0	4488.5	-650.5	3838.0	4399.6	-85.8	4313.8
1979	-698.3	-105.0	3068.5	2977.6	640.4	781.1	4490.0	-698.3	3791.8	4399.1	-105.0	4294.1
1980	-613.9	-119.3	2742.6	2661.7	681.3	826.9	4250.8	-613.9	3636.9	4169.9	-119.3	4050.6
1981	-828.7	-128.5	2736.0	2599.7	816.5	982.6	4535.1	-828.7	3706.4	4398.8	-128.5	4270.3
1982	-810.8	-73.8	2368.8	2196.8	743.7	923.9	4036.4	-810.8	3225.6	3864.4	-73.8	3790.6

Appendix Table A6.3 cont'd

	Proportion to GVA crops&livestock (%)				Proportion to GNP (%)							
	Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other taxes and rural roads)		Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other tax and rural roads)		Total Net Tran (with other taxes and rural roads)		Total Net Tran (without other and rural ro	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total
1960	2902.69	1375.09	3075.59	1551.89					2.99	1.41	3.16	1.60
1961	5940.51	4753.00	6101.51	4913.90					5.71	4.57	5.86	4.72
1962	1202.14	-1670.09	1378.94	-1489.59					1.09	-1.51	1.25	-1.35
1963	-1962.96	-5919.14	-1704.76	-5652.64					-1.66	-4.99	-1.44	-4.77
1964	584.22	-2642.22	812.42	-2409.82					0.48	-2.17	0.67	-1.98
1965	4005.79	1336.95	4223.99	1559.45					3.13	1.04	3.30	1.22
1966	4239.67	2444.95	4498.67	2709.55					3.15	1.82	3.34	2.01
1967	3396.79	1083.10	3634.99	1324.00	13.50	4.30	14.45	5.26	2.40	0.77	2.57	0.94
1968	2871.99	-65.67	3214.39	276.13	11.06	-0.25	12.38	1.06	1.92	-0.04	2.15	0.18
1969	3524.77	158.32	3761.07	395.62	13.30	0.60	14.19	1.49	2.20	0.10	2.34	0.25
1970	1676.90	-2058.62	1813.20	-1919.42	6.09	-7.47	6.58	-6.97	0.99	-1.21	1.07	-1.13
1971	5978.36	3332.39	6274.66	3632.49	20.39	11.37	21.40	12.39	3.25	1.81	3.41	1.98
1972	2193.51	-1016.58	2473.51	-730.98	7.13	-3.31	8.04	-2.38	1.12	-0.52	1.26	-0.37
1973	-5339.00	-8967.01	-5022.30	-8633.11	-16.75	-28.13	-15.76	-27.08	-2.55	-4.28	-2.40	-4.12
1974	-20685.06	-30325.69	-20364.96	-29995.29	-60.18	-88.23	-59.25	-87.26	-9.29	-13.62	-9.15	-13.47
1975	-7159.20	-16325.63	-6902.70	-16065.53	-19.19	-43.75	-18.50	-43.06	-3.04	-6.93	-2.93	-6.81
1976	3267.91	-3359.05	3503.41	-3121.95	8.16	-8.39	8.75	-7.79	1.31	-1.34	1.40	-1.25
1977	1105.93	-5593.33	1480.03	-5210.63	2.62	-13.25	3.51	-12.35	0.41	-2.09	0.55	-1.95
1978	1640.63	-5783.16	2102.73	-5307.36	3.69	-13.01	4.73	-11.94	0.57	-2.02	0.74	-1.86
1979	3948.21	-5484.70	4430.11	-4982.40	8.33	-11.57	9.34	-10.51	1.29	-1.80	1.45	-1.63
1980	-8408.44	-18337.33	-8009.54	-17923.63	-16.80	-36.63	-16.00	-35.80	-2.64	-5.76	-2.51	-5.63
1981	-1030.00	-8442.13	-481.40	-7878.23	-1.97	-16.14	-0.92	-15.06	-0.31	-2.56	-0.15	-2.39
1982	6109.90	930.24	6672.40	1495.24	11.19	1.70	12.22	2.74	1.82	0.28	1.99	0.45

Appendix Table A6.4  
Real Transfers Out of (-) and Into (+) Agriculture  
(In million pesos at constant 1982 prices)  
Sugar Border Price is ISO

	OUTPUT PRICE RELATED TRANSFERS											
	Direct Transfers					Total Transfers						
	Rice	Corn	Sugar	Copra	All Products	Rice	Corn	Sugar	Copra	All Products		
				+	-					+	-	
1960	779.57	480.93	1093.17	-4.73	2353.67	-4.73	-230.12	353.66	841.63	-507.64	1195.29	-737.76
1961	2069.75	574.77	2137.44	288.99	5070.95	0.00	1380.11	452.26	1903.96	-71.28	3736.33	-71.28
1962	-481.00	55.91	1627.71	-106.16	1683.62	-587.16	-1453.28	-183.49	1026.73	-1605.62	1026.73	-3242.39
1963	-304.31	157.14	-2204.38	-75.86	157.14	-2584.55	-1270.95	-29.99	-4307.95	-1515.06	0.00	-7123.95
1964	816.00	184.89	-748.82	-427.89	1000.89	-1176.71	70.25	14.53	-2072.65	-1886.17	84.78	-3958.82
1965	962.67	414.86	1792.81	153.04	3323.38	0.00	107.73	246.18	1215.68	-1360.12	1569.59	-1360.12
1966	1214.16	465.16	2623.24	-686.91	4302.56	-686.91	373.18	290.66	2323.61	-1567.86	2987.45	-1567.86
1967	510.10	309.06	2566.18	-544.21	3385.34	-544.21	-616.73	87.67	2282.49	-1618.80	2370.16	-2235.53
1968	-103.11	531.98	2465.55	-428.41	2997.53	-531.52	-1454.19	267.31	2130.06	-1669.20	2397.37	-3123.39
1969	-21.70	412.49	2598.72	-174.83	3011.21	-277.94	-1460.86	127.06	1770.19	-1322.18	1897.25	-2783.04
1970	75.56	94.70	1869.00	-1334.80	2039.26	-1334.80	-1312.21	-254.19	818.05	-2957.06	818.05	-4523.46
1971	3164.68	617.75	1314.60	-842.90	5097.03	-842.90	2146.21	281.28	647.59	-2050.91	3075.08	-2050.91
1972	1200.92	800.07	-778.76	-694.70	2000.99	-1473.46	-83.23	474.71	-2249.50	-1569.97	474.71	-3902.70
1973	-4873.82	14.28	-2425.38	694.64	708.92	-7299.20	-7005.52	-367.77	-4341.83	-476.18	0.00	-12191.30
1974	-5613.50	-293.64	-13692.01	-1570.40	0.00	-21169.55	-8633.41	-1098.58	-18974.37	-4228.10	0.00	-32934.46
1975	-1295.13	79.56	-6072.22	-1748.18	79.56	-9115.53	-3776.94	-873.52	-11312.32	-3342.92	0.00	-19305.70
1976	981.01	556.11	-577.35	-284.27	1537.12	-861.62	-981.34	-214.41	-3473.75	-1851.39	0.00	-6520.89
1977	-758.43	803.28	499.11	-2237.02	1302.39	-2995.45	-3308.63	102.91	-1249.62	-5098.46	102.91	-9656.71
1978	-1609.30	616.16	830.00	-1477.54	1446.16	-3086.84	-4544.05	-148.61	-674.40	-5234.10	0.00	-10601.16
1979	-810.83	646.83	1111.60	82.18	1840.61	-810.83	-3594.08	-117.89	-675.62	-6294.09	0.00	-10681.68
1980	-2082.17	476.82	-6722.76	-3681.10	476.82	-12486.03	-5103.60	-324.13	-11406.26	-7193.27	0.00	-24027.26
1981	-1654.13	492.19	-1320.37	-2322.46	492.19	-5296.96	-4490.18	-304.38	-4083.76	-4809.82	0.00	-13688.14
1982	1016.37	1049.94	2571.66	-2260.47	4637.97	-2260.47	-869.16	516.74	1167.63	-4343.87	1684.37	-5213.03
1983	248.81	491.07	1973.35	-388.80	2713.23	-388.80	-1834.36	-177.02	247.56	-2665.15	247.56	-4676.53
1984	-41.56	441.86	1431.51	-2126.68	1873.37	-2168.24	-2314.95	-353.26	98.34	-6937.13	98.34	-9605.34
1985	1897.66	1042.01	1783.17	-3101.38	4722.84	-3101.38	299.70	491.97	1304.22	-5052.96	2095.89	-5052.96
1986	-40.40	1291.26	1107.74	-1288.07	2399.00	-1328.47	-1557.98	894.43	657.40	-2207.46	1551.83	-3765.44



Appendix Table A6.4 cont'd

	All Products and inputs						Proportion to GVA crops&livestock (%)					
	Direct		net		Total		Direct		net		Total	
	+	-	+	-	+	-	+	-	+	-	+	-
1960	2361.94	-88.76	2273.18	1234.80	-774.95	459.85						
1961	5093.08	-87.20	5005.88	3804.43	-111.22	3693.21						
1962	1707.72	-729.67	978.05	1104.35	-3305.77	-2201.42						
1963	165.20	-2669.63	-2504.43	24.02	-7178.71	-7154.69						
1964	1012.31	-1315.39	-303.08	119.83	-4026.23	-3906.40						
1965	3323.38	-273.75	3049.63	1569.59	-1543.38	26.21						
1966	4302.56	-926.14	3376.42	2998.25	-1774.30	1223.95						
1967	3385.34	-1124.56	2260.78	2370.16	-2736.00	-365.84	13.45	-4.47	8.98	9.42	-10.87	-1.45
1968	2997.53	-1154.24	1843.29	2397.37	-3650.34	-1252.97	11.54	-4.44	7.10	9.23	-14.05	-4.82
1969	3011.21	-810.97	2200.24	1897.25	-3186.19	-1288.94	11.36	-3.06	8.30	7.16	-12.02	-4.86
1970	2050.56	-1640.16	410.40	922.81	-4766.23	-3843.42	7.45	-5.96	1.49	3.35	-17.31	-13.95
1971	5206.64	-1180.23	4026.41	3361.72	-2395.54	966.18	17.76	-4.03	13.73	11.47	-8.17	3.30
1972	2058.17	-1826.34	231.83	701.18	-4264.40	-3563.22	6.69	-5.94	0.75	2.28	-13.87	-11.59
1973	898.89	-7881.23	-6982.34	295.62	-12688.69	-12393.07	2.82	-24.73	-21.91	0.93	-39.81	-38.88
1974	445.39	-21874.53	-21429.14	787.19	-33397.82	-32610.63	1.30	-63.64	-62.34	2.29	-97.16	-94.87
1975	560.48	-9863.01	-9302.53	1061.94	-20014.90	-18952.96	1.50	-26.43	-24.93	2.85	-53.64	-50.80
1976	1981.08	-1796.18	184.90	452.14	-7203.82	-6751.68	4.95	-4.48	0.46	1.13	-17.99	-16.86
1977	1429.96	-3888.46	-2458.50	282.56	-10322.32	-10039.76	3.39	-9.21	-5.82	0.67	-24.46	-23.79
1978	1557.31	-3862.49	-2305.18	259.20	-11130.28	-10871.08	3.50	-8.69	-5.19	0.58	-25.04	-24.45
1979	1918.78	-1653.94	264.84	182.55	-11181.35	-10998.80	4.05	-3.49	0.56	0.39	-23.58	-23.20
1980	1379.94	-12805.57	-11425.63	1379.84	-24228.02	-22848.18	2.76	-25.58	-22.82	2.76	-48.39	-45.64
1981	1180.83	-5697.26	-4516.43	1072.19	-13936.56	-12864.37	2.26	-10.89	-8.63	2.05	-26.64	-24.59
1982	5361.20	-3022.42	2338.78	2410.74	-5578.67	-3167.93	9.82	-5.54	4.28	4.42	-10.22	-5.80
1983	3266.38	-1135.82	2130.56	818.04	-5047.92	-4229.88	6.19	-2.15	4.04	1.55	-9.57	-8.02
1984	2197.06	-2575.42	-378.36	457.23	-9703.93	-9246.70	4.00	-4.69	-0.69	0.83	-17.66	-16.83
1985	4951.51	-3463.41	1488.10	2390.53	-5233.32	-2842.79	8.65	-6.05	2.60	4.18	-9.15	-4.97
1986	2399.00	-1498.69	900.31	1618.75	-3771.34	-2152.59	4.02	-2.51	1.51	2.71	-6.32	-3.61

Appendix Table A6.4 cont'd

	NON PRICE TRANSFERS (Direct)						Total Non Price Transfers			Total Non Price Transfers		
	Tax Revenues with other Taxes	without other taxes	Infrastructure with rural roads	without rural roads	Research and Extension	Agric'l. Support Services	+	-	net	+	-	net
1960	-302.3	-55.8	76.7	3.1	327.9	265.1	669.8	-302.3	367.4	596.1	-55.8	540.3
1961	-306.9	-62.5	86.5	3.2	256.4	320.5	663.5	-306.9	356.6	580.1	-62.5	517.6
1962	-265.8	-17.1	76.7	4.8	209.6	227.4	513.7	-265.8	247.9	441.8	-17.1	424.7
1963	-322.9	-17.6	554.6	507.5	248.1	172.1	974.9	-322.9	652.0	927.8	-17.6	910.2
1964	-352.3	-67.3	116.2	59.3	288.7	690.5	1095.4	-352.3	743.1	1038.5	-67.3	971.3
1965	-338.7	-49.5	353.6	282.6	306.5	325.0	985.1	-338.7	646.4	914.1	-49.5	864.6
1966	-376.2	-51.6	177.9	112.2	324.6	376.2	878.8	-376.2	502.5	813.0	-51.6	761.5
1967	-348.1	-57.7	168.6	116.4	301.2	384.2	854.0	-348.1	505.9	801.7	-57.7	744.1
1968	-494.6	-52.3	273.2	173.2	253.7	367.5	894.4	-494.6	399.8	794.5	-52.3	742.2
1969	-382.8	-50.6	478.8	382.8	273.9	430.1	1182.7	-382.8	799.9	1086.8	-50.6	1036.2
1970	-400.3	-51.8	736.0	523.8	247.0	422.7	1405.7	-400.3	1005.4	1193.5	-51.8	1141.7
1971	-428.1	-56.0	800.3	724.4	276.0	409.4	1485.6	-428.1	1057.5	1409.7	-56.0	1353.8
1972	-382.8	-43.9	1157.3	1098.3	315.2	413.9	1886.3	-382.8	1503.5	1827.4	-43.9	1783.5
1973	-430.2	-63.6	1667.9	1618.0	364.1	426.0	2457.9	-430.2	2027.7	2408.0	-63.6	2344.4
1974	-411.5	-61.3	1824.4	1794.3	489.9	557.1	2871.4	-411.5	2459.9	2841.3	-61.3	2780.0
1975	-413.1	-61.1	1805.6	1710.1	529.7	696.4	3031.6	-413.1	2618.6	2936.1	-61.1	2875.1
1976	-404.0	-69.6	1926.7	1828.0	657.8	608.6	3193.1	-404.0	2789.2	3094.4	-69.6	3024.7
1977	-541.0	-76.9	2519.0	2429.1	654.4	579.8	3753.2	-541.0	3212.3	3663.3	-76.9	3586.4
1978	-631.8	-83.3	3029.5	2943.2	654.9	675.0	4359.5	-631.8	3727.7	4273.1	-83.3	4189.8
1979	-669.8	-100.7	2943.4	2856.2	614.3	749.3	4306.9	-669.8	3637.1	4219.7	-100.7	4119.0
1980	-591.9	-115.0	2644.4	2566.3	656.8	797.3	4098.5	-591.9	3506.6	4020.5	-115.0	3905.5
1981	-806.2	-125.0	2661.5	2528.9	794.3	955.9	4411.7	-806.2	3605.5	4279.1	-125.0	4154.1
1982	-807.3	-73.4	2358.6	2187.3	740.5	919.9	4019.0	-807.3	3211.7	3847.7	-73.4	3774.2

Appendix Table A6.4 cont'd

	NON PRICE TRANSFERS (Total)						Total Non Price Transfers			Total Non Price Transfers		
	Tax Revenues with other Taxes	without other taxes	Infrastructure with rural roads	without rural roads	Research and Extension	Agric'l. Support Services	(with other taxes, rural roads) + - net			(without other taxes, rural roads) + - net		
1960	-309.3	-57.1	79.5	3.2	335.4	271.2	685.2	-309.3	375.9	609.8	-57.1	552.7
1961	-306.6	-62.4	86.5	3.2	256.2	320.3	662.9	-306.6	356.3	579.7	-62.4	517.2
1962	-271.3	-17.5	78.3	4.9	214.0	232.2	524.5	-271.3	253.1	451.0	-17.5	433.6
1963	-333.3	-18.2	572.6	524.0	256.2	177.7	1006.5	-333.3	673.2	957.8	-18.2	939.7
1964	-358.9	-68.5	118.4	60.4	294.1	703.4	1115.9	-358.9	757.0	1057.9	-68.5	989.4
1965	-345.3	-50.5	360.5	288.1	312.5	331.3	1004.3	-345.3	659.0	931.9	-50.5	881.5
1966	-384.5	-52.7	181.8	114.6	331.8	384.5	898.1	-384.5	513.6	830.9	-52.7	778.2
1967	-352.0	-58.3	170.6	117.7	304.6	388.6	863.8	-352.0	511.7	810.9	-58.3	752.6
1968	-493.9	-52.2	272.8	173.0	253.3	366.9	893.0	-493.9	399.2	793.2	-52.2	741.0
1969	-384.5	-50.8	480.9	384.5	275.1	432.0	1187.9	-384.5	803.4	1091.5	-50.8	1040.7
1970	-408.6	-52.9	751.3	534.7	252.1	431.5	1434.9	-408.6	1026.2	1218.3	-52.9	1165.4
1971	-433.6	-56.7	810.6	733.7	279.5	414.6	1504.7	-433.6	1071.0	1427.8	-56.7	1371.1
1972	-390.6	-44.8	1180.7	1120.6	321.6	422.3	1924.6	-390.6	1534.0	1864.5	-44.8	1819.6
1973	-453.7	-67.1	1758.7	1706.1	383.9	449.2	2591.8	-453.7	2138.1	2539.1	-67.1	2472.0
1974	-424.7	-63.3	1883.1	1852.0	505.6	575.1	2963.8	-424.7	2539.1	2932.7	-63.3	2869.5
1975	-418.9	-61.9	1831.0	1734.2	537.2	706.2	3074.4	-418.9	2655.5	2977.5	-61.9	2915.6
1976	-406.7	-70.1	1939.7	1840.2	662.3	612.6	3214.6	-406.7	2807.9	3115.1	-70.1	3045.0
1977	-553.3	-78.6	2576.5	2484.5	669.3	593.0	3838.9	-553.3	3285.6	3746.9	-78.6	3668.3
1978	-650.5	-85.8	3119.2	3030.3	674.3	695.0	4488.5	-650.5	3838.0	4399.6	-85.8	4313.8
1979	-698.3	-105.0	3068.5	2977.6	640.4	781.1	4490.0	-698.3	3791.8	4399.1	-105.0	4294.1
1980	-613.9	-119.3	2742.6	2661.7	681.3	826.9	4250.8	-613.9	3636.9	4169.9	-119.3	4050.6
1981	-828.7	-128.5	2736.0	2599.7	816.5	982.6	4535.1	-828.7	3706.4	4398.8	-128.5	4270.3
1982	-810.8	-73.8	2368.8	2196.8	743.7	923.9	4036.4	-810.8	3225.6	3864.4	-73.8	3790.6

Appendix Table A6.4 cont'd

	Proportion to GVA crops&livestock (%)								Proportion to GNP (%)			
	Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other taxes and rural roads)		Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other tax and rural roads)		Total Net Transfers (with other taxes and rural roads)		Total Net Transfers (without other taxes and rural roads)	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total
1960	2640.58	835.75	2813.48	1012.55					2.72	0.86	2.89	1.04
1961	5362.48	4049.51	5523.48	4210.41					5.15	3.89	5.31	4.04
1962	1225.95	-1948.32	1402.75	-1767.82					1.11	-1.77	1.27	-1.60
1963	-1852.43	-6481.49	-1594.23	-6214.99					-1.56	-5.47	-1.34	-5.24
1964	440.02	-3149.40	668.22	-2917.00					0.36	-2.58	0.55	-2.39
1965	3696.03	685.21	3914.23	907.71					2.89	0.54	3.06	0.71
1966	3878.92	1737.55	4137.92	2002.15					2.88	1.29	3.08	1.49
1967	2766.68	145.86	3004.88	386.76	11.00	0.58	11.94	1.54	1.96	0.10	2.13	0.27
1968	2243.09	-853.77	2585.49	-511.97	8.64	-3.29	9.95	-1.97	1.50	-0.57	1.73	-0.34
1969	3000.14	-485.54	3236.44	-248.24	11.32	-1.83	12.21	-0.94	1.87	-0.30	2.02	-0.15
1970	1415.80	-2817.22	1552.10	-2678.02	5.14	-10.23	5.64	-9.72	0.83	-1.66	0.91	-1.58
1971	5083.91	2037.18	5380.21	2337.28	17.34	6.95	18.35	7.97	2.77	1.11	2.93	1.27
1972	1735.33	-2029.22	2015.33	-1743.62	5.64	-6.60	6.55	-5.67	0.89	-1.04	1.03	-0.89
1973	-4954.64	-10254.97	-4637.94	-9921.07	-15.54	-32.17	-14.55	-31.12	-2.37	-4.90	-2.21	-4.74
1974	-18969.24	-30071.53	-18649.14	-29741.13	-55.19	-87.49	-54.26	-86.52	-8.52	-13.51	-8.38	-13.36
1975	-6683.93	-16297.46	-6427.43	-16037.36	-17.91	-43.68	-17.23	-42.98	-2.84	-6.91	-2.73	-6.80
1976	2974.10	-3943.78	3209.60	-3706.68	7.43	-9.85	8.01	-9.25	1.19	-1.58	1.28	-1.48
1977	753.80	-6754.16	1127.90	-6371.46	1.79	-16.00	2.67	-15.10	0.28	-2.52	0.42	-2.38
1978	1422.52	-7033.08	1884.62	-6557.28	3.20	-15.82	4.24	-14.75	0.50	-2.46	0.66	-2.30
1979	3901.94	-7207.00	4383.84	-6704.70	8.23	-15.20	9.25	-14.14	1.28	-2.36	1.44	-2.20
1980	-7919.03	-19211.28	-7520.13	-18797.58	-15.82	-38.37	-15.02	-37.55	-2.49	-6.03	-2.36	-5.90
1981	-910.93	-9157.97	-362.33	-8594.07	-1.74	-17.51	-0.69	-16.43	-0.28	-2.77	-0.11	-2.60
1982	5550.48	57.67	6112.98	622.67	10.17	0.11	11.20	1.14	1.65	0.02	1.82	0.19

Appendix Table A6.5  
 Nominal Transfers Due to Value Added and Non-Allocatable Inputs  
 (Million Pesos at 1982 prices)  
 Sugar Border Price is XUP

	DIRECT TRANSFERS					All Products		TOTAL TRANSFERS					All Products	
	Rice-Irr	Rice-Rf	Corn	Sugar	Coconut	+	-	Rice-Irr	Rice-Rf	Corn	Sugar	Coconut	+	-
1971	1576.81	1302.09	416.21	-788.59	-625.25	3295.1	-1413.84	1213.7	1000.63	-236.44	437.23	-1762.91	2651.55	-1999.35
1972	622.02	545.78	511.38	-729.06	-647.2	1679.18	-1376.26	170.75	146.87	155.4	-1117.29	-1453.69	473.03	-2570.98
1973	-2089.75	-1707.58	-17.86	-999.77	529.29	529.29	-4814.97	-2842.5	-2322.28	-476.19	-2158.89	-278.98	0	-8078.85
1974	-2206.16	-1825.69	-71.49	-4078.24	-1955.81	0	-10137.3	-3306.44	-2734.39	-920.17	-9541.84	-4325.14	0	-20827.97
1975	-584.79	-484.09	-63.13	-6748.6	-1833.08	0	-9713.69	-1521.09	-1259.75	-1254.21	-5993.41	-3374.64	0	-13403.11
1976	426.12	352.89	254.32	-1318.5	-237.49	1033.33	-1555.99	-343.1	-284.37	-761.14	-1914.24	-1770.54	0	-5073.39
1977	-294.69	-235.94	452.01	-754.73	-2193.79	452.01	-3479.15	-1277	-1021.98	-332.18	-622.29	-4891.3	0	-8144.74
1978	-672.42	-515.48	349.24	169.6	-1464.74	518.84	-2652.64	-1820.22	-1395.71	-567.41	-257.12	-4941.66	0	-8982.13
1979	-339.51	-252.88	362.79	827.9	-46.55	1190.7	-638.94	-1392.41	-1035.77	-475.93	-212.48	-5728.23	0	-8844.81
1980	-924.66	-653.75	277.28	-818.59	-3806.36	277.28	-6203.36	-2125.26	-1501.9	-882.08	-5902.78	-7115.48	0	-17527.49
1981	-756.17	-498.96	266.23	-1769.51	-2369.9	266.23	-5394.55	-1924.99	-1270.26	-1074.47	-2051.35	-4723.99	0	-11045.06
1982	594.97	329.33	630.46	-293.56	-2119.63	1554.75	-2413.19	-254.32	-142.12	-381.1	671.72	-4175.2	671.72	-4952.75
1983	179.47	95.25	366.49	-481.1	-315.9	641.21	-797	-758.86	-405.76	-909.57	192.19	-2475.15	192.19	-4549.33
1984	60.71	31.62	344.7	23.95	-1963.22	460.98	-1963.22	-901.21	-484.64	-1029.84	135.92	-6363.74	135.92	-8779.43

Appendix Table 6.5 cont'd

	Fertilizers				4-wheeled Tractors		Credit		All Inputs			
	Direct		Total		Direct	Total	Direct	Total	Direct		Total	
	+	-	+	-	-	-	+	+	+	-	+	-
1971	82.09	-70.72	0	-201.74	-46.53	-23.18			82.09	-117.25	0	-224.92
1972	51.07	-50.54	0	-173.51	-78.89	-58.07			51.07	-129.43	0	-231.58
1973	92.96	-146.23	68.86	-169.92	-107.31	-92.67	103.05	108.64	196.01	-253.54	177.5	-262.59
1974	246.49	-246.27	42.02	-565.15	-106.92	-82.4	235.67	243.21	482.16	-353.19	285.23	-647.55
1975	342.34	-129.97	59.23	-898.53	-290.83	-253.78	174.51	177.11	516.85	-420.8	236.34	-1152.31
1976	0	-597.61	408.42	-1.03	-199.06	-188.36	442.86	446.17	442.86	-796.67	854.59	-189.39
1977	0	-454.59	257.57	-41.66	-157.34	-125.65	127	130.02	127	-611.93	387.59	-167.31
1978	7.08	-396.71	119.04	-113.56	-188.74	-163.93	103.56	106.65	110.64	-585.45	225.69	-277.49
1979	0	-452.38	84.39	-63.57	-107.22	-65.54	78.26	81.62	78.26	-559.6	166.01	-129.11
1980	100.43	-119.38	0	-513.16	-65.22	-48.83	817.53	846.99	917.96	-184.6	846.99	-561.99
1981	0	-188.49	37.33	-345.74	-50.72	-29.2	687.09	706.89	687.09	-239.21	744.22	-374.94
1982	0	-647.53	233.18	0	-42.1	-21.75	714.47	720.04	714.47	-689.63	953.22	-21.75
1983	0	-633.31	256.57	0	-20.01	-3.11	549.12	559.32	549.12	-653.32	815.89	-3.11
1984	0	-350.8	37.76	0	15.35	28.23	321.28	331.5	321.28	-335.45	369.26	28.23

Appendix Table 6.5 cont'd

	All Products and Inputs						Proportion to GVA crops/livestock ( )					
	Direct			Total			Direct			Total		
	+	-	net	+	-	net	+	-	net	+	-	net
1971	3377.19	-1531.09	1846.1	2651.55	-2224.27	427.28	11.52	-5.22	6.30	9.04	-7.59	1.46
1972	1730.25	-1505.69	224.56	473.03	-2802.56	-2329.53	5.63	-4.90	0.73	1.54	-9.11	-7.57
1973	725.3	-5068.51	-4343.21	177.5	-8341.44	-8163.94	2.28	-15.90	-13.63	0.56	-26.17	-25.61
1974	482.16	-10490.5	-10008.4	285.23	-21475.52	-21190.29	1.40	-30.52	-29.12	0.83	-62.48	-61.65
1975	516.85	-10134.4	-9617.64	236.34	-14555.42	-14319.08	1.39	-27.16	-25.78	0.63	-39.01	-38.38
1976	1476.19	-2352.66	-876.47	854.59	-5262.78	-4408.19	3.69	-5.87	-2.19	2.13	-13.14	-11.01
1977	579.01	-4091.08	-3512.07	387.59	-8312.05	-7924.46	1.37	-9.69	-8.32	0.92	-19.69	-18.77
1978	629.48	-3238.09	-2608.61	225.69	-9259.62	-9033.93	1.42	-7.28	-5.87	0.51	-20.83	-20.32
1979	1268.96	-1198.54	70.42	166.01	-8973.92	-8807.91	2.68	-2.53	0.15	0.35	-18.93	-18.58
1980	1195.24	-6387.96	-5192.72	846.99	-18089.48	-17242.49	2.39	-12.76	-10.37	1.69	-36.13	-34.44
1981	953.32	-5633.76	-4680.44	744.22	-11420	-10675.78	1.82	-10.77	-8.95	1.42	-21.83	-20.41
1982	2269.22	-3102.82	-833.6	1624.94	-4974.5	-3349.56	4.16	-5.68	-1.53	2.98	-9.11	-6.14
1983	1190.33	-1450.32	-259.99	1008.08	-4552.44	-3544.36	2.26	-2.75	-0.49	1.91	-8.63	-6.72
1984	782.26	-2298.67	-1516.41	505.18	-8751.2	-8246.02	1.42	-4.18	-2.76	0.92	-15.93	-15.01

Appendix Table A6.6  
 Real Transfers Due to Value Added and Non-Allocatable Inputs  
 (Million Pesos at 1982 prices)  
 Sugar Border Price is XUP

	DIRECT REAL TRANSFERS					All Products		TOTAL REAL TRANSFERS					All Products	
	Rice-Irr	Rice-Rf	Corn	Sugar	Coconut	+	-	Rice-Irr	Rice-Rf	Corn	Sugar	Coconut	+	-
1971	1462	1072.19	592	-888.38	-746.86	3126.18	-1635.24	1047.77	766.84	-495.98	293	-1938.68	2107.6	-2434.66
1972	587.21	471	799	-770.15	-676.78	1857.21	-1446.93	75.3	57.27	179.89	-1229.96	-1534.81	312.47	-2764.77
1973	-2024.69	-1659.82	17.78	-920.58	647.49	665.27	-4605.08	-2922.66	-2395.45	-825.45	-2256.46	-424.6	0	-8824.62
1974	-2090.21	-1764.28	-2.86	-3912.76	-1682.9	0	-9453.02	-3280.06	-2766.19	-1458.56	-9504.2	-4263.06	0	-21272.07
1975	-511.22	-419.09	-26.58	-6612.74	-1762.1	0	-9331.73	-1489.35	-1221.63	-1990.44	-5934.78	-3344.02	0	-13980.22
1976	404.19	331.46	396.52	-1350.1	-262.73	1132.18	-1612.83	-387.28	-317.84	-1288.88	-1977.91	-1821.39	0	-5793.28
1977	-295.75	-236.79	740.03	-755.69	-2195.52	740.03	-3483.75	-1350.88	-1081.09	-611.48	-688.96	-5011.66	0	-8744.08
1978	-671.05	-526.51	573.8	170.79	-1461.47	744.58	-2659.03	-1904.37	-1494.56	-1007.89	-329.7	-5141.22	0	-9877.74
1979	-322.02	-245.51	610.26	845.81	32.42	1488.49	-567.53	-1489.8	-1134.2	-866.63	-312.22	-6168.03	0	-9970.88
1980	-884.68	-641.29	492.38	-775.6	-3741.68	492.38	-6043.24	-2176.8	-1577.08	-1494.79	-5958.19	-7198.86	0	-18405.73
1981	-718.28	-473.18	469.7	-1731.17	-2323.59	469.7	-5246.22	-1968.07	-1296.56	-1799.23	-2094.93	-4776.64	0	-11935.42
1982	540.98	287.59	991.7	-346.12	-2168.73	1820.27	-2514.85	-332.63	-178.27	-685.43	595.49	-4246.42	595.49	-5442.75
1983	168.05	85.65	590.95	-493.14	-333.1	844.64	-826.24	-828.08	-425.27	-1550.81	119.22	-2579.4	119.22	-5383.57
1984	47.33	23.48	552.5	13.77	-2000.67	637.07	-2000.67	-1022.54	-528.09	-1802.33	43.58	-6703.35	43.58	-10056.31

Appendix Table A6.6 cont'd

	Fertilizers		4-wheeled Tractors		Credit		All Inputs					
	Direct	Total	Direct	Total	Direct	Total	Direct	Total				
	+	-	+	-	-	-	+	+	+	-	+	-
1971	103.12	-60.5	287.28	-40.38	-277.87	-303.7			103.12	-338.37	287.28	-344.08
1972	56.33	-45.07	231.32	-28.39	-308.32	-333.23			56.33	-353.39	231.32	-361.62
1973	87.16	-169.56	193.66	-56.7	-412.09	-440.63	103.05	108.64	190.21	-581.65	302.3	-497.33
1974	211.15	-315.86	542.65	-43.39	-387.74	-420.02	235.67	243.21	446.82	-703.6	785.86	-463.41
1975	301.84	-143.56	876.95	-60.99	-604.44	-648.07	174.51	177.11	476.35	-748	1054.06	-709.06
1976	0	-658.7	4.77	-389.12	-277.95	-290.44	442.86	446.17	442.86	-936.65	450.94	-679.56
1977	0	-501.09	48.06	-227.65	-395.92	-434.19	127	130.02	127	-897.01	178.08	-661.84
1978	6.94	-397.36	150.54	-108.12	-379.65	-412.96	103.56	106.65	110.5	-777.01	257.19	-521.08
1979	0	-463.88	102.95	-59.71	-377.78	-429.82	78.26	81.62	78.26	-841.66	184.57	-489.53
1980	91.39	-135.93	546.15	0	-180.2	-200.98	817.53	846.99	908.92	-316.13	1393.14	-200.98
1981	0	-211.61	366.48	-31.79	-191.98	-216.98	687.09	706.89	687.09	-403.59	1073.37	-248.77
1982	0	-615.15	0	-186.22	-161.06	-182.21	714.47	720.04	714.47	-776.21	720.04	-368.43
1983	0	-626.47	6.44	-221.54	-129.17	-147.47	549.12	559.32	549.12	-755.64	565.76	-369.01
1984	0	-344.99	28.39	-13.46	-70.28	-84.03	321.28	331.5	321.28	-415.27	359.89	-97.49

Appendix Table A6.6 cont'd

	All Products and Inputs						Proportion to GVA crops/livestock (%)					
	Direct			Total			Direct			Total		
	+	-	net	+	-	net	+	-	net	+	-	net
1971	3229.3	-1973.61	1255.69	2394.88	-2778.74	-383.86	11.02	-6.73	4.28	8.17	-9.48	-1.31
1972	1913.54	-1800.32	113.22	543.79	-3126.39	-2582.6	6.22	-5.85	0.37	1.77	-10.17	-8.40
1973	855.48	-5186.73	-4331.25	302.3	-9321.95	-9019.65	2.68	-16.27	-13.59	0.95	-29.25	-28.30
1974	446.82	-10156.6	-9709.8	785.86	-21735.48	-20949.62	1.30	-29.55	-28.25	2.29	-63.23	-60.95
1975	476.35	-10079.7	-9603.38	1054.06	-14689.28	-13635.22	1.28	-27.01	-25.74	2.82	-39.37	-36.54
1976	1575.04	-2549.48	-974.44	450.94	-6472.84	-6021.9	3.93	-6.37	-2.43	1.13	-16.16	-15.04
1977	867.03	-4380.76	-3513.73	178.08	-9405.92	-9227.84	2.05	-10.38	-8.32	0.42	-22.28	-21.86
1978	855.08	-3436.04	-2580.96	257.19	-10398.82	-10141.63	1.92	-7.73	-5.81	0.58	-23.39	-22.81
1979	1566.75	-1409.19	157.56	184.57	-10460.41	-10275.84	3.30	-2.97	0.33	0.39	-22.06	-21.67
1980	1401.3	-6359.37	-4958.07	1393.14	-18606.71	-17213.57	2.80	-12.70	-9.90	2.78	-37.17	-34.38
1981	1156.79	-5649.81	-4493.02	1073.37	-12184.19	-11110.82	2.21	-10.80	-8.59	2.05	-23.29	-21.24
1982	2534.74	-3291.06	-756.32	1315.53	-5811.18	-4495.65	4.64	-6.03	-1.39	2.41	-10.64	-8.23
1983	1393.76	-1581.88	-188.12	684.98	-5752.58	-5067.6	2.64	-3.00	-0.36	1.30	-10.91	-9.61
1984	958.35	-2415.94	-1457.59	403.47	-10153.8	-9750.33	1.74	-4.40	-2.65	0.73	-18.48	-17.74

Appendix Table A6.7  
 Nominal Transfers Due to Value Added and Non-Allocatable Inputs  
 (Million Pesos at 1982 prices)  
 Sugar Border Price is ISO

	DIRECT TRANSFERS					All Products		TOTAL TRANSFERS					All Products	
	Rice-Irr	Rice-Rf	Corn	Sugar	Coconut	+	-	Rice-Irr	Rice-Rf	Corn	Sugar	Coconut	+	-
1971	1591.31	1314.06	420.04	777.83	-631	4103.24	-631	1222.18	1007.62	-238.09	440.28	-1775.23	2670.08	-2013.32
1972	623.1	546.73	512.27	-350.01	-648.33	1682.11	-998.34	170.94	147.03	155.57	-1118.48	-1455.24	473.53	-2573.72
1973	-2088.56	-1706.6	-17.85	-1264.26	528.99	528.99	-4530.43	-2841.65	-2321.59	-476.05	-2158.24	-278.9	0	-8076.42
1974	-2203.8	-1823.74	-71.41	-6786.96	-1953.72	0	-12839.6	-3303.52	-2731.98	-919.35	-9533.42	-4321.32	0	-20809.6
1975	-586.09	-485.17	-63.27	-3244.25	-1837.14	0	-6215.91	-1523.27	-1261.55	-1256	-6001.98	-3379.47	0	-13422.28
1976	427.17	353.76	254.95	-387.77	-238.08	1035.88	-625.85	-343.7	-284.86	-762.45	-1917.54	-1773.59	0	-5082.14
1977	-296.03	-237.01	454.05	193.83	-2203.73	647.89	-2736.77	-1281.55	-1025.62	-333.36	-624.51	-4908.73	0	-8173.77
1978	-673.5	-516.31	349.8	395.23	-1467.09	745.03	-2656.9	-1822.63	-1397.56	-568.16	-257.46	-4948.2	0	-8994.01
1979	-339.09	-252.57	362.34	538.76	-46.49	901.11	-638.14	-1390.21	-1034.13	-475.18	-212.14	-5719.18	0	-8830.83
1980	-921.06	-651.21	276.2	-3455.52	-3791.56	276.2	-8819.35	-2119.28	-1497.68	-879.6	-5886.19	-7095.48	0	-17478.22
1981	-757.88	-500.09	266.83	-704.59	-2375.25	266.83	-4337.82	-1927.76	-1272.09	-1076.01	-2054.29	-4730.78	0	-11060.94
1982	602.26	333.37	638.18	1350.15	-2145.61	2923.96	-2145.61	-256.55	-143.37	-384.45	677.63	-4211.92	677.63	-4996.3
1983	180.78	95.95	369.17	1132.83	-318.22	1778.74	-318.22	-762.84	-407.89	-914.34	193.2	-2488.13	193.2	-4573.19
1984	61.17	31.85	347.28	830.51	-1977.94	1270.81	-1977.94	-906.14	-487.29	-1035.49	136.67	-6398.6	136.67	-8827.52

Appendix Table A6.7 cont'd

	Fertilizers				4-wheeled Tractors		Credit		All Inputs			
	Direct		Total		Direct	Total	Direct	Total	Direct		Total	
	+	-	+	-	-	-	+	+	+	-	+	-
1971	82.85	-71.37	249.22	-46.07	-46.95	-23.34			82.85	-118.32	249.22	-69.41
1972	51.16	-50.63	205.28	-31.58	-79.03	-58.13			51.16	-129.66	205.28	-89.71
1973	92.91	-146.15	169.87	-68.84	-107.25	-92.64	103	108.6	195.91	-253.4	278.47	-161.48
1974	246.23	-246	564.65	-41.98	-106.81	-82.33	235.42	243	481.65	-352.81	807.65	-124.31
1975	343.1	-130.26	899.81	-59.31	-291.48	-254.15	174.89	177.36	517.99	-421.74	1077.17	-313.46
1976	0	-671.79	1.03	-409.13	-199.55	-188.68	443.96	446.93	443.96	-871.34	447.96	-597.81
1977	0	-503.89	41.81	-258.49	-158.05	-126.1	127.57	130.48	127.57	-661.94	172.29	-384.59
1978	7.09	-397.35	113.71	-119.2	-189.05	-164.15	103.73	106.79	110.82	-586.4	220.5	-283.35
1979	0	-451.82	63.47	-84.26	-107.09	-65.43	78.17	81.49	78.17	-558.91	144.96	-149.69
1980	100.04	-118.91	509.52	0	-64.97	-48.7	814.35	844.61	914.39	-183.88	1354.13	-48.7
1981	0	-188.92	346.23	-37.39	-50.84	-29.24	688.64	707.9	688.64	-239.76	1054.13	-66.63
1982	0	-655.47	0	-235.23	-42.62	-21.94	723.23	726.37	723.23	-698.09	726.37	-257.17
1983	0	-637.96	0	-257.92	-20.16	-3.12	553.15	562.26	553.15	-658.12	562.26	-261.04
1984	0	-353.43	0	-37.97	15.47	28.38	323.69	333.32	323.69	-337.96	333.32	-9.59

Appendix Table A6.7 cont'd

	All Products and Inputs						Proportion to GVA crops/livestock (%)					
	Direct			Total			Direct			Total		
	+	-	net	+	-	net	+	-	net	+	-	net
1971	4186.09	-749.32	3436.77	2919.3	-2082.73	836.57	14.28	-2.56	11.72	9.96	-7.10	2.85
1972	1733.27	-1128	605.27	678.81	-2563.43	-1984.62	5.64	-3.67	1.97	2.21	-8.66	-6.45
1973	724.9	-4783.83	-4058.93	278.47	-8237.9	-7959.43	2.27	-15.01	-12.73	0.87	-25.84	-24.97
1974	481.65	-13192.4	-12710.7	807.65	-20933.91	-20126.26	1.40	-38.38	-36.98	2.35	-60.90	-58.55
1975	517.99	-6637.65	-6119.66	1077.17	-13735.74	-12658.57	1.39	-17.79	-16.40	2.89	-36.81	-33.93
1976	1479.84	-1497.19	-17.35	447.96	-5679.95	-5231.99	3.69	-3.74	-0.04	1.12	-14.18	-13.06
1977	775.46	-3398.71	-2623.25	172.29	-8558.36	-8386.07	1.84	-8.05	-6.22	0.41	-20.28	-19.87
1978	855.85	-3243.3	-2387.45	220.5	-9277.36	-9056.86	1.93	-7.30	-5.37	0.50	-20.87	-20.37
1979	979.28	-1197.05	-217.77	144.96	-8980.52	-8835.56	2.07	-2.52	-0.46	0.31	-18.94	-18.64
1980	1190.59	-9003.23	-7812.64	1354.13	-17526.92	-16172.79	2.38	-17.98	-15.60	2.70	-35.01	-32.30
1981	955.47	-4577.58	-3622.11	1054.13	-11127.57	-10073.44	1.83	-8.75	-6.92	2.01	-21.27	-19.26
1982	3647.19	-2843.7	803.49	1404	-5253.47	-3849.47	6.68	-5.21	1.47	2.57	-9.62	-7.05
1983	2331.89	-976.34	1355.55	755.46	-4834.23	-4078.77	4.42	-1.85	2.57	1.43	-9.17	-7.74
1984	1594.5	-2315.9	-721.4	469.99	-8837.11	-8367.12	2.90	-4.21	-1.31	0.86	-16.08	-15.23

Appendix Table A6.8  
 Real Transfers Due to Value Added and Non-Allocatable Inputs  
 (Million Pesos at 1982 prices)  
 Sugar Border Price is ISO

	DIRECT REAL TRANSFERS					All Products		TOTAL REAL TRANSFERS					All Products	
	Rice-Irr	Rice-Rf	Corn	Sugar	Coconut	+	-	Rice-Irr	Rice-Rf	Corn	Sugar	Coconut	+	-
1971	1445.23	1059.83	576.56	650.85	-785.75	3732.47	-785.75	1032.13	755.32	-515.31	-275.09	-1976.55	2062.54	-2491.8
1972	583.25	467.8	796.7	-397.05	-682.2	1847.75	-1079.25	72.34	54.87	177.82	-1234.87	-1539.04	305.03	-2773.9
1973	-2021.96	-1657.59	18.89	-1183.2	649.97	668.86	-4862.75	-2920.95	-2394.05	-824.61	-2254.77	-422.97	0	-8817.3
1974	-2084.87	-1759.78	0.16	-6617.22	-1673.78	0.16	-12135.6	-3274.6	-2761.59	-1454.78	-9492.15	-4253.24	0	-21236.3
1975	-518.74	-425.26	-33.17	-3119.87	-1772.17	0	-5869.21	-1495.6	-1226.76	-1997.51	-5950.88	-3352.77	0	-14023.5
1976	397.87	326.28	390.69	-430	-271.81	1114.83	-701.81	-393.05	-322.57	-1295.85	-1988.68	-1830.4	0	-5830.5
1977	-310.95	-248.95	730.83	180.36	-2228.04	911.19	-2787.94	-1366.6	-1093.67	-623.54	-701.26	-5047.29	0	-8208.8
1978	-676.72	-530.96	570.47	392.45	-1474.72	962.92	-2682.4	-1910.68	-1499.51	-1012.72	-333.4	-5157	0	-9913.3
1979	-318.28	-242.67	612.47	560.07	47.48	1220.02	-560.95	-1483.18	-1129.17	-861.48	-307.36	-6139.04	0	-9920.2
1980	-871.2	-631.53	499.95	-3401.91	-3710.89	499.95	-8615.53	-2163.43	-1567.4	-1483.72	-5933.65	-7166.89	0	-18315.0
1981	-726.33	-478.49	465.12	-672.68	-2336.7	465.12	-4214.2	-1974.99	-1301.12	-1805.41	-2102.08	-4788.51	0	-11972.1
1982	510.02	271.08	974.73	1260.35	-2229.5	3016.18	-2229.5	-362.52	-194.21	-712.36	574.47	-4308.29	574.47	-5577.3
1983	146.55	74.62	575.68	1096.75	-369.77	1893.6	-369.77	-848.68	-435.84	-1572.96	102.71	-2617.41	102.71	-5474.8
1984	22.36	10.6	532.83	800.97	-2086.57	1366.76	-2086.57	-1046.65	-540.52	-1829.6	29.73	-6791.88	29.73	-10208.6

Appendix Table A6.8 cont'd

	Fertilizers				4-wheeled Tractors		Credit		All Inputs			
	Direct		Total		Direct	Total	Direct	Total	Direct		Total	
	+	-	+	-	-	-	+	+	+	-	+	-
1971	109.61	-58.37	286.64	-39.92	-278.96	-304.71			109.61	-337.33	286.64	-344.63
1972	57.18	-44.36	226.47	-28.32	-308.52	-333.38			57.18	-352.88	226.47	-361.7
1973	86.97	-170.03	187.02	-56.81	-412	-440.58	103	108.6	189.97	-582.03	295.62	-497.39
1974	209.97	-317.39	544.19	-43.49	-387.59	-419.87	235.42	243	445.39	-704.98	787.19	-463.36
1975	306.03	-142.7	884.58	-60.85	-604.78	-648.35	174.89	177.36	480.92	-747.48	1061.94	-709.2
1976	0	-656.51	5.21	-392.4	-278.05	-290.53	443.96	446.93	443.96	-934.56	452.14	-682.93
1977	0	-496.55	49.17	-230.85	-396.46	-434.76	127.57	130.48	127.57	-893.01	179.65	-665.61
1978	7.42	-395.84	152.41	-115.99	-379.91	-413.13	103.73	106.79	111.15	-775.65	259.2	-529.12
1979	0	-465.5	101.06	-70.14	-377.61	-429.53	78.17	81.49	78.17	-843.11	182.55	-499.67
1980	88.77	-139.56	535.23	0	-179.98	-200.76	814.35	844.61	903.12	-319.54	1379.84	-200.76
1981	0	-208.16	364.29	-31.31	-192.14	-217.11	688.64	707.9	688.64	-400.3	1072.19	-248.42
1982	0	-600.15	0	-182.71	-161.8	-182.93	723.23	726.37	723.23	-761.95	726.37	-365.64
1983	0	-617.45	8.22	-223.54	-129.57	-147.85	553.15	562.26	553.15	-747.02	570.48	-371.39
1984	0	-336.58	25.57	-14.25	-70.6	-84.34	323.69	333.32	323.69	-407.18	358.89	-98.59

Appendix Table A6.8' cont'd

	All Products and Inputs						Proportion to BVA crops/livestock (%)					
	Direct			Total			Direct			Total		
	+	-	net	+	-	net	+	-	net	+	-	net
1971	3842.08	-1123.08	2719	2349.18	-2836.49	-487.31	13.11	-3.83	9.27	8.01	-9.68	-1.66
1972	1904.93	-1432.13	472.8	531.5	-3135.61	-2604.11	6.19	-4.66	1.54	1.73	-10.20	-8.47
1973	858.83	-5444.78	-4585.95	295.62	-9314.74	-9019.12	2.69	-17.08	-14.39	0.93	-29.22	-28.30
1974	445.55	-12840.6	-12395.0	787.19	-21699.72	-20912.53	1.30	-37.36	-36.06	2.29	-63.13	-60.84
1975	480.92	-6616.69	-6135.77	1061.94	-14732.72	-13670.78	1.29	-17.73	-16.44	2.85	-39.48	-36.64
1976	1558.79	-1636.37	-77.58	452.14	-6513.48	-6061.34	3.89	-4.09	-0.19	1.13	-16.26	-15.13
1977	1038.76	-3680.95	-2642.19	179.65	-8874.43	-8694.78	2.46	-8.72	-6.26	0.43	-21.03	-20.60
1978	1074.07	-3458.05	-2383.98	259.2	-10442.43	-10183.23	2.42	-7.78	-5.36	0.58	-23.49	-22.91
1979	1298.19	-1404.06	-105.87	182.55	-10419.9	-10237.35	2.74	-2.96	-0.22	0.39	-21.98	-21.59
1980	1403.07	-8935.07	-7532	1379.84	-18515.85	-17136.01	2.80	-17.85	-15.04	2.76	-36.98	-34.23
1981	1153.76	-4614.5	-3460.74	1072.19	-12220.53	-11148.34	2.21	-8.82	-6.62	2.05	-23.36	-21.31
1982	3739.41	-2991.45	747.96	1300.84	-5943.02	-4642.18	6.85	-5.48	1.37	2.38	-10.89	-8.50
1983	2446.75	-1116.79	1329.96	673.19	-5846.28	-5173.09	4.64	-2.12	2.52	1.28	-11.09	-9.81
1984	1690.45	-2493.75	-803.3	388.62	-10307.24	-9918.62	3.08	-4.54	-1.46	0.71	-18.76	-18.05

Appendix Table A7.1a  
Instantaneous Income Effects of Price Interventions  
as Percent Share of No-intervention Income: RICE

	PHIL	ILOCOS	CAGAYAN VALLEY	CENTRAL LUZON	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	CENTRAL VISAYAS	EASTERN VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO
A. DIRECT Nominal												
1971-74	-0.39	1.57	-1.33	-1.06	-0.10	-1.13	-0.43	-0.11	-0.35	-0.65	-0.23	-0.31
1975-79	-0.19	0.95	-0.74	-0.44	-0.05	-0.46	-0.26	-0.04	-0.21	-0.25	-0.13	-0.14
1980-84	-0.10	0.88	-0.31	-0.17	-0.02	-0.23	-0.20	-0.04	-0.12	-0.12	-0.08	-0.11
1971-84	-0.22	1.10	-0.76	-0.52	-0.05	-0.57	-0.29	-0.06	-0.22	-0.32	-0.14	-0.18
B. DIRECT Real												
1971-74	0.07	1.99	-1.02	-0.68	0.39	-0.73	0.02	0.38	0.10	-0.19	0.24	0.16
1975-79	0.32	1.47	-0.24	0.07	0.46	0.04	0.25	0.47	0.30	0.26	0.38	0.37
1980-84	-0.02	0.96	-0.24	-0.09	0.06	-0.15	-0.12	0.05	-0.04	-0.04	0.00	-0.03
1971-84	0.12	1.44	-0.46	-0.20	0.30	-0.25	0.05	0.29	0.12	0.02	0.20	0.17
C. TOTAL Nominal												
1971-74	-0.92	0.70	-3.46	-2.33	-0.25	-2.26	-0.98	-0.25	-0.91	-1.19	-0.62	-0.66
1975-79	-0.82	0.01	-3.13	-1.81	-0.21	-1.97	-1.10	-0.20	-0.90	-1.05	-0.57	-0.60
1980-84	-0.57	0.10	-1.83	-1.10	-0.12	-1.27	-1.00	-0.17	-0.77	-0.58	-0.46	-0.58
1971-84	-0.76	0.24	-2.76	-1.71	-0.19	-1.80	-1.03	-0.20	-0.86	-0.92	-0.55	-0.61
D. TOTAL Real												
1971-74	-3.41	-1.85	-5.97	-4.83	-2.74	-4.74	-3.46	-2.73	-3.40	-3.67	-3.11	-3.14
1975-79	-2.62	-1.80	-4.89	-3.59	-2.02	-3.75	-2.89	-2.00	-2.69	-2.84	-2.37	-2.40
1980-84	-2.88	-2.23	-4.11	-3.40	-2.44	-3.56	-3.30	-2.48	-3.07	-2.89	-2.77	-2.88
1971-84	-2.94	-1.97	-4.92	-3.88	-2.37	-3.96	-3.20	-2.38	-3.03	-3.09	-2.72	-2.78

Appendix Table A7.1b  
Instantaneous Income Effects of Price Interventions  
as Percent Share of Actual Income: RICE

	PHIL	ILOCOS	CAGAYAN VALLEY	CENTRAL LUZON	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	CENTRAL VISAYAS	EASTERN VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO
<b>A. DIRECT Nominal</b>												
1971-74	-0.41	1.46	-1.75	-1.22	-0.10	-1.24	-0.46	-0.11	-0.38	-0.68	-0.25	-0.32
1975-79	-0.19	0.94	-0.76	-0.44	-0.05	-0.47	-0.26	-0.04	-0.21	-0.25	-0.13	-0.14
1980-84	-0.11	0.87	-0.32	-0.17	-0.02	-0.23	-0.20	-0.04	-0.12	-0.12	-0.08	-0.11
1971-84	-0.22	1.07	-0.89	-0.57	-0.05	-0.61	-0.30	-0.06	-0.23	-0.33	-0.15	-0.18
<b>B. DIRECT Real</b>												
1971-74	0.05	1.95	-1.15	-0.69	0.33	-0.74	0.00	0.32	0.08	-0.22	0.20	0.12
1975-79	0.31	1.44	-0.25	0.06	0.45	0.04	0.24	0.45	0.29	0.25	0.37	0.36
1980-84	-0.03	0.95	-0.24	-0.10	0.05	-0.16	-0.13	0.03	-0.04	-0.05	-0.01	-0.04
1971-84	0.11	1.41	-0.50	-0.21	0.27	-0.25	0.04	0.26	0.11	0.01	0.19	0.15
<b>C. TOTAL Nominal</b>												
1971-74	-0.96	0.61	-4.07	-2.57	-0.26	-2.44	-1.01	-0.25	-0.95	-1.23	-0.64	-0.67
1975-79	-0.83	0.01	-3.25	-1.85	-0.21	-2.02	-1.11	-0.20	-0.91	-1.06	-0.57	-0.60
1980-84	-0.58	0.09	-1.88	-1.12	-0.12	-1.29	-1.02	-0.17	-0.78	-0.59	-0.46	-0.58
1971-84	-0.78	0.21	-2.99	-1.79	-0.19	-1.88	-1.05	-0.20	-0.87	-0.94	-0.55	-0.61
<b>D. TOTAL Real</b>												
1971-74	-3.54	-1.91	-6.63	-5.14	-2.85	-5.03	-3.60	-2.84	-3.53	-3.82	-3.23	-3.26
1975-79	-2.71	-1.86	-5.17	-3.75	-2.09	-3.92	-3.00	-2.07	-2.79	-2.95	-2.46	-2.48
1980-84	-2.97	-2.28	-4.30	-3.52	-2.50	-3.70	-3.42	-2.55	-3.17	-2.98	-2.85	-2.97
1971-84	-3.04	-2.03	-5.28	-4.07	-2.45	-4.16	-3.32	-2.46	-3.14	-3.21	-2.82	-2.88

Appendix Table A7.1c  
Short Run Direct and Cumulative Total Income Effects  
of Price Interventions by Region: RICE (in %)

	PHIL	ILOCOS	CAGAYAN	CENTRAL	SOUTHERN	BICOL	WESTERN	CENTRAL	EASTERN	WESTERN	NORTHERN	SOUTHERN
		VALLEY	VALLEY	LUZON	TAGALOG		VISAYAS	VISAYAS	VISAYAS	MINDANAO	MINDANAO	MINDANAO
<b>A. As a Ratio of No-intervention Income</b>												
1. Short Run Direct												
1971-74	0.07	2.01	-1.00	-0.74	0.39	-0.73	0.02	0.38	0.11	-0.22	0.23	0.16
1975-79	0.23	1.35	-0.57	-0.12	0.44	-0.15	0.15	0.45	0.21	0.16	0.32	0.31
1980-84	-0.07	0.90	-0.36	-0.17	0.05	-0.24	-0.20	0.03	-0.09	-0.08	-0.03	-0.07
1971-84	0.08	1.38	-0.62	-0.31	0.29	-0.35	-0.01	0.28	0.08	-0.04	0.17	0.13
2. Cumulative Total												
1971	-3.79	-0.58	-2.22	-4.46	-3.18	-3.83	-4.53	-3.71	-4.03	-3.98	-4.31	-3.18
1974	-2.10	-2.11	-10.96	-7.06	0.13	-5.90	-2.23	0.09	-1.95	-2.50	-1.25	-1.03
1979	-4.46	-4.07	-7.02	-5.52	-3.71	-5.63	-4.96	-3.68	-4.62	-4.83	-4.17	-4.28
1984	-3.98	-3.30	-5.13	-4.34	-3.58	-4.75	-4.38	-3.60	-4.40	-4.01	-3.89	-4.02
<b>B. As a Ratio of Actual Income</b>												
1. Short Run Direct												
1971-74	0.05	1.97	-1.16	-0.75	0.33	-0.74	0.00	0.32	0.10	-0.24	0.20	0.12
1975-79	0.23	1.33	-0.57	-0.12	0.42	-0.16	0.14	0.43	0.20	0.15	0.31	0.30
1980-84	-0.07	0.88	-0.37	-0.18	0.04	-0.25	-0.20	0.02	-0.09	-0.09	-0.04	-0.08
1971-84	0.07	1.35	-0.67	-0.32	0.26	-0.36	-0.02	0.25	0.07	-0.05	0.15	0.11
2. Cumulative Total												
1971	-3.94	-0.58	-0.34	-2.27	-4.67	-3.29	-3.99	-4.75	-3.85	-4.20	-4.15	-4.50
1974	-2.14	-2.15	-12.31	-7.60	-0.13	-6.27	-2.28	0.09	-1.99	-2.57	-1.27	-1.04
1979	-4.67	-4.24	-7.55	-5.85	-3.85	-5.97	-5.22	-3.82	-4.84	-5.07	-4.36	-4.48
1984	-4.15	-3.41	-5.41	-4.53	-3.72	-4.99	-4.58	-3.74	-4.61	-4.18	-4.04	-4.18

Appendix Table A7.2a  
Instantaneous Income Effects of Price Interventions  
as Percent Share of No-intervention Income: CORN

	PHIL	CAGAYAN VALLEY	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	CENTRAL VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO	CENTRAL MINDANAO
<b>A. DIRECT Nominal</b>										
1971-74	0.11	0.31	0.03	0.09	0.05	0.13	0.18	0.23	0.79	
1975-79	0.10	0.33	0.03	0.10	0.05	0.05	0.10	0.07	0.54	0.79
1980-84	0.11	0.24	0.03	0.12	0.02	0.07	0.13	0.16	0.78	0.93
1971-84	0.11	0.29	0.03	0.10	0.04	0.08	0.14	0.15	0.70	0.87
<b>B. DIRECT Real</b>										
1971-74	0.61	0.79	0.53	0.58	0.55	0.63	0.68	0.72	1.27	
1975-79	0.61	0.84	0.54	0.62	0.56	0.56	0.62	0.59	1.05	0.78
1980-84	0.20	0.32	0.11	0.21	0.10	0.16	0.21	0.24	0.86	1.02
1971-84	0.46	0.64	0.38	0.46	0.39	0.44	0.49	0.50	1.05	0.91
<b>C. TOTAL Nominal</b>										
1971-74	-0.17	-0.66	-0.04	-0.18	-0.08	-0.17	-0.24	-0.40	-1.27	
1975-79	-0.26	-0.72	-0.07	-0.25	-0.12	-0.22	-0.28	-0.28	-1.50	-1.40
1980-84	-0.25	-0.54	-0.06	-0.28	-0.04	-0.16	-0.29	-0.37	-1.74	-2.03
1971-84	-0.23	-0.64	-0.06	-0.24	-0.08	-0.18	-0.27	-0.35	-1.52	-1.75
<b>D. TOTAL Real</b>										
1971-74	-2.65	-3.13	-2.52	-2.66	-2.55	-2.65	-2.72	-2.88	-3.74	
1975-79	-2.07	-2.52	-1.88	-2.06	-1.93	-2.03	-2.09	-2.09	-3.30	-3.91
1980-84	-2.56	-2.84	-2.38	-2.59	-2.35	-2.47	-2.60	-2.68	-4.02	-4.30
1971-84	-2.41	-2.81	-2.24	-2.42	-2.26	-2.36	-2.45	-2.52	-3.68	-4.12

Appendix Table A7.2b  
Instantaneous Income Effects of Price Interventions  
as Percent Share of Actual Income: CORN

	PHIL	CAGAYAN VALLEY	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	CENTRAL VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO	CENTRAL MINDANAO
<b>A. DIRECT Nominal</b>										
1971-74	0.11	0.30	0.03	0.08	0.05	0.13	0.18	0.23	0.78	
1975-79	0.10	0.33	0.03	0.10	0.05	0.05	0.10	0.07	0.54	0.78
1980-84	0.11	0.24	0.03	0.12	0.02	0.07	0.13	0.16	0.77	0.92
1971-84	0.11	0.29	0.03	0.10	0.04	0.08	0.13	0.15	0.69	0.86
<b>B. DIRECT Real</b>										
1971-74	0.53	0.73	0.44	0.50	0.47	0.55	0.60	0.65	1.21	
1975-79	0.59	0.83	0.52	0.60	0.54	0.55	0.60	0.57	1.03	0.77
1980-84	0.18	0.31	0.10	0.19	0.09	0.14	0.20	0.23	0.84	1.00
1971-84	0.43	0.61	0.35	0.43	0.36	0.40	0.46	0.47	1.02	0.90
<b>C. TOTAL Nominal</b>										
1971-74	-0.17	-0.67	-0.04	-0.18	-0.08	-0.17	-0.24	-0.40	-1.31	
1975-79	-0.26	-0.73	-0.07	-0.26	-0.12	-0.22	-0.28	-0.28	-1.53	-1.42
1980-84	-0.25	-0.54	-0.06	-0.28	-0.04	-0.16	-0.29	-0.37	-1.78	-2.07
1971-84	-0.23	-0.64	-0.06	-0.24	-0.08	-0.18	-0.27	-0.35	-1.56	-1.78
<b>D. TOTAL Real</b>										
1971-74	-2.76	-3.26	-2.63	-2.77	-2.67	-2.76	-2.84	-3.00	-3.91	
1975-79	-2.13	-2.60	-1.94	-2.13	-2.00	-2.09	-2.15	-2.15	-3.41	-4.07
1980-84	-2.64	-2.93	-2.44	-2.66	-2.41	-2.54	-2.68	-2.76	-4.20	-4.50
1971-84	-2.49	-2.91	-2.32	-2.50	-2.34	-2.44	-2.54	-2.61	-3.84	-4.31

Appendix Table A7.2c  
Short Run Direct and Cumulative Total Income Effects  
of Price Interventions by Region: CORN (in %)
 

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	PHIL	CAGAYAN VALLEY	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	CENTRAL VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO	CENTRAL MINDANAO
A. As a Ratio of No-intervention Income										
1. Short Run Direct										
1971-74	0.63	0.87	0.53	0.61	0.56	0.65	0.71	0.77	1.42	
1975-79	0.62	0.87	0.54	0.63	0.56	0.57	0.63	0.59	1.10	0.88
1980-84	0.22	0.36	0.12	0.23	0.10	0.17	0.24	0.27	1.00	1.16
1971-84	0.48	0.69	0.39	0.48	0.40	0.45	0.51	0.53	1.15	1.04
2. Cumulative Total										
1971	-4.96	-5.30	-4.83	-4.92	-4.88	-4.98	-5.07	-5.14	-6.03	
1974	0.44	-1.17	0.80	0.41	0.72	0.50	0.29	-0.25	-2.82	-4.39
1979	-3.63	-3.90	-3.52	-3.64	-3.55	-3.57	-3.64	-3.58	-4.33	-4.56
1984	-3.79	-4.15	-3.52	-3.87	-3.52	-3.68	-3.88	-3.94	-6.69	-5.87
B. As a Ratio of Actual Income										
1. Short Run Direct										
1971-74	0.55	0.80	0.45	0.52	0.47	0.57	0.63	0.69	1.36	
1975-79	0.60	0.85	0.53	0.61	0.55	0.55	0.61	0.57	1.08	0.86
1980-84	0.20	0.35	0.10	0.21	0.09	0.15	0.22	0.26	0.98	1.14
1971-84	0.44	0.66	0.35	0.44	0.36	0.41	0.48	0.50	1.12	1.02
2. Cumulative Total										
1971	-5.22	-5.60	-5.07	-5.18	-5.14	-5.24	-5.34	-5.42	-6.42	
1974	0.43	-1.19	0.79	0.40	0.72	0.50	0.29	-0.25	-2.90	-4.59
1979	-3.77	-4.06	-3.64	-3.78	-3.68	-3.70	-3.78	-3.72	-4.53	-4.77
1984	-3.94	-4.32	-3.65	-4.03	-3.65	-3.83	-4.04	-4.10	-7.17	-6.24

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Appendix Table A7.3a  
Instantaneous Income Effects of Price Interventions  
as Percent Share of No-intervention Income: SUGAR

	PHIL	CENTRAL LUZON	SOUTHERN TAGALOG	WESTERN VISAYAS	EASTERN VISAYAS	NORTHERN MINDANAO	SOUTHERN MINDANAO	CENTRAL MINDANAO
<b>A. DIRECT Nominal</b>								
1971-74	-0.79	-0.68	-0.14	-4.51	-0.73		-0.13	
1975-79	-0.66	-0.56	-0.12	-3.47	-1.04	0.02	-0.21	0.02
1980-84	-0.20	-0.10	-0.05	-1.51	-0.24	-0.17	-0.03	-0.10
1971-84	-0.53	-0.43	-0.10	-3.07	-0.67	-0.09	-0.12	-0.05
<b>B. DIRECT Real</b>								
1971-74	-0.30	-0.19	0.36	-4.10	-0.26		0.37	
1975-79	-0.16	-0.06	0.39	-3.03	-0.55	0.01	0.30	0.25
1980-84	-0.12	-0.02	0.04	-1.44	-0.16	-0.09	0.05	-0.02
1971-84	-0.19	-0.08	0.26	-2.77	-0.33	-0.04	0.23	0.08
<b>C. TOTAL Nominal</b>								
1971-74	-1.20	-1.35	-0.20	-6.81	-1.00		-0.18	
1975-79	-1.18	-1.27	-0.21	-6.41	-1.66	-0.05	-0.37	-0.02
1980-84	-0.51	-0.48	-0.11	-3.73	-0.65	-0.43	-0.08	-0.25
1971-84	-0.95	-1.01	-0.17	-5.56	-1.11	-0.26	-0.21	-0.16
<b>D. TOTAL Real</b>								
1971-74	-3.66	-3.81	-2.68	-9.20	-3.48		-2.66	
1975-79	-2.99	-3.08	-2.02	-8.22	-3.48	-2.59	-2.18	-2.91
1980-84	-2.82	-2.79	-2.43	-5.97	2.95	-2.73	-2.40	-2.56
1971-84	-3.12	-3.19	-2.36	-7.69	-3.29	-2.67	-2.40	-2.69

Appendix Table A7.3b  
Instantaneous Income Effects of Price Interventions  
as Percent Share of Actual Income: SUGAR

	PHIL	CENTRAL LUZON	SOUTHERN TAGALOG	WESTERN VISAYAS	EASTERN VISAYAS	NORTHERN MINDANAO	SOUTHERN MINDANAO	CENTRAL MINDANAO
<b>A. DIRECT Nominal</b>								
1971-74	-0.80	-0.69	-0.14	-4.86	-0.75		-0.13	
1975-79	-0.68	-0.57	-0.12	-4.03	-1.08	0.02	-0.21	0.02
1980-84	-0.20	-0.10	-0.05	-1.56	-0.24	-0.17	-0.03	-0.10
1971-84	-0.54	-0.44	-0.10	-3.38	-0.69	-0.09	-0.12	-0.05
<b>B. DIRECT Real</b>								
1971-74	-0.37	-0.26	0.28	-4.34	-0.31		0.29	
1975-79	-0.17	-0.06	0.38	-3.45	-0.56	0.01	0.29	0.25
1980-84	-0.13	-0.03	0.02	-1.47	-0.17	-0.10	0.04	-0.03
1971-84	-0.21	-0.11	0.22	-3.00	-0.35	-0.05	0.20	0.08
<b>C. TOTAL Nominal</b>								
1971-74	-1.22	-1.38	-0.20	-7.51	-1.03		-0.18	
1975-79	-1.22	-1.31	-0.21	-7.58	-1.75	-0.05	-0.37	-0.02
1980-84	-0.52	-0.49	-0.11	-3.91	-0.65	-0.43	-0.08	-0.25
1971-84	-0.97	-1.03	-0.17	-6.25	-1.15	-0.26	-0.21	-0.16
<b>D. TOTAL Real</b>								
1971-74	-3.83	-3.99	-2.80	-10.20	-3.62		-2.77	
1975-79	-3.09	-3.18	-2.08	-9.44	-3.62	-2.67	-2.24	-3.00
1980-84	-2.91	-2.87	-2.49	-6.36	-3.05	-2.81	-2.46	-2.63
1971-84	-3.23	-3.30	-2.43	-8.56	-3.41	-2.75	-2.47	-2.77

Appendix Table A7.3c  
Short Run Direct and Cumulative Total Income Effects  
of Price interventions by Region: SUGAR (in %)

	PHIL LUZON	CENTRAL TAGALOG	SOUTHERN VISAYAS	WESTERN VISAYAS	EASTERN VISAYAS	NORTHERN MINDANAO	SOUTHERN MINDANAO	CENTRAL MINDANAO
A. As a Ratio of No-intervention Income								
1. Short Run Direct								
1971-74	-0.46	-0.35	0.33	-4.95	-0.40		0.35	
1975-79	-0.47	-0.37	0.33	-4.62	-0.98	-0.01	0.20	0.25
1980-84	-0.17	-0.05	0.03	-1.76	-0.23	-0.12	0.04	-0.04
1971-84	-0.36	-0.25	0.22	-3.69	-0.54	-0.07	0.19	0.07
2. Cumulative Total								
1971	-5.52	-5.81	-4.90	-9.04	-4.91		-4.82	
1974	-2.19	-2.35	0.37	-15.40	-3.08	-1.60	0.25	-2.42
1979	-3.45	-3.43	-3.47	-3.39	-3.39	-3.45	-3.47	-3.47
1984	-3.78	-3.74	-3.53	-5.72	-3.96	-3.81	-3.52	-3.66
B. As a Ratio of Actual Income								
1. Short Run Direct								
1971-74	-0.52	-0.42	0.25	-5.28	-0.44		0.27	
1975-79	-0.48	-0.38	0.32	-5.43	-1.01	-0.01	0.20	0.24
1980-84	-0.18	-0.07	0.01	-1.81	-0.24	-0.13	0.03	-0.05
1971-84	-0.38	-0.28	0.19	-4.09	-0.58	-0.08	0.16	0.06
2. Cumulative Total								
1971	-5.84	-6.17	-5.15	-9.94	-5.17		-5.06	
1974	-2.24	-2.41	0.37	-18.21	-3.18	-1.63	0.25	-2.48
1979	-3.58	-3.56	-3.59	-3.51	-3.51	-3.58	-3.60	-3.59
1984	-3.93	-3.89	-3.66	-6.07	-4.12	-3.96	-3.65	-3.79

Appendix Table A7.4a  
Instantaneous Income Effects of Price Interventions  
as Percent Share of No-intervention Income: COPRA

	PHIL	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	EASTERN VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO
<b>A. DIRECT Nominal</b>								
1971-74	-0.33	-0.12	-0.44	-0.17	-1.31	-0.46	-1.53	-1.24
1975-79	-0.44	-0.22	-0.70	-0.18	-1.55	-1.39	-1.25	-1.18
1980-84	-0.64	-0.41	-1.08	-0.30	-2.16	-1.79	-1.04	-2.05
1971-84	-0.48	-0.26	-0.76	-0.22	-1.70	-1.27	-1.25	-1.51
<b>B. DIRECT Real</b>								
1971-74	-2.80	-2.60	-2.92	-2.65	-3.78	-2.94	-4.00	-3.70
1975-79	-2.25	-2.03	-2.50	-1.99	-3.34	-3.18	-3.05	-2.98
1980-84	-2.95	-2.72	-3.37	-2.61	-4.43	-4.07	-3.33	-4.32
1971-84	-2.66	-2.44	-2.93	-2.40	-3.85	-3.43	-3.42	-3.67
<b>C. TOTAL Nominal</b>								
1971-74	-0.92	-0.35	-1.04	-0.48	-3.63	-1.34	-4.26	-3.39
1975-79	-1.46	-0.82	-2.43	-0.57	-4.89	-4.45	-3.50	-3.77
1980-84	-1.45	-0.88	-2.34	-0.72	-4.91	-4.01	-2.25	-4.71
1971-84	-1.30	-0.71	-2.00	-0.59	-4.54	-3.40	-3.27	-4.00
<b>D. TOTAL Real</b>								
1971-74	-0.43	0.14	-0.56	0.02	-3.15	-0.86	-3.82	-2.91
1975-79	-0.96	-0.31	-1.93	-0.06	-4.41	-3.96	-3.02	-3.28
1980-84	-1.37	-0.80	-2.26	-0.63	-4.84	-3.93	-2.17	-4.64
1971-84	-0.95	-0.36	-1.65	-0.24	-4.20	-3.06	-2.95	-3.66

Appendix Table A7.4b  
Instantaneous Income Effects of Price Interventions  
as Percent Share of Actual Income: COPRA

	PHIL TAGALOG	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	EASTERN VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO
<b>A. DIRECT Nominal</b>								
1971-74	-0.33	-0.12	-0.44	-0.17	-1.36	-0.47	-1.60	-1.27
1975-79	-0.45	-0.22	-0.71	-0.18	-1.59	-1.42	-1.28	-1.21
1980-84	-0.65	-0.41	-1.09	-0.30	-2.22	-1.83	-1.05	-2.10
1971-84	-0.49	-0.26	-0.77	-0.22	-1.75	-1.29	-1.29	-1.55
<b>B. DIRECT Real</b>								
1971-74	-2.92	-2.71	-3.03	-2.76	-3.96	-3.06	-4.20	-3.88
1975-79	-2.32	-2.10	-2.59	-2.05	-3.48	-3.31	-3.16	-3.09
1980-84	-3.04	-2.80	-3.50	-2.68	-4.65	-4.25	-3.45	-4.53
1971-84	-2.75	-2.52	-3.04	-2.48	-4.03	-3.57	-3.56	-3.83
<b>C. TOTAL Nominal</b>								
1971-74	-0.94	-0.35	-1.06	-0.48	-3.83	-1.37	-4.57	-3.56
1975-79	-1.48	-0.83	-2.50	-0.57	-5.16	-4.67	-3.65	-3.93
1980-84	1.47	-0.89	-2.40	-0.72	-5.19	-4.19	-2.31	-4.98
1971-84	1.32	-0.72	-2.05	-0.60	-4.79	-3.55	-3.43	-4.20
<b>D. TOTAL Real</b>								
1971-74	-0.51	0.07	-0.63	-0.06	-3.38	-0.94	-4.10	-3.12
1975-79	-0.98	-0.33	-1.99	-0.07	-4.63	-4.15	-3.12	-3.41
1980-84	-1.40	-0.82	-2.32	-0.65	-5.11	-4.11	-2.23	-4.90
1971-84	-1.00	-0.39	-1.72	-0.28	-4.44	-3.22	-3.08	-3.86

Appendix Table A7.4c  
 Cumulative Total Income Effects of Price Interventions  
 by Region: COPRA (in %)

	PHIL	SOUTHERN TAGALOG	BICOL	WESTERN VISAYAS	EASTERN VISAYAS	WESTERN MINDANAO	NORTHERN MINDANAO	SOUTHERN MINDANAO
<b>A. As a Share of No-intervention Income</b>								
1971	-4.45	-3.65	-4.22	-4.03	-8.57	-4.69	-7.69	-8.38
1974	1.22	2.94	0.14	2.70	-6.18	-0.03	-9.49	-5.22
1979	-2.51	-1.38	-4.82	-0.54	-9.13	-8.22	-4.48	-7.14
1984	-2.78	-1.42	-3.55	-2.03	-8.61	-6.43	-3.14	-9.75
<b>B. As a Share of Actual Income</b>								
1971	-4.65	-3.79	-4.41	-4.20	-9.38	-4.92	-8.33	-9.14
1974	1.21	2.86	0.14	2.63	-6.59	-0.03	-10.48	-5.50
1979	-2.57	-1.40	-5.06	-0.54	-10.05	-8.96	-4.69	-7.69
1984	-2.86	-1.44	-3.68	-2.07	-9.42	-6.88	-3.24	-10.81

Appendix Table A7.5  
Actual and No-intervention Consumer Price Index (Outside Manila)  
and GNP Deflator (1971 = 1.0000)

	CPI	CPI'	CPI'	CPI‡	CPI‡	GNPdef	GNPdef'	GNPdef'	GNPdef‡	GNPdef‡
		XUP	ISA	XUP	ISA		XUP	ISA	XUP	ISA
1960	0.4776	0.4428	0.4385	0.4043	0.4012	0.4899	0.4768	0.4734	0.4654	0.4627
1961	0.4980	0.4074	0.4009	0.4427	0.4359	0.5016	0.4637	0.4582	0.4632	0.4584
1962	0.5143	0.5248	0.5203	0.5444	0.5407	0.5347	0.5390	0.5360	0.5268	0.5247
1963	0.5551	0.5612	0.5625	0.5761	0.5772	0.5806	0.5835	0.5843	0.5653	0.5659
1964	0.6041	0.5820	0.5821	0.6083	0.6083	0.6062	0.6001	0.6002	0.5890	0.5891
1965	0.6245	0.5901	0.5821	0.6169	0.6104	0.6318	0.6199	0.6155	0.6067	0.6036
1966	0.6571	0.6165	0.6027	0.6437	0.6313	0.6660	0.6550	0.6477	0.6395	0.6338
1967	0.6939	0.6715	0.6576	0.7043	0.6921	0.7097	0.7039	0.6811	0.6911	0.6736
1968	0.7061	0.6931	0.6785	0.7359	0.7233	0.7449	0.7396	0.7160	0.7349	0.7170
1969	0.7143	0.7059	0.6971	0.7482	0.7406	0.7791	0.7749	0.7612	0.7683	0.7580
1970	0.8204	0.8218	0.8155	0.8552	0.8499	0.8901	0.8969	0.8857	0.8760	0.8676
1971	1.0000	0.8796	0.8758	0.9342	0.9308	1.0000	0.9664	0.9576	0.9521	0.9453
1972	1.0857	1.0342	1.0332	1.0830	1.0822	1.0672	1.0544	1.0526	1.0329	1.0317
1973	1.2163	1.3188	1.3193	1.3218	1.3222	1.2551	1.2855	1.2862	1.2195	1.2199
1974	1.7020	1.8714	1.8726	1.9189	1.9200	1.6478	1.7161	1.7180	1.6630	1.6645
1975	1.8245	1.8979	1.8955	1.9962	1.9943	1.7791	1.8254	1.8217	1.7987	1.7962
1976	2.0000	1.9374	1.9349	2.0711	2.0690	1.9477	1.9335	1.9288	1.9191	1.9157
1977	2.2000	2.2123	2.2051	2.3192	2.3131	2.1163	2.1156	2.1058	2.0663	2.0590
1978	2.3551	2.4078	2.4046	2.5125	2.5099	2.2882	2.2896	2.2856	2.2229	2.2202
1979	2.7673	2.8105	2.8132	2.9188	2.9225	2.6435	2.6610	2.6643	2.5517	2.5555
1980	3.2735	3.4255	3.4371	3.5570	3.5663	3.0544	3.1023	3.1146	2.9944	3.0028
1981	3.7020	3.8378	3.8301	4.0123	4.0066	3.3746	3.4202	3.4125	3.3246	3.3196
1982	4.0816	3.8571	3.8228	4.1661	4.1373	3.6702	3.6067	3.5630	3.5788	3.5476
1983	4.4898	4.4261	4.3929	4.7111	4.6834	4.0993	4.0840	4.0543	4.0098	3.9887
1984	6.7510	6.6977	6.6565	7.0198	6.9858	6.1409	6.1167	6.0711	5.9279	5.8957
1985	8.3061	7.7193	7.4944	8.1128	7.9197	7.2295	7.0525	6.8827	6.8637	6.7386
1986	8.3714	8.2054	8.0436	8.4298	8.2925	7.3586	7.2927	7.1868	7.0212	6.9422

NOTES: ' - had there been no direct price intervention  
‡ - had there been no direct and indirect price interventions

Appendix Table A7.6a  
Total Expenditure Weights of Rice, Corn, Sugar and Oils  
by Occupation and by Location, 1978

	Rice	Corn	Sugar	Oil
URBAN				
All Occupations	0.0739	0.0033	0.0184	0.0174
Professional, Technical				
Entrepreneurial	0.0565	0.0019	0.0184	0.0188
Semiskilled	0.0796	0.0038	0.0184	0.0146
Unskilled, No Occupation	0.0791	0.0033	0.0217	0.0217
RURAL				
All Occupations	0.1643	0.0202	0.0190	0.0160
Farm Owners	0.1583	0.0166	0.0218	0.0166
Farm Workers, Small & Hired Fishermen	0.1809	0.0231	0.0178	0.0166

Appendix Table A7.6b  
Total Expenditure Weights of Rice, Corn, Sugar and Oils  
by Income Group and by Location, 1971-1985

	1 9 7 1				1 9 8 5			
	Rice	Corn	Sugar	Oil	Rice	Corn	Sugar	Oil
<b>PHILIPPINES</b>								
Poor	0.1867	0.0331	0.0194	0.0084	0.1821	0.0506	0.0125	0.0069
Lower Middle	0.1366	0.0242	0.0192	0.0083	0.1122	0.0312	0.0103	0.0057
Upper Middle	0.0986	0.0175	0.0174	0.0075	0.0734	0.0204	0.0082	0.0045
Rich	0.0657	0.0116	0.0147	0.0064	0.0451	0.0125	0.0055	0.0030
<b>RURAL</b>								
Poor	0.1984	0.0352	0.0195	0.0082	0.1926	0.0535	0.0120	0.0066
Lower Middle	0.1554	0.0275	0.0190	0.0082	0.1302	0.0362	0.0100	0.0055
Upper Middle	0.1220	0.0216	0.0194	0.0084	0.0901	0.0250	0.0084	0.0046
Rich	0.0919	0.0163	0.0176	0.0076	0.0669	0.0186	0.0060	0.0033
<b>URBAN</b>								
Poor	0.1707	0.0280	0.0197	0.0084	0.1790	0.0023	0.0117	0.0080
Lower Middle	0.1360	0.0210	0.0205	0.0088	0.1154	0.0015	0.0089	0.0061
Upper Middle	0.1005	0.0154	0.0170	0.0072	0.0785	0.0010	0.0069	0.0047
Rich	0.0711	0.0110	0.0162	0.0070	0.0478	0.0006	0.0046	0.0032
<b>METRO MANILA</b>								
Poor	0.1169	0.0015	0.0106	0.0078	0.1393	0.0018	0.0124	0.0085
Lower Middle	0.1008	0.0013	0.0095	0.0071	0.1033	0.0013	0.0086	0.0059
Upper Middle	0.0742	0.0009	0.0082	0.0062	0.0733	0.0009	0.0065	0.0045
Rich	0.0515	0.0007	0.0063	0.0046	0.0411	0.0005	0.0038	0.0026

See notes on Tables 7.11 and 7.12

Appendix Table A10.1  
Fertilizer-Rice Price Ratio, Net Protection Rate  
and Fertilizer Subsidy

	Fertilizer-Rice Price Ratio <sup>‡</sup>	Ratio of Domestic Price to World Price of N	Fertilizer Cash Subsidy Claims Filed (Estimated) in Million Pesos	Indirect Subsidy <sup>‡‡</sup>
1960	3.15	1.54		
1961	3.22	1.85		
1962	3.86	1.09		
1963	3.59	1.58		
1964	3.48	1.40		
1965	3.63	1.38		
1966	3.15	1.42		
1967	2.97	1.54		
1968	2.97	1.74		
1969	2.62	1.86		
1970	3.44	2.02		
1971	2.11	1.80		
1972	2.11	1.51		
1973	1.95	1.51	46.5	51.2
1974	3.11	0.59	68.4	231.7
1975	4.37	1.29	332.7	68.8
1976	3.64	1.92	108.3	25.1
1977	3.28	1.61	55.2	106.5
1978	3.35	1.41	117.0	150.0
1979	3.68	1.33	15.0	259.9
1980	3.72	1.11	283.0	368.7
1981	3.81	1.26	569.6	545.0
1982	3.88	1.71	444.3	656.0
1983	3.42	1.60		
1984	3.81	1.43		

<sup>‡</sup> Fertilizer price used is the price of nitrogen.

<sup>‡‡</sup> Estimate of tax exemptions (e.g., from customs duties, advance sales tax.)

NOTE: Cash subsidy was discontinued in 1982.

Sources of data: The price ratios were taken from IRRI, World Rice Statistics; fertilizer subsidy from Te, A. "Fertilizer and Philippine Rice Production." (Paper presented at the Miniworkshop on Organic and Inorganic Fertilizer, CEC, UP Los Banos, January 18, 1987.

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