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AGRICULTURAL POLICY IN DEVELOPING COUNTRIES: THE TRANSFER OF RESOURCES FROM AGRICULTURE

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I. INTRODUCTION

This paper focuses on interventions by governments of developing

countries that tend to distort economic incentives and, in particular, to

transfer resources from agriculture. Generally, as agriculture is modernized

and an economy develops, labor is transferred out of agriculture. Parallel to

this transfer is the need for capital deepening[1] in agriculture in the form

of investments in land and human capital and the adoption of chemical,

biological and mechanical technology that saves on the use of the sector's

most scarce resources. Since markets work imperfectly in the provision of new

agricultural technology, rural infrastructure, education and other services

that permit markets to function efficiently, government programs and projects

to remedy these imperfections are often socially profitable. Hence, there is

a need and an important role for government to play in the development

process[2].

However, the fact remains that, in the case of many countries, government

intervention has proved to be ineffective or worse than the disease of market

failure that the intervention was meant to cure. Evidence of extensive

intervention can be found in numerous studies, including those of Bale and

Lutz for the case of four developing countries, Gerrard and Roe's study of

Tanzania, Bautista's study of the Philippines, Orden, et. al. for the case of

Peru, and several others (Bale and Duncan, Schultz).

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These studies have generally found that interventions have implicitly taxed agriculture by distorting agricultural commodity prices. For instance, Bale and Lutz found agriculture in the four countries they studied to be heavily taxed, with direct welfare losses from distortions in agricultural prices ranging from 10.6 percent of GNP in Egypt to 1.5 percent of GNP in Argentina. Similar evidence of price distortions were obtained in the Tanzanian study. Bautista found that export taxes and an overvalued exchange rate were the major factors contributing to depressed rice exports and low producer prices for rice in the Philippines. In Peru, the subsidizing of consumer prices led to a decline in producer prices which were further depressed by the country's overvalued exchange rate.

However, it is not interventions in agriculture alone that are effective in distorting economic incentives to that sector. In many countries, concomitant with interventions in agriculture are interventions in the urban-industrial sector that have the effect of making this sector appear profitable relative to agriculture. These interventions, therefore, serve both to push and pull resources away from agriculture. Moreover, there appears to be a pattern to intervention among developed and developing countries which suggests that the maintenance of and motivation for interventions that are wasteful of societies resources might be explained by a more fundamental underlying process than simple policy mistakes.

The paper is organized as follows. The next section is composed of two parts, the first of which takes a closer look at government intervention in foreign trade markets, with emphasis on agricultural commodities. The second part focuses on interventions in agricultural procurement and marketing activities. The following two sections consider some of the macro-economic effects of these interventions and how they can increase a country's

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susceptibility to shocks in world markets. Then, the question is considered: If social economic losses from these interventions are large, why in general are they pursued? Comments on the problems of removing distortions conclude the paper.

II. THE PROCESS OF TRANSFERRING RESOURCES FROM AGRICULTURE

Agricultural policy in most countries is interwoven with policies in other sectors of the economy. Discussion is therefore facilitated by considering how the intervention process seems to take place in a "typical" country. The experience of selected countries is used for illustration.

Since agriculture is the dominant sector in most developing countries, it is often an important resource base that policy makers might tax for public investment back into the sector and into other sectors to foster development. A tax system to extract this potential source of resources is difficult because of the large number of spatially dispersed and heterogenous households and the lack of infrastructural development that characterizes agriculture in most developing counties. Consequently, these resources are often extracted from agriculture through the use of indirect methods such as interventions which lower the price of products produced by the sector. These interventions give rise to what is often referred to as implicit taxes.

Policy makers are tempted to use indirect methods because food is a wage good. The share of total income spent on food by low income urban households in developing countries is often over 60 percent of total household expenditures. Hence, interventions which lower the price of food are effective in transferring resources to the urban sector because lower food prices increase real wages received by workers in urban labor markets. While these types of interventions tend distort economic incentives, they tend to

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receive substantial support from urban households and industrialists for reason we shall discuss later.

Agriculture can clearly benefit from a transfer of resources that are reinvested by the public sector. It is well known that markets alone are not effective in producing yield increasing technologies without public sector support. Rural households have benefited from public investments in yield-increasing biological and chemical technology, irrigation facilities and flood control. And, they have benefited from nonagricultural investments that serve to improve communications, lower spatial costs, and provide public utility services, improved educational opportunities, and other human capital-augmenting investments.

The social profitability of public investments in agriculture relative to public investments in other sectors of the economy depends, in part, on the level of per capita income. As per capita income increases beyond the level required to meet basic food needs, the incremental demand for nonagricultural goods and services tends to exceed the incremental demand for food. Hence, all else the same, the returns to resources employed in the nonagricultural sector of the economy tends to exceed those employed in agriculture. Likewise, the social return to incremental public investments in the nonagricultural sector tends to exceed those in agriculture. However, in many developing countries, a large fraction of the population are still struggling to meet basic food needs so that an increases in income gives rise to an increase in the demand for food relative to the demand for nonagricultural goods and services. Then, it is possible for the social return to an incremental public investment in agriculture to exceed the return to investments in other sectors of the economy.

A recent study of 4,000 households in the Dominican Republic provides some quantitative insights into the relative magnitude of demand elasticities for food and nonfood products and how they depend on income levels. As shown in Table 1, total food-expenditure elasticities tend to decline with increases in household income. However, for both rural and urban households, these elasticities remain fairly large through medium income levels. The share of total household expenditure on food is over 50 percent for all households, except those in the urban high-income group. For an economy dominated by rural low and medium income households, expenditure elasticities on food actually exceed those of housing, clothing, and other nonfood goods and services. The elasticity of industrially produced commodities, namely, clothing and other nonfood goods and services, tends to exceed food expenditure elasticities only as households move into the highest income group. In the case of urban high-income households, expenditures on nonfood items exceed 60 percent of total expenditure. Hence, the return to private and public investments in agriculture may exceed returns in the nonfood sector when, in the early stages of development, the rising demand for food exceeds the growth in demand for nonfood goods and services.

The two fundamental issues that arise are the appropriate rate of resource transfer within and out of agriculture and the means to carry out the transfers. The socially optimal rate of transfer, for the most part, depends on the discounted expected social returns to capital in market and nonmarket activities, which in turn, depend on the expected growth in final demand and in foreign trade opportunities. Approximating the socially optimal rate of transfer from the agricultural sector to just the nonmarket sector would seem to be a heavy burden for even the most sophisticated planning process in developing countries.

Table 1. Total Expenditure Elasticities and Expenditure Shares for Food,
          Housing, Clothing and Other Non Food Items, 4,028 Households,
          Dominican Republic.

Exp. Group[1]	Mean[2] Exp.	Mean[2] Income	Food[3] Total Exp. Elast.	Food Share Exp.	Housing Total Exp. Elast.	Housing Share Exp.	Clothing & Other Total Exp. Elast.	Clothing & Other Share Exp.
RLY	71.9	82.9	1.21	0.73	0.66	0.21	0.01	0.07
RMY	128.7	139.5	1.26	0.71	0.63	0.17	0.01	0.12
RHY	264.7	304.8	0.68	0.63	0.86	0.17	1.53	0.20
ULY	111.6	120.8	0.91	0.64	1.04	0.25	1.37	0.11
UMY	223.6	250.4	0.85	0.55	1.28	0.24	1.07	0.21
UHY	610.3	646.1	0.32	0.39	0.26	0.30	2.21	0.32

Source: T. Yen, <u>Stagewise Estimation of a Complete Demand
Systems with Limited Dependent Variables and Nonlinear
Constraints: An Application to Dominican Household Consumption
Data</u>, Unpublished Ph.D. Thesis, Department of Agricultural and
Applied Economics, University of Minnesota, St. Paul, April,
1986.

[1]RLY denotes the category of rural low income households, ULY
denotes urban low income households etc. The expenditure categories
are based on monthly incomes as follows; for rural households:
RLY < $100; $100 ≤ RMY < $160; $160≤ RHY, and for urban household:
ULY < $165; $160 ≤ UMY < $300; and $300≤ UHY. The official rate
of Peso-Dollar exchange at the time this data was collected was 1:1.

[2]Expenditures are mean total monthly expenditures on all goods
and services. Income is mean monthly income including income in
kind. The residual between expenditures and income includes savings
and other unaccounted for income.

[3]The first column denotes total expenditure elasticities and the
second column denotes the share of total expenditures allocated to the
particular category (e.g., food) listed at the top of the column.

The means of resource transfer is the critical issue on which I want to focus. Relying on markets to transfer capital from agriculture means giving rural households adequate incentives to accumulate and hold savings in forms that can be used to fund nonagricultural-type investments. Modern rural capital markets often incur high transaction costs because of the large number of small transactions. While some success at establishing such capital markets has been realized (Hayami and Ruttan, pp.399-403), their performance is conditioned by a country's monetary, fiscal, and exchange rate policy. Often, these policies have given rise to low and even negative real interest rates, thereby discouraging savings. Direct taxation of rural households, as through a land tax, was effective in transferring saving from agriculture in Japan during the first two decades of the 19th century (Kuznets, p. 47). However, direct taxation appears to be an unacceptable alternative to land owning classes, especially in light of the discrimination against agriculture that already exists in most developing countries.

II.A Interventions in Foreign Trade Markets

Governments of many developing countries rely on the use of trade and exchange rate policies to extract resources from agriculture and then to transfer them to the urban-industrial sector of the economy. Trade and exchange rate policies are employed, in part, because the instruments used to implement these policies are easily manipulated. Furthermore, they are subtle in the sense that their manipulation is not as directly observable by those from whom the resources are being extracted as are other forms of taxation, e.g. a land tax.

A recent USDA-University of Minnesota study provides some insights into the control of foreign trade in food grains in a number of countries. Of the 21 countries investigated, all employed one or more of the following instruments to control foreign trade: an export-import state operated monopoly, import licenses, export taxes, or quotas. Nineteen countries reported the use of trade controls on wheat, 18 had trade controls on rice, 15 had trade controls on corn, 11 had trade controls on sorghum and 4 had trade controls on millet. These instruments are most often used to maintain, relative to border market prices, low and stable prices of food by raising imports above free-trade levels or by discouraging the export of food crops in which a country has a comparative advantage.

The experience of selected countries illustrates this point. Tanzania's National Milling Corporation is the agency with the primary responsibility for carrying out the country's stated policy of food grain self sufficiency. It maintains a statutory monopoly over the marketing and foreign trade in grains. Essentially, the agency enforces the government's domestic price controls by making the necessary adjustments in its stocks or imports in order to equilibrate domestic demand and supply at announced prices. This policy has caused substantial departures of domestic food grain prices from border market levels. The average ratio of domestic to border prices over the period 1964-1977 was 0.76 for maize, 0.64 for rice, and 1.15 for wheat.

An econometric study (Gerrard and Roe) of Tanzania's demand and supply for these crops suggested that the government intervention implicitly taxed maize and rice production beyond the point of absolute self-sufficiency, defined as the price which equilibrates demand and supply under autarky. Consequently, Tanzania became a marginal net importer of these grains even though the estimated autarky prices were below their respective border prices.

The country is a high cost producer of wheat. Its policy of self-sufficiency in this crop amounted to producing wheat on state farms and restricting imports so that domestic wheat prices exceeded border prices.

The government's choice of domestic price levels was constrained by the nature of supply and demand for food and the competitiveness of the country's exports. The government's tendency to lower the price of maize relative to a less important crop in consumption was offset by the foreign exchange losses that would have been incurred for large departures between domestic and border prices of maize.

Efforts to transfer resources from agriculture often give rise to declining foreign exchange earnings and a crowding out of nonagricultural imports (Pitt). In the case of Tanzania, Lofchie points out that due to the severe shortage of foreign exchange and the urgent need to use remaining currency reserves to finance immediate food requirements, the government was compelled to impose stringent limitations on nonfood imports. These restrictions decreased the importation of economically important items such as raw materials for industry, new capital goods, and spare parts. The result was a serious economic depression. Hence, in some countries, efforts to transfer resources out of agriculture may actually limit resources available to the domestic industries the country is trying to protect.

This trade-off between the control of food imports and the scarcity of foreign exchange is less pronounced for industrial crops such as cotton, sugar, and coffee. Using similar policy instruments, these crops are often taxed to an even greater extent than are food crops. Bale and Lutz report domestic to border price ratios of 0.34 and 0.58 for cotton in Egypt and Pakistan, respectively. In Egypt during the late 1970's and early 1980's, domestic long-staple cotton prices were so depressed that domestic cotton-

processing companies were forced to import cotton at border prices (i.e., at almost three times the price paid to domestic producers) in order to operate their plants at desirable capacities (USAID).

The transfers imposed on sugar and coffee producers in many countries are more complex because of the quota systems for these commodities. The U.S. quota price of sugar has been more than twice the world market price in recent years. Rather than permitting these rents to be captured by farmers, many sugar-exporting countries have imposed relatively high export taxes on sugar and many have chosen to produce a large share of national sugar production on state farms.

In the case of the Dominican Republic (Greene and Roe), export taxes on sugar in 1983 were about 36 percent of the fob export value. Moreover, the Consejo Estatal de Azucar (CEA), a Dominican state owned enterprise, controls nearly 40 percent of the land planted to cane. The remaining revenues after taxes have been used to remunerate plant, equipment, and a large and growing state-employed labor force.

Policies to transfer resources from agriculture are made even more punitive to rural households when countries simultaneously employ policies to protect the domestic industrial sector.[3/] Results from a recent IMF study of 35 developing countries find that the rates of protection of manufacturing are often higher than in most industrial countries. The average effective rate of protection was 50 percent during 1966-72 and 60 percent in the late 1970's (IMF 1985a, Table 64). Exceptions include countries such as Korea, Taiwan, Singapore, and Hong Kong. Many of the developing countries that have high rates of protection for manufacturing also allow imports of raw materials and intermediate inputs intended for export production to enter duty free (IMF, 1985a. p. 74).

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Protection of the industrial sector directly affects agriculture in four important ways. First, rural households often face higher prices for agricultural inputs supplied by protected industries. Protection of import competing industries through tariffs or quotas restricts world market supplies from entering domestic markets at world market prices. Hence, domestic import-competing industrialists have little incentive to expand production beyond the demand of the domestic market. In this situation, domestically produced import substitutes are invariablly produced at high unit cost. This often occurs because either the scale of the domestic market is sufficiently small to preclude the operation of plant and equipment at low unit costs or the licensing arrangements that accompany trade protection is allocated to a limited number of firms on the basis of political patronage. Moreover, it is not unusual for the products of protected industries to be technically inferior to substitutes otherwise available in world markets. The result tends to be the production of inferior products by concentrated industries operating at high unit cost .

Second, either as a consequence of concentrated industries (and hence monopsonistic behavior) high unit costs, or both, agriculture often receives lower prices for commodities that undergo additional processing in the protected industries. In the case of Egypt, farm-level prices of commodities that underwent additional processing were often lower than the prices in the absence of protection. Egyptian cotton producers would have received higher prices if cotton had been exported rather than processed in Egyptian plants.

Third, protection makes the industrial sector appear profitable relative to agriculture and, consequently, agriculture is forced to compete for resources that are artificially made more dear. This includes peak seasonal demand for labor and credit. Agriculture must also compete for public

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investments. If the analyses of the net social value of these investments do
not take into consideration the artificially induced profitability of returns
to investments in the protected sectors of the economy, then public
investments in agriculture are likely to be less then they would be in the
absence of protection.

Fourth, returns in agriculture are sensitive to public investments in
activities where markets function poorly. Hence, to the extent that
interventions decrease the public sector's capacity to make these investments,
agriculture and the economy must forego this potential source of gain in
productivity. [4/]

Trade interventions give rise to a number of direct and indirect effects
which can alter the terms of trade between food and nonfood crops, between the
agricultural sector and the industrial sector and a country's international
terms of trade. The prices of noninternationally traded commodities (mostly
perishables such as fresh fruits, vegetables, and, depending on the country,
livestock products) can also become distorted as resources flow out of
commodities whose prices are distorted downward and into the production of
these nontraded commodities. To the extent that the nontraded commodities are
substituted in consumption for the commodities whose prices have been
distorted downward, the demand for the noninternationally traded commodities
tends to decline thus placing additional downward pressure on the prices of
these nontraded commodities.

The direct effects of trade interventions alone can lead to a transfer of
resources from agriculture, to alter the value of sector-specific resources
and to induce rural to urban migration. While the transfer of some resources
from the sector is expected to occur in the process of growth, extensive
interventions in trade artificially induce these transfers so that many of the

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other adjustments, if they occur at all, tend to occur at a reduced rate. These include the process of capital deepening and the development of infrastructure and other characteristics of growth and development in agriculture.

Before considering these in more detail, I turn attention to a second set of interventions, common in many developing countries, that often further exacerbate the problems faced by rural households.

II.B Production and Marketing Controls

Interventions in foreign trade markets that induce a transfer of resources from agriculture invariably lead to depressed conditions in the sector. Some governments react with policies that subsidize agricultural inputs and raise farm-level commodity prices while, at the same time, maintaining low and stable food prices to urban consumers.

These policies lead to a narrowing of the marketing margin and, in the extreme case of Egypt (von Braun and de Haen, USAID) and Peru[5/], to farm-level prices that are higher than their equivalent retail counterparts. Without subsidies, the narrowing of the margin implies lower returns to the resources employed in marketing activity and hence an exodus of merchants and middlemen traditionally involved in these activities. The implementation of the policy often amounts to the taking over of marketing functions by government agencies and state owned enterprises. For many countries in Africa, these structures, in the form of marketing boards, have existed from colonial rule.

Some insight into the pervasiveness of production and product marketing controls can be obtained from the USDA-University of Minnesota study of food policies in developing countries. All 21 countries in the study were found to employ some type of domestic production and/or marketing controls for food

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grains. These included procurement, processing, storage, and transportation. These controls were implemented through licensing, subsidy schemes to middlemen, and, most commonly, through state owned enterprises. The extent of control in a country tended to be in direct proportion to the expenditure share of the crop in household consumption. Eighteen countries imposed marketing controls on wheat, 19 imposed controls on rice, 13 imposed controls on maize, and 14 imposed controls on sorghum. The African countries in the study tended to employ the largest array of controls over the most crops, followed by Asian and then Latin American countries.

The direct budget expenditures from implementing a policy of buying dear and selling cheap are often increased by the losses that seem naturally to arise from the inefficiencies common to many state operated enterprises. In the Dominican Republic, the state owned enterprises that displace private enterprise in agriculture include the Instituto Nacional de Estabilizacion de Precios (INESPRE) and the previously mentioned sugar enterprise, CEA.

INESPRE's statutory objectives are to regulate the prices of agricultural products in domestic markets and to protect consumption levels (IBRD 1985a, p.34). Essentially, this agency is the counterpart of Tanzania's National Milling Authority. It buys and sells products at different points in the marketing chain and in international markets so that domestic markets clear at target prices. It also stores commodities to dampen the annual variation in market prices. In 1983, for example, INESPRE had accumulated stocks valued at one-third an entire year's production of rice plus $14 million in stocks of maize, edible oils, and soybean meal (IBRD 1985a).

The extent of CEA and INESPRE's involvement in agriculture can be gleaned from their annual current operating budgets. Their combined average annual current expenditures amounted to nearly 40 percent of agriculture's GDP over

the period 1976 to 1984. While these enterprises are known to contribute to the central government's budget deficit, estimates of their operating deficits are difficult to obtain. Conservative estimates of their average annual deficits is 5 percent of agriculture's GDP over the period 1976-1984.

Deficits incurred by state-owned enterprises can be large. Estimates of losses associated with state-owned enterprises of all types in seven countries ranged from a low of under one percent of GNP in Korea to over ten percent of GNP in Sri Lanka (Short). Their losses also appear to be an important factor explaining the need of some countries to restructure external debt. This is discussed in more detail in section IV.

III. SOME MACRO-ECONOMIC EFFECTS OF INTERVENTIONS

The direct effects of interventions give rise to a host of indirect effects. The latter invariably involve an overvalued currency combined with implicit import subsidies, export taxes, and deficits on a country's trade account. These indirect effects cause additional distortions in the terms of trade within and between the agricultural and industrial sector, which in turn, serve further to extract resources from the agricultural sector.

The magnitude of some of these distortions is indicated in recent studies of Egypt, the Dominican Republic, and the Philippines. Scobie found that central government budget deficits associated with Egypt's food subsidies were met by both foreign and domestic borrowing. The concomitant expansion of the money stock led to an excess supply of money balances and an excess demand for goods, both foreign and domestic. A 10 percent rise in government expenditures was found to increase inflation by about 5.3 percent, decrease the stock of net foreign assets by 1.7 percent, and devalue the Egyptian pound on the black market by about 3.3 percent.

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Because food imports were the key to equilibrating domestic supply and demand at announced prices, a decline in foreign exchange was met first by postponing the import of capital goods and raw materials, which had deleterious effects on the output of industrial goods. The economy was thus made vulnerable to fluctuating world prices of food imports. A 10 percent deviation from trend in total industrial imports tended to decrease industrial output by 8.3 percent and investment in industrial capital by about 8.8 percent. Taking into consideration the share of foreign exchange allocated to food imports, these estimates implied that a 10 percent increase in the price of imported food resulted in a drop in industrial output by 1 to 2 percent.

In the case of the Dominican Republic, the direct effects (nominal rates of protection) of interventions in foreign trade, procurement, and marketing on producer prices of sugar, coffee, and rice relative to a price index of industrial goods suggested that rice producers received a small implicit subsidy over the period 1966 to 1985 (with the exception of 1973 and 1974 when they received a fairly large implicit tax). Over the same period, sugar producers were implicitly taxed in most years and coffee producers were implicity taxed in all years except four (Greene and Roe). Thus, the direct effects discriminated against the agricultural export crops, and to a much lesser extent against the main food crop (rice) relative to urban industrial goods.

However, estimates of the average annual overvaluation of the Dominican currency relative to the dollar from 1977-84 ranged, in real terms, from 10 percent to 22 percent, depending on various estimates of implicit tariffs, taxes, and excess demand and supply elasticities.[6] In this case, the total direct and indirect effects of intervention on

producer prices of sugar, coffee, and rice relative to a price index for industrial goods was estimated to average -33.1 percent, -38.0 percent, and -6.0 percent, respectively.

The traditional agricultural export crops were thus even more heavily taxed relative to producers of domestic industrial commodities. Rice producers were also taxed, albeit at a lower rate, relative to producers of domestic industrial commodities. Yet, the effect on rice production was significant. Estimates from an econometric model (Roe and Senauer) of the Dominican rice economy suggested that in the absence of distortions, rice production would have exceeded observed levels by an annual average of about 19 percent since 1980. Interventions also restrained the country's participation in foreign trade. Since 1977, exports averaged about 20 percent of real GDP. In the absence of interventions, it is estimated that exports would have averaged about 33 percent of real GDP (Roe and Greene).

In the case of the Philippines, Bautista also found that interventions since the 1950s consistently discriminated against agricultural export production in favor of home goods and import competing industries. He concludes, "Correcting the incentive bias against agricultural export production represents a potentially significant source of growth in agricultural income and foreign exchange earnings. Institutional changes, new technologies, infrastructure development, and other productivity-raising public investments may be necessary to boost significantly the long-term export performance of Philippine agriculture. However, they are likely to prove inadequate if relative incentives continue to be biased against agricultural export production."

As the evidence illustrates, interventions have altered the course of economic development in many countries. Indirect effects have come about in

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part because interventions have contributed to increased government expenditures that have exceeded their fiscal capacity to meet these costs. Associated with these expenditures is an increase in a country's stock of currency, an increase in inflation, a decrease in real interest rates[7], and an increase in the real exchange rate that serves further to increase the implicit subsidy to food imports and to tax exports.

The consequences of interventions can lead to a change in the domestic terms of trade against agriculture and in favor of the urban-industrial sector. Naturally, this leads to an undervaluation of agricultural resources, an outflow of capital from the agricultural sector, and an increase in rural to urban migration. The increase in urban population would seem to place additional pressure to lower the prices of wage goods, primarily food staples. These adjustments slow the process of economic growth in agriculture and, therefore, agriculture's contribution to the growth process.[8/] Furthermore, these interventions serve to alter a country's international terms of trade. In other words, the process of transferring resources from agriculture by means that give rise to the distortions discussed here invariably leads to a "withdrawal" of a country from international markets. The efficiency gains to domestic resources from economies of scale and specialization that world markets provide are reduced. In the longer run, these efficiency losses limit a country's capacity to supply goods and services to a growing population.

Consider, for example, the impact on rural households. In the process of economic growth, rural households can be viewed as undergoing a vertical disintegration - a specialization of production activities, with an increasing share of household expenditures on preferred foods, housing, clothing, and other nonfood items. Even in the presence of large productivity increases in agricultural output, income and population growth effects can increase the

demand for food and feed grains and, in some countries, increase imports of both (Mellor and Johnston). As productivity increases, the opportunity cost of time to the household increases. Labor is allocated away from labor-intensive activities and more reliance is placed on the market for goods and services otherwise produced in the more traditional household.

For rural food-surplus households, the means used by many governments to transfer resources from agriculture clearly serve to retard this entire process because the returns to agricultural resources are artificially biased downwards. Rural labor surplus-food deficit households are also adversely affected. While food prices may be lower than they might otherwise be in the absence of interventions, rural employment opportunities are reduced. The additional employment opportunities in urban-industrial areas created by the import substitution-industrialization policies are usually not sufficient to pull the surplus labor from agriculture that these policies have effectively displaced. While real wages may be higher in urban areas, the capital-to-labor component of the technology of the new industrial plants is often capital-intensive relative to a developing country's endowments.

Furthermore, the skill levels required of labor to operate these plants may, in any case, exceed the levels of rural labor. In many countries, population growth coupled with insufficient labor absorption by the industrial sector has resulted in a decline in the land-labor ratio in many countries and, in the absence of technical change and increased capital inputs, a decline in the real wage (Hayami and Ruttan, Table 13-1). Attempts to circumvent this problem by state owned industrial enterprises seem only to exacerbate the problem.

Public investments in areas where markets perform poorly (rural infrastructure, agricultural research, rural education) serve to enhance

market linkages with rural households. For example, investments in roads lower spatial costs and, thereby, the marketing margin between farm and wholesale-level markets. Effectively, this improves the terms of trade for market relative to home produced goods and consequently accelerates the vertical disintegration of rural households. To the extent that interventions decrease public resources available for investments in these areas, rural income streams and the capital deepening process associated with productivity increases in agriculture are diminished.

IV. SUSCEPTIBILITY TO SHOCKS

Countries pursuing the types of policies considered above tend to be more susceptible to shocks to the world markets such as those that occurred during 1973/74 and again in 1979/1980.[9,10] Their susceptibility arises because governments are either reluctant to alter policy in light of shocks or they do so with considerable lag. These policies become difficult to manage and maintain in turbulent world markets because low-cost food and import substitution-industrialization policies are, for the most part, dependent on interventions in the trade sector. Since the source of public revenue is primarily from taxes and tariffs on exports and imports, world market shocks that adversely alter a country's terms of trade also adversely affect a country's fiscal capacity to carry out programs and maintain subsidies without incurring fiscal imbalances, let alone trade imbalances.

It is evident from Scobie that Egypt's policies were a fundamental determinant of the level of capital flows, the efficiency with which capital was used (e.g., investments in productive activities compared to consumption subsidies), and the country's capacity to service its debts from export earnings. When food imports are required to equilibrate demand and supply at announced prices, shocks that adversely affect a country's terms of trade can,

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in the absence of other adjustments, increase food subsidies and the level of protection to otherwise noncompetitive industries. Consequently, unsustainable government budget deficits can occur. The frequent result is an increase in a country's domestic and foreign borrowing. This debt serves to increase aggregate demand and to further exacerbate the distortions discussed previously. Furthermore, interventions tend to prevent world market signals from being transmitted to the private sector so that resource adjustments that would otherwise take place either do not occur or do so with considerable lag. In the absence of interventions, adverse shocks to a country's terms of trade would tend to decrease its consumption of imports and, through adjustments in capital markets, lower the country's standard of living relative to countries whose terms of trade have improved.

Another measure of a country's susceptibility to shocks in world markets is the effect of these shocks on the probability that it will need to restructure its foreign debt. In Chipman et. al., a probit model was fit to data on 17 countries for the period 1975 to 1983. Of the five explanatory variables, the two which explained the largest variation in the probability of restructuring was the World Bank's index of price distortion (IBRD 1985b, Table 4.1) and the ratio of non-central public sector deficit (a measure of debt held by state owned enterprises) to GDP lagged two years. This model predicted, out of sample, 90 percent of the countries that rescheduled their debt in 1984. The countries with the largest index of price distortion and largest ratio of non-central public sector debt to GDP were dominated by countries the pursued extensive interventions of the type discussed here. These results suggest that many countries used debt to cover the fiscal imbalances due to interventions instead of using debt to make capital investments that earn a flow of returns to meet payments on principal and debt

service. Rising real interest rates, appreciation of the dollar, and declining foreign exchange earnings, which in part was due to trade interventions, gave rise to unsustained levels of foreign debt in many countries. The restructuring exercise generally requires the debtor country to undertake adjustment policies. In the short run, these policies seem to have led to considerable adjustment difficulties for low income households. These difficulties might have been avoided if the countries instead had chosen to liberalize their policy and reduce the level of government deficits over a longer period of time. Ironically, the recent decline in the value of the dollar and in real interest rates may allow some countries to avoid liberalization of their policies.

V. SOURCES OF RESISTANCE TO LIBERALIZATION

If the social economic losses from these policies are large, why in general are they pursued? While surely incomplete, three possibilities are considered: (1) policies are the outcome of political pressures exerted by members of the domestic economy seeking their own interests, (2) policies are mistakes, or more generally, failures of the planning process and (3) policies, when first implemented, may have implied small social costs but, with the passage of time, they become difficult to change because the adjustment cost incurred by groups otherwise benefiting from the policy may be high, and these costs may be disproportionately borne by the poor. I have omitted the arguments advanced by Prebisch and de Janvry. The reader is referred to Spraos and Bates, p.166-169 for a review and short critique of the Prebisch thesis and to Schuh (1984) for a critique of de Janvry's argument.

Some recent insights into the factors motivating government intervention can be found in Bates and Colander. Bates rejects the notion that governments intervene so as to secure the best interests of their societies. Essentially,

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he accepts the hypothesis stated in (1) above. He argues that this view is consistent with the observation that urban households are potent pressure groups demanding low-priced food. They are potent because they are geographically concentrated and strategically located. They can quickly organize and they control public services so that they can impose deprivation on others. Bates supports this observation by noting that urban unrest forms a significant prelude to changes of governments in Africa.

Interests of urban consumers coincide with those of domestic industrialists who view low-priced food as serving to decrease the pressure on wages. The industrialists also are effective in obtaining protection from imports because of the notion, common in many circles, that the key to development lies in industrialization. And, in any case, since industrial goods account for a small share of most households' budgets in LDC's, price discrimination in favor of these goods will not have a large negative impact on the welfare of most households. The result is policy which tends to support import substitution and, simultaneously, low-cost food to urban households.

The same argument applies to developed economies. In advanced stages of development, the food share of the budget declines so that consumers become less sensitive to increases in food prices. Agriculture is a smaller component in the total economy, and farmers are more specialized. Within their area of specialization, they are better able to organize than are urban groups. This situation is virtually the reverse of the case for developing countries. With food a small share of consumers' expenditures, protective demands in agriculture can be met at lower economic cost to urban households. The result is that the agricultural sector is likely to receive protection at the expense of the industrial sector.

Others also seem to support this general view (Hayami and Honma and Hayami, Anderson 1983, 1985). They extend it to explain policy regimes in developed countries that protect agriculture and regimes in developing countries that tax agriculture. Anderson (1983) notes in his study of the growth of agricultural protectionism in East Asia that countries tend to switch from taxing to subsidizing agriculture in the course of economic development. And the timing of this switch is associated with agriculture's declining comparative advantage relative to manufacturing.

While these arguments provide insights into the motivation for interventions, it is not clear why governments prefer to intervene in markets. To accomplish many of the same objectives, they could intervene in areas where markets function poorly. Bates (pp. 173-178) argues that market interventions facilitate the allocation of political rents. In his terminology, market interventions facilitate the "organization of the rural constituency" who support the government and to "disorganize the rural opposition". Markets fail in the provision of public goods because of the free rider problem. They fail largely for the same reason in the provision of political rents.

Because of the free rider problem, Olson argues that political coalitions are likely to be narrowly based and interested in the distribution of wealth rather than in attempts to allocate resources to increase society's output. Drawing on Olson and Buchanan, Srinivasan (1985) argues in the case of India that the policies which sought to alleviate the conditions of the poor were not undesirable per se. Instead, "It is that the policies that were introduced in the name of poverty alleviation increased the power of other rent seeking distributional coalitions."[11/] Market interventions tend to be more effective in capturing rents for these coalitions than interventions in areas where markets function poorly. Srinivasan (1985) adds that countries

that follow inward-oriented development strategies of import substitution-industrialization are more prone to trigger these activities than are in countries following outward-oriented strategies. It would seem that these arguments might also be extended to explain, in part, the formation of state-owned enterprises which permit the capturing of rents by directors and employees of the enterprise.

The relaxation of interventions that distort an economy confronts the political forces that have gained from the distortions. In the short run, it is possible that extreme shocks to an economy are required to dislodge the political structures that have given rise to costly forms of intervention. In the longer run, education and technical changes in agriculture that significantly alter income streams (such as the green revolution) also induce changes in institutions. Whether these changes can come about in highly distorted economies and, if they do, whether they will be sufficient to induce changes in policy is open to question.

Perhaps in all countries, some interventions and the manipulation of policy instruments are simply the result of policy mistakes. In practice, numerous government agencies are involved in the planning-policy implementation process. Most projects have spatial, temporal, and commodity target-group specificity. This process is complex, and characterized by a multiplicity of policy instruments and a maze of projects.

The development planning literature (e.g., Agarwala, Cochrane and Stopler) has documented the experience of many countries where the mismanagement of this complex process and the development of plans based on faulty cause and effect and program-project implementation assumptions[12/] have given rise to outcomes that bore little resemblance to initial intentions. Since physical and administrative infrastructures are poorly developed in many

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developing countries, it is difficult to target interventions (taxes, food subsidies) in ways that have minimal market distorting effects. Organizational problems often give rise to poly-archical decision making structures rather than hierarchical. That is, interventions are not always centrally directed. Instead, interventions are often carried out by semi-autonomous agencies and state-owned enterprises without the direct control or knowledge of a country's central planning-policy making authorities. While these factors are not independent of the political forces mentioned above, they must surely affect the patterns of interventions and the welfare gains and losses in many countries.

Interventions that have been in place for an extended period of time can induce structural changes in an economy. Put another way, the value of protection gets built into the value of sector-specific assets so that in the short run, policy liberalization can have significant wealth effects. An example is industrial plants and equipment that process specific commodities or fabricate particular goods, which, in the absence of protection, lose part of their value, the loss being greater the more difficult it is to transfer the capital to other enterprises.

The human capital employed in these enterprises will also be displaced with the loss of seniority rights and perhaps the need to undergo retraining to obtain equivalent wage levels in other activities. Some of the displaced workers may enter the surplus labor pools of the lower skilled, thereby placing downward pressure on wages in these markets as well. The end result can be lower earnings to unskilled labor so that lower income households bear a disproportionate loss in income than do households of higher skilled, though perhaps displaced, workers. In this environment, households that had not previously been significant participants in the political process may, in the

light of possible changes in policy that alters this structure, become opponents to change because of the short run adverse wealth effects even though, in the longer run, they may gain from the the removal of these policies.

Furthermore, significant changes in policy imply that households need to change their expectations regarding the source and levels of future income streams. When 70 percent of disposable household income is allocated to food, unskilled labor from urban households with limited ties to rural resources tend to bear the brunt of the readjustment process. The possibility of lower incomes and the uncertainty this implies almost surely adds to the political forces mentioned above that resist changes in policy.

VI. CONCLUDING COMMENTS

The removal of interventions that give rise to the type of distortions considered in this paper will, almost surely, require a comprehensive plan that deals with the sources of resistance discussed in the previous section. The period of time required to carry out the plan in an orderly manner will likely take longer the greater are the distortions and the more entrenched are the enterprises that owe their existence to and implement the interventions. Substantial effort will likely be required to convince those who face adjustment costs of the long-run social cost of continuing these policies.

Issues that a plan will need to address include (1) building and redirecting government agencies to design programs and implement projects that are socially profitable in areas where markets function poorly in the allocation of resources, (2) developing equitable means of divesting public enterprises and, for the situation of natural monopolies, finding forms of organization that give rise to least cost operations and pricing behavior, (3)

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instituting alternative forms of public revenue generation other than unequal

tariff and tax rates on imports and exports that give rise to distortions, and

(4) formulating policies to ameliorate adjustment costs faced by low income

households.

Low income is the fundamental cause of hunger and, as implied in section

IV, low income households tend to face the major cost of adjustments to

adverse changes in their environment. Income depends on the households'

access to factors of production, including skills, that generate income

streams sufficient to satisfy basic nutritional and health needs.

It is generally agreed that programs and projects to transfer income must

be targeted since otherwise, distortions come about. Target interventions

include food stamps, fair-price shops, school lunch programs, public works

projects, training programs, and, more specific to low income rural

households, input subsidies, and extension-education programs. A self-

targeting program is one that attracts the targeted group because of

differences in its characteristics relative to higher income households.

These characteristics include the low opportunity cost of time and the

consumption of less preferred foods, such as cassava.

The difficulties of targeting include: (1) identifying of low income

households whose "basic" nutrition and health needs are not met, (2) designing

the programs and projects to target urban households may not be appropriate

to target rural households, and (3) targeting programs and projects to low

income households often gives rise to high administrative costs relative to

market interventions.

The choice of interventions to assist low income households will need to

be based on a balance between targeted and "self targeted" interventions. The

key lies in striking a balance in the choice of interventions among market and

nonmarket interventions. This balance should seek to minimize the resource cost between the administration of non market interventions and the efficiency loss from market interventions. Hence, it may be desirable to introduce distortions in the market for cassava by subsidizing its retail price while maintaining the farm level price at its undistorted level.

Fair price shops, food stamps and the provision of public goods (e.g., water, health facilities) that are effective low cost means of targeting urban households may not be an effective low cost means for targeting rural households. Hence, targeted interventions for rural households will likely need to take a different form than for those in urban areas. In either the case of rural or urban households, Sirinivasan (1983) cautions that "leakages" in targeted programs need to be a major matter of concern. Leakages occur when ineligible individuals are included in target groups through fraud or bad program design. Worse still are programs where many of the targeted get excluded. Srinivasan cites the case of India where a program for input subsidies to low income farm households was captured by higher income groups, thereby exhausting program funds for the targeted group.

FOOTNOTES

[1]/ See Hayami and Ruttan, Chapter 6: Sources of Agricultural Productivity Differences Among Countries. They refer to capital deepening as an increase in internal resources in agriculture such as investments in land improvements, livestock, the use of modern technical inputs (chemical and mechanical technology) and increases in human capital.

[2]/ Under assumptions that essentially preclude market failure, and provided that lump sum income transfers are feasible, welfare economics suggests that a noninterventionist strategy can, in principle, maximize efficiency in exchange, production and overall efficiency. Within this context, Buchanan (p. 14) draws the implication that "So long as governmental action is restricted largely, if not entirely, to protecting individual rights, person and property, and enforcing voluntarily negotiated private contracts, the market process dominates economic behavior and ensures that any economic rents that appear will be dissipated by the force for competitive entry." The problem, of course, is that in developing countries lump sum transfers are not feasible and the conditions that give rise to market failure are thought to be common. These include: imperfect competition, externalities, public goods, and risk and information asymmetries (commonly referred to as moral hazard and adverse selection). Whenever these conditions prevail, collective action by producers or consumers or by government can, in theory, give rise to an increase in welfare without making any other member of the economy worse off. See Stiglitz for a general discussion of these issues.

[3]/ For more insights into the economics of import substitution industrialization policies, see "comparative Advantage and Development Policy Twenty Years Later" in Essays in Honor of Hollis B. Chenery, M. Syrquin, L. Taylor nd W. Westphal, editors, Academic Press, N.Y., 1984 and J. N. Bhagwati, R. Brecher, and T. N. Srinivasan, "DUP Activities and Economic Theory", in Neo Classical Political Economy, D. Colander editor, Cambridge:Ballanger Pub. Co. 1984.

[4]/ There is some evidence to suggest that protection of the domestic industrial sector through trade interventions also adversely affect the production and transfer of agricultural technology by the private sector in some countries (Pray).

[5]/ In Peru, ECASA purchased domestic rice at prices 30 percent above prices charged to consumers in 1982 (Orden et. al.).

[6] The "official" rate was estimated as the weighted average of the parallel market rate and the rate offered by the central bank. The formula used to estimate the local currency to dollar exchange rate that might prevail in the absence of distortions in each period was:

$$E = \{B(Z)(P_m)^{1+\eta}(1+t_m)^{\eta}/A(W)(P_x)^{1+\epsilon}(1-t_x)^{\epsilon}\}^{1/(\epsilon-\eta)}$$

where $B(Z)$ and $A(W)$ are functions of exogenous variables Z, W appearing in the aggregate excess demand and supply functions for imports (m) and exports (x); P_m and P_x denote an index of border prices, in dollars, for imports and exports, t_m and t_x denote implicit net taxes on imports and exports, and ϵ and η denote the aggregate price elasticities of excess demand and supply respectively. See Roe and Greene for a derivation of this formula.

[7] Negative real interest rates arise in many developing countries because nominal rates remain fixed during periods of high inflation with ramifications to savings and credit rationing (IMF 1985b). At various times during the 1970s, negative real interest rates were particularly severe in Brazil, Ghana, Jamaica, Nigeria, Peru, and Turkey (IBRD 1983, p. 58).

[8] Kuznets lists the potential contributions of agriculture as (1) the low cost supply of food and raw materials for processing, (2) a market for producer and consumer goods produced by domestic industry, (3) a source of factor contributions (labor, capital) to the industrial sector and (4) a source of foreign exchange earnings and a source of foreign exchange savings through the production of import competing products.

[9] Evidence compiled by the World Bank (1985b) tends to support this view over a large number of developing countries. In comparing the adjustment policies of inward oriented countries, Balassa (1984, 19845) found that these countries lost export market share and, not withstanding substantial foreign borrowing, they grew less rapidly than outward oriented economies. The latter, relying more heavily on market forces, were found to adjust sooner to changing conditions in world markets by accepting a slowdown in economic growth while at the same time, pursuing output oriented policies of export promotion. Over the entire period, they grew much more rapidly. Inward oriented countries were: Egypt, Morocco, Philippines, Jamaica, Peru, Tanzania, Indonesia, and Nigeria. Outward oriented countries were: Tunisia, Kenya, Thailand and the Ivory Coast.

[10] Briefly, the 1973/74 shock was characterized fluctuations in prices of primary commodities, rising prices of energy products, and a slowdown in economic activity in the developed countries. The 1979/80 disturbance was characterized by another increase in energy prices, sharp increases in real interest rates, declining volume and declining terms of trade for commodity exporters (IMF 1984,1985b).

[11]/Since Anne Krueger's pioneering article on the political economy of rent seeking, it has become more evident that the process of seeking to distort incentives can induce an additional source of welfare loses. The core of the argument is that groups affected by interventions may engage in lobby activities which consume resources that would otherwise be employed in productive activities. The withdrawing of these resources from what are otherwise productive activities and allocating them to unproductive activities can contribute to welfare losses.

[12]/This situation occurs when the government's policy-decision making apparatus designs and implements policies based on a false perception of the problem confronting the economy or on a false perception that the manipulation of a policy instrument will have a particular result. An Example of errors of cause-effect is the use of policy instruments to protect the import competing sector of the economy based on the mistaken belief that the outcome will lead to an industrial sector that can compete in world markets and eventually induce a more rapid rate of economic growth.

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