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THE role of price and trade policies in promoting agricultural development is important because they determine in substantial part the economic incentives necessary to encourage greater efficiency of resource use. There is also increasing recognition that relative price movements create opportunities for institutional change and that institutional innovations cannot be viable unless the economic benefits to individuals or groups in society exceed the costs (Hayami and Ruttan, 1985). Beyond the production effects, changes in relative agricultural prices, especially of staple food, have significant implications for income distribution in low-income countries (Mellor, 1973).

Until recently, it has been conventional to examine the direct price effects of economic policies on the agricultural sector. Price and trade policies would be evaluated in terms of their direct impact on the producer prices of agricultural commodities relative to other products — for example, other agricultural commodities or nonagricultural products — at various levels of aggregation. At the most aggregate level, the domestic terms of trade (defined as the ratio of agricultural to nonagricultural prices) has been widely used as a measure of the price competitiveness of agricultural production (Krishna, 1967). Within agricultural, the differential incentive effects of price and trade policies on food and export crops have been given particular attention (Bautista, 1986).

Recent research has demonstrated the importance of the foreign trade and payments regime in influencing agricultural production incentives in developing countries (LDCs) not only in terms of its direct effect on the domestic price structure but also through the induced effect on the real exchange rate. In the past, most of the empirical work on the impact of trade and exchange rate policies has focused on the differential incentives created for manufacturing industries and their consequences (e.g., Little, Scitovsky, and Scott 1970; Bhagwati 1978; and Krueger 1983). Indeed, a dominant element in the trade and payments regime in many developing countries throughout most of the postwar period has been the heavy protection accorded to import-competing industries. With the growing

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recognition, in recent years, of the critical role of agriculture in the development process (a departure from the earlier emphasis on industrialization), there has been a surge of interest in the effects of industrial protection and other aspects of the trade and exchange rate regime on the agricultural sector.¹

To provide historical perspective, this paper first reviews the evolution of LDC development strategies, indicating the character of past trade and industrial policies, their qualitative effects on some aspects of economic development, and the development strategy implications of a less hospitable external economic environment. How production incentives in agriculture, sectoral output, and the distribution of incomes have been affected by the domestic policy climate is then examined more closely, with illustrative findings from existing studies. The empirical evidence indicates that price and trade policies adopted in many developing countries have discriminated against agriculture, especially when the indirect effect through the induced change in the real exchange rate is taken into account. This applies particularly to the lower-income LDCs. The implications for price and trade policy reform to promote agriculture-based development, some of the problems likely to attend such reform efforts, and the role of external assistance in support of development strategy are addressed in the remainder of the paper.

PAST DEVELOPMENT STRATEGIES FAVORED INDUSTRIALIZATION

Most present day LDCs were under colonial rule for a long period, during which their economy was closely integrated with that of the colonizing country. After independence, rapid industrialization became a dominant objective of development strategy. For many countries, policy was motivated by a desire to diversify the economy from a perceived overreliance on primary production and, more generally, to redirect the country's production capacity towards providing a basis for modernizing the economy. To many political leaders and economic planners industrialization and economic development became virtually synonymous. Industry was expected to generate extensive employment opportunities, absorbing excess labor from the agricultural sector; at the same time, labor productivity would increase throughout the economy and living standards of the population would improve.

The concomitant desire for economic independence led, perhaps inevitably, to an industrialization strategy based on import substitution, at least initially. The

¹ The early studies include two IFPRI research reports authored by Garcia (1981) on Colombia, and Cavallo and Mundlak (1982) on Argentina; subsequent studies include Oyejide (1985) on Nigeria, Tshibaka (1986) on Zaire, and Bautista (1987) on the Philippines. The initial results of a recently completed World Bank study involving 18 countries are reported in Krueger, Schiff, and Valdés (1988).

domestic market was there for the taking, while export prospects looked bleak. Import-competing industries were promoted behind high tariff walls and/or quantitative import restrictions. Since the initial expansion of the manufacturing sector usually requires heavy imports of capital goods and materials, LDC governments also made available the required foreign exchange at highly favourable terms.

Typically the first phase of import-substitution policies focused on the protection of light industry (mainly producing labor-intensive, nondurable consumer goods). Most low-income LDCs are still at this stage in their industrial development. For others with a longer history of industrialization, the limited size of the domestic market eventually closed the growth opportunities in light consumer goods production. Their governments then took one of two alternative directions for industrial and trade policies. One was the extension of protection beyond light industry into the more skilled labor-, capital- and technology-intensive 'upstream' industries. This 'second phase' of import substitution was chosen by most Latin American countries in the 1950s and 1960s and also by many Asian countries in the 1960s and 1970s.

The other direction, taken by a smaller number of LDCs — most prominently, South Korea and Taiwan in the 1960s, was to encourage the exporting of unskilled labor-intensive, nondurable consumer goods into world markets. This was achieved largely through policy changes toward lower industrial protection and more realistic exchange rates, as well as direct subsidies to manufactured exports and the development of export infrastructure. These countries benefitted from the rapid expansion of the economies of the industrialized countries as well as the remarkable decline in industrial protectionism in these developed countries (DCs) from World War II through the early 1970s.²

By the early 1970s relative factor supplies in the export-oriented LDCs had shifted away from the abundance of unskilled, low-wage labor. They began exporting more skill-, capital-, and technology-intensive goods, and this contributed significantly to the continued rapid growth of their economies.

The other, larger group of developing countries — those that entered the second phase of industrial import substitution — have remained basically inward-oriented, unable to export the capital- and technology-intensive products of protected upstream industries. Downstream, consumer good industries were forced to rely on poor-quality and high-cost material inputs, making them also uncompetitive in world markets. Neither domestic nor foreign demand has therefore provided a significant, sustainable source of growth for their economies. In the 1970s, as manufactured exports came to be recognized as a 'good thing', subsidies to industrial export producers began to be selectively granted. Such

² Successive rounds of GATT-sponsored multilateral trade negotiations reduced tariffs on industrial products from an average of about 40 percent in 1947 to 6-8 percent in most DCs even before the Tokyo Round (1974-79).

export incentives, however, fell far short of fully offsetting the general bias in the protection structure against exports.

Agricultural export producers were in an even worse position; apart from the lack of access to such selective export subsidies and the price disincentive due to real exchange rate overvaluation (arising in large part from the heavy protection of import-competing industries), agricultural products were generally subject to export taxes (explicitly, or implicitly through the pricing policy of state marketing boards). As for food crop producers, various sources of 'urban bias' in LDC policies tended to bring food prices down (Lipton, 1977); this helped to keep real wages low, reducing the cost to industrial enterprises of recruiting labor from the agricultural sector.

This characterization of the evolution of LDC development strategies is admittedly somewhat stylized. The important point, however, is that industrial growth in the large majority of LDCs has not realized the expectations of its early advocates. The industrialization process has been isolated from the overall growth of the basically agricultural economy, benefiting only a small segment of the population. Its modernizing impact has not been felt in other sectors of the economy, which development policies have tended to neglect or discriminate against. After an initial spurt in domestic investment and output growth, import-substitution policies have resulted eventually in a marked slowdown in industrial expansion. Extensive employment opportunities have not been generated, owing to the strong incentive bias favoring capital-intensive industries. Developing countries that promoted labor-intensive industrial exports have fared better, in terms of the higher rates of growth of industrial output and employment observed during the 1960s and the 1970s.

Recent unfavourable developments in the international economy, including the slower economic growth in developed countries and rising protectionism against labor-intensive manufactured imports,³ give cause for pessimism about 'the feasibility of continuing to rely on manufacturing export-led growth as the major development dynamic for most LDCs during the next decade' (Adelman, 1984, p.938). In terms of development strategy for the next five to ten years, an adverse external environment would imply, to some developmental economists, that foreign trade is not likely to serve anymore as the primary source of economic

³ 'Trade in textiles was the first victim, followed closely by trade in footwear, leather goods, steel, shipbuilding, cars and consumer electronics' (World Bank, 1987, p. 133). Since the mid-1970s, even as tariff rates were being lowered as part of the GATT-sponsored Tokyo Round of multilateral negotiations, the number and restrictiveness of nontariff barriers — in the form of voluntary export restraints, bilateral quotas, and various administrative measures — have grown significantly. 'Such restrictions cover large volumes of imports and affect developing countries' exports in particular' (World Bank 1987, p. 10). Particularly hard hit were exporters in the 'lower middle-income economies' (by World Bank definition, with GNP per capita in 1985 from 400 to 1,600 US dollars), whose average annual export growth rate was reduced from 6.8 percent in 1965-80 to only 1.1 percent in 1980-85.

growth for many LDCs that are not already established exporters. On efficiency grounds, however, it is acknowledged that an open development strategy is essential, in which a neutral trade regime is an important component. Gains from trade should still be sought, and the exporting of labor-intensive manufactured goods and primary products needs to continue (especially since capital-intensive producer goods have to be imported). But government subsidies to manufactured exports are inappropriate. Also, the principal engine of growth has now to be internally driven.

Given the dominance of agriculture and the rural sector in most low-income LDCs, a development strategy that gives primary emphasis to agricultural growth is analytically attractive. Under this strategy, agriculture and the rural sector assume a pivotal role in the development process. Agricultural growth in itself is not the ultimate objective; it only serves as an intermediate objective. However, accelerated agricultural growth and the generation of intersectoral linkages with the rest of the economy are considered to represent the key to rapid, broad-based, and self-sustaining economic development (Mellor, 1976, 1986).

PRICE AND TRADE POLICY BIASES AGAINST AGRICULTURE

Restrictions on foreign trade affect relative prices and production incentives in two ways. One is through the differential effect on the domestic prices of tradeable goods; the other is through the effect on the real exchange rate which in turn affects the domestic prices of tradeable goods relative to home (nontradeable) goods. For example, import duties and quotas directly raise the domestic price of import-competing products relative to exportables, encouraging a shift away from export production. The same policy instruments have the effect of reducing the demand for imports which lowers the price of foreign exchange, making the domestic prices of tradeable goods fall relative to home goods and hence indirectly biasing production incentives against both import-competing and export goods. Protection to industrial import substitutes then penalizes the production of agricultural goods in the following ways: (1) the rise in the domestic price of protected industrial output reduces the relative price of agricultural products; (2) the cost of industrial inputs (fertilizer, pesticides, farm equipment) to agricultural production increases; and (3) the induced appreciation in the real exchange rate renders agricultural export and import-competing products less profitable relative to nontradeables.

General equilibrium analysis of the direct and indirect price effects of trade restrictions based on the simple classification of commodities into home goods, importables and exportables (Sjaastad, 1980) has been extended to distinguish between agricultural and nonagricultural tradable goods in empirical application to developing countries. Studies on Argentina, Chile, Colombia, Nigeria, Peru,

and Philippines and Zaire indicate that the heavy protection of industrial products in those countries have indirectly taxed agricultural import-competing and export production to a significant extent (Valdés, 1986). In the case of Peru, for every 10 percent uniform tariff rate on industrial imports, 'an implicit tax of 5.6 percent (with respect to home goods) is imposed on import-competing agricultural activities (such as rice) and an implicit tax of 6.6 percent is imposed on exportable agricultural goods (such as cotton and sugar)' (p.629).

Apart from the setting up of import barriers to protect domestic industry, other government policies not specifically directed to the agricultural sector have affected relative incentives in developing countries. Since the early 1970s, as indicated above, many of these countries have actively encouraged the expansion of manufactured exports, providing export producers with such subsidies as low-interest credit, labor training subsidy, import duty drawback, and export credit insurance — which partially compensated for the general policy bias against exports. For example, industrial exports were given direct subsidies at average rates of four percent in Bangladesh and sixteen percent in the Philippines during 1979-80, while agricultural exports were taxed three to four percent on average in both countries; on the other hand, import-competing industries were being directly protected by tariffs and other import-related taxes of 28 percent in Bangladesh and 26 percent in the Philippines (Bautista, 1988).

A country's monetary and fiscal policies, foreign borrowing, and nominal exchange rate management may affect critically the real exchange rate and hence the profitability of agricultural tradeable goods production. In the Philippines, for example, the government borrowed heavily abroad and pursued expansionary macroeconomic policies in the face of the large current account deficits after the 1973-74 oil price shock; this contributed to the worsening real exchange rate overvaluation during the second half of the 1970s and early 1980s (Bautista, 1987). For oil-rich Indonesia and Nigeria, the sharply increased oil revenues in the mid-1970s led to the 'Dutch disease' syndrome, squeezing profitability in non-oil tradable goods sectors both by directly bidding resources away from them and by the appreciation of the real exchange rate (due to the increase in money supply and the inflation rate while the nominal exchange rate was held fixed).

There are, finally, the agricultural sector-specific policies that directly affect production incentives for farmers, which can reinforce or mitigate the indirect price penalty due to industrial and macroeconomic policies. At one time or another, LDC governments have suppressed producer prices of specific farm products through the operation of agricultural marketing boards, imposition of explicit export taxes, or both. In some countries systems of subsidies for agricultural inputs have partly compensated for the low prices of farm output. It has been observed, based on a cross-commodity analysis involving 33 developed and developing countries, that the extent of direct agricultural protection is a function of resource endowments and the stage and pattern of development (Binswanger and Scandizzo, 1983).

A large number of studies have been carried out on the price effects of sector-specific policies for particular agricultural products, and they reveal wide differences across products, especially between food and export crops. Of particular interest for present purposes are the findings of a recent World Bank study on the political economy of agricultural pricing policies in eighteen developing countries, which quantifies both direct and indirect effects on a comparable basis (Krueger, Schiff, and Valdés, 1988). Table 1 contains estimates of the 'direct' nominal protection rate (DNPR), representing the deviation of the domestic price from the border price at the official exchange rate, for the main import-competing food and export crops during 1975-79 and 1980-84 derived in the World Bank study.⁴ Negative price protection against export crops appears to be the norm. Only for two countries (Portugal and Ghana) is substantial positive protection shown. Also, based on the simple unweighted DNPR average values it is striking that the negative protection accorded to export crop producers remained constant between 1975-79 and 1980-84. The import-competing agricultural food products, on the other hand, were given positive direct protection, with some exceptions; again, the degree of protection was comparable during 1975-79 and 1980-84 in terms of average DNPR values. For the lower-income LDCs as a group, the positive direct protection for food crops on average was much smaller — eleven percent in 1975-79 and thirteen percent in 1980-84; indeed, excluding Ghana (an extreme outlier case), the average DNPR values are seen to decline drastically to four percent in 1975-79 and minus three percent in 1980-84.

Also presented in Table 1 are estimates of the 'indirect' nominal protection rate (INPR) which take into account the effects of trade and macroeconomic policies through their effects on the real exchange rate, and of the 'total' (direct plus indirect) nominal protection rate (TNPR). Except for Chile in 1975-79, real exchange rate overvaluation is shown for each country (frequently, quite substantial), so that the TNPRs indicate smaller price protection (or greater price disprotection) than the corresponding DNPRs. On average, the INPR estimates are more than double the DNPR estimates for export crops. In some cases the positive direct protection accorded to food products is swamped by the negative indirect price effects (wheat in Colombia, corn in the Philippines and rice in the Ivory Coast and Sri Lanka), resulting in negative total protection. The lower-income LDCs tend to tax more heavily, at average TNPRs of -22 percent for food crops and -46 to -48 percent for export crops.

The quantitative importance of the indirect price effects of trade and macroeconomic policies transmitted through real exchange rate overvaluation, is also

⁴ Some adjustments were made for transport costs, storage costs, and quality differences. This measure does not include the protection or penalty from the pricing of intermediate inputs. Due to data limitations, not all country studies in the World Bank project were able to derive estimates of the 'effective protection rate' that would have quantified the extent to which domestic agricultural value added had been protected. It would appear, however, that the protection structure is not significantly affected by taking into account the cost of intermediate inputs because of the latter's relatively small share in the value of agricultural output and because 'most input subsidies were inframarginal' (Krueger, Schiff, and Valdés, 1988; p. 258).

indicated by findings in other LDC studies. Binswanger and Scandizzo (1983) find large differences (ranging from 20 to 82 percent) between their estimates of the 'nominal protection coefficient' ($NPC = 1 + DNPR$) and the 'adjusted net protection coefficient' (ADNPC), the latter measure representing total protection, for major food and export crops in Bangladesh, Egypt and Tanzania.

TABLE 1
Direct, Indirect, and Total Nominal Protection Rates (Percent)

Country	Product	1975-79			1980-84		
		Direct	Indirect	Total	Direct	Indirect	Total
I. Export crops							
Argentina	Wheat	-25	-16	-41	-13	-37	-50
Brazil	Soybeans	-8	-32	-40	-19	-14	-33
Chile	Grapes	1	22	23	0	-7	-7
Colombia	Coffee	-7	-25	-32	-5	-34	-39
Côte d'Ivoire	Cocoa	-31	-33	-64	-21	-26	-47
Dominican Rep.	Coffee	-15	-18	-54	-32	-19	-51
Egypt	Cotton	-36	-18	-33	-22	-14	-36
Ghana	Cocoa	26	-66	-40	34	-89	-55
Malaysia	Rubber	-25	-4	-29	-18	-10	-28
Pakistan	Cotton	-12	-48	-60	-7	-35	-42
Philippines	Copra	-11	-27	-38	-26	-28	-54
Portugal	Tomatoes	17	-5	12	17	-13	4
Sri Lanka	Rubber	-29	-35	-64	-31	-31	-62
Thailand	Rice	-28	-15	-43	-15	-19	-34
Turkey	Tobacco	2	-40	-38	-28	-35	-63
Zambia	Tobacco	1	-42	-41	7	-57	-50
Average: All countries		-11	-25	-36	-11	-29	-40
Average: Lower-income LDCs		-13	-33	-46	-13	-35	-48
II. Food crops							
Brazil	Wheat	35	-32	3	-7	-14	-21
Chile	Wheat	11	22	33	9	-7	2
Colombia	Wheat	5	-25	-20	9	-34	-25
Côte d'Ivoire	Rice	8	-33	-25	16	-26	-10
Dominican Rep.	Rice	20	-18	2	26	-19	7
Egypt	Wheat	-19	-18	-37	-21	-14	-35
Ghana	Rice	79	-66	13	118	-89	29
Korea	Rice	91	-18	73	86	-12	74
Malaysia	Rice	38	-4	34	68	-10	58
Morocco	Wheat	-7	-12	-19	0	-8	-8
Pakistan	Wheat	-13	-48	-61	-21	-35	-56
Philippines	Corn	18	-27	-9	26	-28	-2
Portugal	Wheat	15	-5	10	26	-13	-13
Sri Lanka	Rice	18	-35	-17	11	-31	-20
Turkey	Wheat	28	-40	-12	-3	-35	-38
Zambia	Corn	13	-42	-55	-9	-57	-66
Average: All countries		20	-25	-5	21	-27	-6
Average: Lower-income LDCs		11	-33	-22	13	-35	-22

Source: Tables 1 and 2 in Krueger *et al.* (1988).

Note: Lower-income LDCs do not include Argentina, Brazil, Chile, Korea, Malaysia, and Portugal.

Because production structures, consumption patterns, foreign trade, and the distribution of incomes are inextricably intertwined, they need to be examined simultaneously and their interactions analyzed within an integrated macroeconomic framework to be able to capture fully the economy-wide repercussions of agricultural pricing and trade policies. Accordingly, some studies have made use of multisectoral computable general equilibrium (CGE) models that give emphasis to agricultural activities and their linkage to the other production sectors, distinguishing rural and urban households in their income generation and consumption patterns.⁵ For example, a dynamic 29-sector CGE model for South Korea is developed in Adelman and Robinson (1978) to simulate the effects of various policy measures, mostly rural-oriented, aimed to policy interventions largely through price changes, and that 'among the price effects, the most significant impact on the size distribution of income is due to changes in the agricultural terms of trade' (p.185), to which the relative incomes of rural and urban groups are quite sensitive.

Based on a 10-sector CGE model for the Philippines, it has been found that trade liberalization would raise rural income more significantly than urban income, and agricultural production would expand more than on agricultural production (Bautista, forthcoming). These results are consistent with the widely-used assumption that agricultural output in developing countries has a higher degree of 'tradability' — and thereby a greater sensitivity to real exchange rate changes — than nonagricultural output. For Argentina, dynamic model simulations by Cavallo and Mundlak (1982) indicate that the quantitative effects of trade liberalization and exchange rate management on agricultural incentives and productivity improvements are substantial; even with a food price subsidy (no decline of wages in terms of food), an impressive increase in per capita output growth of about 25 percent is achieved in twenty years.

The price bias against agriculture due to trade and macroeconomic policies, as observed above for many developing countries, effectively leads to a resource transfer out of the agricultural sector. Offsetting this would be the amount transferred into agriculture through government spending. Calculations of net resource transfers out of agriculture show an annual average of about 25 percent of agricultural value added in the Philippines during 1970-82 (Intal and Power, 1987), whereas in Malaysia (where the real exchange rate has not been significantly overvalued) the corresponding figure is only five percent (Jenkins and Lai, 1988).

IMPLICATIONS FOR DEVELOPMENT POLICY

While the extraction of agricultural surplus to finance industrial capital formation is frequently assumed to be a concomitant to structural transformation

⁵ For a discussion of the usefulness and limitations of CGE modeling for policy analysis in developing countries, see Bautista (1988b).

during development, one can question the efficiency with which the transferred resources are used outside agriculture. In virtually every developing country where the industrial sector has been highly protected, policy-induced market distortions have led to the inefficient use of investment resources for manufacturing. At the same time, one cannot discount the opportunities for rapid productivity growth in agriculture if the capital requirements for rural productivity growth in agriculture if the capital requirements for rural infrastructure are met. Indeed, the adoption of improved agricultural technologies in many Asian countries since the late 1960s has been influenced significantly by the extent of public investments in irrigation, transport, electrification, health and education in the rural areas (James, Naya, and Meier, 1987).

An additional consideration is the stimulus to nonagricultural production to be induced by increased rural incomes due to rising agricultural prices and productivity. This form of rural growth linkage is at the heart of recent proposals for the adoption of an employment-oriented agriculture-based development strategy.⁶ The effectiveness of such development strategy depends crucially on the expansion of the real income of rural households that initially results from agricultural growth. This will generate, as a first-round effect, an increased demand for farm inputs and, more importantly, for food and labor-intensive industrial goods and services that bulk large in the consumption of rural households. Additionally, this demand stimulus will set in motion a sequence of employment and income multiplier effects on the rural, regional, and national economies.

Viewed from the supply side, agricultural output can be increased through (1) movements along the supply function via improvements in agricultural price incentives, and (2) shifts in the supply function via increases in total factor productivity. The basic assumption is that agricultural producers, both large and small, are capable of responding to improvements in the economic environment. Concerning (1), the policy-induced biases against agriculture, indicated above, need to be eliminated, perhaps gradually. The removal of export taxes, both explicit and implicit, and of any price disprotection of food crops, would be significant steps in the right direction for many developing countries. On efficiency grounds, it is preferable to rely as much as possible on land, income and consumption taxes, rather than on trade taxes that distort production incentives. If revenue considerations dictate that export taxes and import tariffs cannot be avoided, the tax rate should at least be made uniform across all commodities.

It bears emphasizing that the real exchange rate is an important determinant of agricultural production incentives. 'Getting prices right' for agriculture then requires that the conduct of trade and macroeconomic policies, not just sector-specific pricing policies, be examined also for their effects on the real exchange rate. It will be necessary to prevent the real exchange rate from being overvalued,

⁶ See Mellor (1976) for an early statement.

so as not to impair the price competitiveness of agricultural tradable goods production. This would require that import restrictions unduly protective of domestic industry be liberalized and that a sustainable trade balance be maintained. A more realistic exchange rate policy would in the long run encourage not only export production but also efficient import substitution in agriculture as well as in the rest of the economy.

Increases in agricultural productivity can be achieved by shifting the structure of public investment toward agriculture and the rural sector, away from the past bias favoring urban-based, capital-intensive industries. Improvements in rural transport, electrification, agricultural credit, and irrigation will serve to increase the agricultural supply response to price incentives in many LDCs. This is in view of past neglect in the provision of these critically needed public goods. A very high payoff can also be expected from greater government support for agricultural research and extension that will generate and disseminate productivity-enhancing technologies. Because new technologies need to be adapted to local conditions, developing countries cannot rely simply on foreign sources but will need to develop their own agricultural research system as well as the human capital and institutional structure needed to sustain it. It also bears emphasis that farmers will adopt new technologies only if they can expect their incomes to improve. It is therefore important for agricultural technology diffusion and productivity growth that price incentives are in place. As pointed out recently by Ahmed and Mellor (1988, p.2), 'enforcement of low agricultural prices tends to go hand in hand with the neglect of the modernization of agriculture.'

Beyond the direct promotion of agricultural growth, strengthening the multiplier or linkage effects on the rest of the economy will also be necessary. Because food and other labor-intensive goods make up the large bulk of consumption of rural households, sectors efficiently producing such products — principally small-scale producers in regionally dispersed areas — would benefit from the rise in rural consumption expenditure. Whether supply will be able to match the increased demand for those products would depend on the availability of production inputs and their prices. For instance, if intermediate inputs to agricultural and nonagricultural production in the rural areas are made artificially scarce or expensive by a restrictive foreign trade regime and/or an underdeveloped domestic transport system, the full benefits from increased final demand in terms of output growth and labor absorption will not be realized. It is also clear that the improvement of rural infrastructure will be critical not only to the generation and diffusion of improved agricultural technologies, but also to the development and integration of rural markets.

The total employment effect of a given increase in rural income will be greater, and output growth more broadly based, the more skewed is the consumption pattern toward food and other labor-intensive products. Households of the less

affluent, small agricultural and nonagricultural producers are most likely to fit this pattern. Families of the more prosperous owners of large farms and industrial enterprises in developing countries tend to spend more on capital-intensive goods, whether locally produced or imported. It is therefore important that improvements in price incentives, production technologies and infrastructure facilities should reach the small producers in regionally dispersed areas.

The magnitude of agricultural growth linkages is also determined by the labor intensity of nonagricultural production. On the supply side, the need to stretch the LDCs scarce capital resources demands the 'appropriate' choice of labor-intensive industrial technologies and products (Mellor, 1986). At the same time, a broad-based, self-sustaining growth process requires substantial participation by the low-income, wage-earning population, as indicated above. Unfortunately, trade and price policies in many LDCs have discriminated against labor-intensive industries, including small enterprises and regionally dispersed industries (Little, Scitovsky, and Scott, 1970). Price and trade policy reform should do away with distortionary incentive effects on factor use, size structure, and location choice. It may also be necessary to mobilize resources (e.g., credit, transport, electricity, technology, labor training) in support of rural industries, considering that they are in general smaller scale, less capital-intensive, and make greater use of local materials in comparison with their urban counterparts.

SOME PROBLEMS OF PRICE AND TRADE POLICY REFORM

The disparity between economic theory and reality, in the context of developing countries, is probably nowhere as pronounced as in the choice of policies affecting domestic agricultural prices. That sector-specific and economy-wide policies in many predominantly agricultural economies should show a persistent price bias against agriculture can be interpreted to imply that the pursuit of long-run economic efficiency and growth is not the only motivating factor in LDC policymaking.

There are at least three reasons for the inability or unwillingness of LDC governments to move toward a more neutral (or less distorted) structure of incentives through price and trade policy reform. First, there are political constraints to the choice of economic policies; in particular, the 'determination of agricultural prices is intensely political' (Ahmed and Mellor, 1988, p.1). Second, instability of international commodity prices under a more open trade policy, will be transmitted more fully to the domestic price structure. Third, LDC policymakers are profoundly concerned about transitional difficulties related to the short-run negative fiscal, balance-of-payments and growth effects that may arise in the process of adjusting to a more open trade regime.

It would be unrealistic to attempt to examine fully, within the confines of this paper, the issues surrounding each of these sources of anxiety.⁷ What follows is only a brief presentation of some of the important points and related empirical evidence.

Political Economy Considerations

For political reasons governments quite often do not adopt economically efficient policies. The political economy literature on intercountry differences in agricultural price protection suggests a deterministic view of the political process that leads to decreasing levels of agricultural taxation over time as a country grows richer and domestic industry expands.⁸ This is based on the premise that 'governments do what they deem necessary to survive . . . (and that) economic policies are . . . a means to maintain political support' (Schultz, 1978, p.10).

Policy makers are not a homogeneous group, whether in a developed or developing country setting. There are likely to be different voices in the policy debate within the government. Except where an individual personality or a powerful ideology dominates, unanimity of opinion on policy choices is rare. It is not clear that any set of economic policies would be deemed desirable by the protagonists without knowledge of the likely effects on relative prices and associated distribution of net benefits. Indeed the role of knowledge in influencing economic policies can be very significant, especially in cases where the indirect effects of government policy are not readily discernible. In the present context, the indirect price effects of trade and macroeconomic policies on agriculture, evaluated from a general equilibrium perspective, can diverge from and also can outweigh their partial equilibrium direct effects, as emphasized above. Increased public understanding of the benefits of trade and exchange rate policy reform can help generate political pressures offsetting the vested interests that seek to maintain industrial protection at the expense of agriculture.

Following the line of political-economy reasoning, one can expect that price discrimination against agriculture in developing countries will be reduced over time

⁷ The interested reader can consult among other references, Schultz (1978), Anderson and Hayami (1986), Knudsen and Nash (1988), and Choksi and Papageorgiou (1986).

⁸ The combined influence of income per capita and agricultural share in the national economy on the level of agricultural protection is explained in the following way. The need to tax agriculture is greater in a low-income developing country where the other sectors are only minor contributors to total production. In the political market for protection, the smaller sized, better educated, urban-based industrialist class is able to lobby the government more effectively than the numerous farmers in widely scattered rural areas with underdeveloped transport and communication infrastructure. As a country grows richer and domestic industry expands, agricultural taxation becomes less of an imperative; also, as the number of agricultural producers decline and rural infrastructure improves, there is less difficulty in organizing for political lobbying to advance farm interests. Furthermore, opposition to higher agricultural prices is weakened by the reduced dependence of the real income of urban workers on food prices. All this is expected to result in decreasing (increasing) levels of agricultural taxation (protection).

in the course of economic growth — as the weight of agriculture in their economies becomes smaller, as the importance of food prices in urban household expenditure declines, and as the cost of transportation and communication in the rural sector decreases relative to the urban centers. But surely, in countries where the existing agricultural price disprotection has the potential to seriously impair their growth prospects, hastening the reduction of the agricultural price bias would be warranted. This can be facilitated by increasing the political cost of taxing agriculture relative to the political benefit. The means by which this can be done would best be analyzed at the individual country level, since the precise nature of the political market for agricultural protection differs from country to country. A move towards decentralization of the political decision-making process will undoubtedly help, giving rural producers greater weight.

Domestic Price Instability

For many developing countries, domestic prices of agricultural products have indeed been more stable than their border prices, based on the calculated standard deviations or annual price levels (Krueger, Schiff, and Valdés, 1988). Moreover, it is in the 'staple group — food products in the consumption basket of urban consumers — that the domestic price instability is relatively lower, indicating that the urban bias in LDC agricultural pricing policy applies not only to the subsidization of average food prices but also to the reduction in price variability.

Because the stability of food prices is a politically sensitive issue in most LDCs, it is not uncommon to observe that levels of protection/taxation for food crops are increased or decreased from year to year to compensate for sharp changes in foreign prices (Intal, and Power, 1987; and Dorosh, 1988). The mechanism for domestic price stabilization is typically provided by a buffer stock system and government monopoly of the country's foreign trade of the staple foodgrains, together with the enforcement of price targets for consumers and producers.

If international suppliers are reliable, which seems to be the case for most food staples (rice and white corn are the possible exceptions), reliance on foreign trade is more cost-effective than public stockholding in coping with interannual fluctuations in both domestic output and world prices (Reutlinger and Bigman, 1981). There is a stronger rationale for interseasonal holding of stocks, since trade and seasonal storage are not close substitutes — although proper timing of trade flows can also generate some savings (Siamwalla, 1988).

Government intervention has also resulted in a less unstable domestic price of export crops in many LDCs compared to the border price. However, the price fluctuations have not been symmetrically reduced; especially in the 1970s, the peaks tended to be cut off while prices were not being raised in the troughs. In the Philippines, for example, the gains to agricultural export producers from the currency devaluation and increased world commodity prices during the first half

of the 1970s were partially siphoned off through various 'stabilization tax' measures, but when export prices fell precipitously later in the decade, no corresponding price subsidies were forthcoming (Bautista, 1987).

Variable tax rates for primary exports (i.e., high rates when export prices are high) have been employed in many LDCs to reduce domestic price instability for export producers (Knudsen and Nash, 1986). This approach to agricultural price stabilization avoids the high fiscal costs associated with interventions that involve government handling and storage of commodities. However, the government budget is rendered more unstable. The adverse budgetary effect can be avoided if the variable import tax/subsidy scheme is operated in conjunction with a buffer fund — in which the tax proceeds are placed at time of high export prices and on which subsidies to producers are drawn when export prices are low.

There are other means of stabilizing agricultural prices and reducing risks in the face of world price fluctuations for both food and export crops. The lack of private, risk-diffusing mechanisms in most developing countries would seem to suggest a high social payoff to government assistance in the development of commodity futures markets and rural capital markets. It may well be that policy-induced and institutionalized distortions prevent the natural development of these markets, in which case they may need to be corrected before government intervention can be rationalized. Also, the dynamics of government mediation needs to be monitored and the effectiveness with which the price stabilization objective is being met closely examined, ensuring that it does not merely add another layer of rent-creating market distortions or induce other interest groups to promote costly government interventions elsewhere.

In any case it seems clear that there is no inherent conflict between the adoption of a more open trade regime to improve agricultural production incentives and government efforts to reduce agricultural price instability. The two objectives are conceptually distinct and can be kept separate in practice.

Costs of Transition

Even assuming that product and factor prices can adjust quickly to the changed environment there will be some costs and delays in reallocating resources to the newly profitable sectors and expanding domestic production and exports. Significant output losses in previously protected industries may exceed the short-run gains from the improved incentive structure slowing down economic growth. If in the short run imports increase faster than exports, the current account will deteriorate before it improves. In order to overcome agricultural supply constraints and hasten the expansion of domestic output and exports, it may be necessary to increase government expenditure on rural and export infrastructures. Public resources may be required also to compensate for any adverse effects of trade liberalization on the poor (for example, temporary food subsidies to offset

rising food prices). On the revenue side, the lowering of trade taxes leads to a negative fiscal effect in the short run that can add to an existing government budget deficit. These transitional difficulties can be mitigated or aggravated by macroeconomic policies (Mussa, 1987). For example, if trade liberalization is deflationary in the short run, (due to domestic price reduction in the import-competing sector), or the economy is already in a recession, expansionary fiscal and monetary policies accompanying a nominal exchange rate devaluation would be warranted. It is a major problem for many LDC governments, however, to find ways to offset the decline in revenue due to lower trade taxes.

Initial conditions in the developing country contemplating price and trade policy reform have a considerable influence on the severity of the transitional problems. Low-income LDCs where trade taxes account for a large proportion of government revenue would be vulnerable to the negative fiscal effect of lowering tax rates on exports and imports. However, to the extent that quantitative import restrictions can be replaced by tariffs the problem of short-run revenue loss is alleviated. These economies are also characterized by low supply elasticities, requiring a great deal of infrastructure improvement to be able to substantially expand domestic output and exports. In many cases, external financial assistance would be needed.

Unfavorable initial conditions also face another group of LDCs, the highly indebted countries. To restore their creditworthiness, trade and exchange rate policy reform and reduction of government deficits are necessary to improve significantly their external asset position over time. It has been widely suggested that, in countries with high inflation rates and large budgetary deficits, macroeconomic stabilization is a necessary precondition to implementing trade liberalization for long-run growth (e.g., Sarantis, 1987). Again, external finance (with some debt relief, it is hoped) would facilitate the transition. Among other things, it can permit higher levels of imports than would otherwise be possible, avoiding the additional inflationary and recessionary pressures of trade liberalization.

Many of these countries have been able to obtain financial assistance from multilateral sources, chiefly the World Bank and IMF, in the form of structural or macroeconomic adjustment loans. These loans are meant to facilitate the implementation of policy reforms necessary to achieve financial stability, balance of payments equilibrium, and sustainable economic growth. Reform in the foreign trade regime is invariably a key element in LDC adjustment programs, aimed at making incentives more equal across sectors. Considering the incentive biases against agricultural production, the effects of structural adjustment should be favorable to agriculture. Producers of agricultural tradeable goods would benefit directly and indirectly from the lowering of industrial protection required by a more uniform incentive system through trade liberalization. As the agricultural sector responds over time to the trade policy reform, the country's overall economic performance should also improve, given the large share of agriculture in GDP and strong linkage effects of agricultural growth on the rest of the economy.

On the other hand, given the large government expenditure on agriculture (as a proportion of GDP) in some developing countries, fiscal retrenchment associated with structural adjustment can have a particularly adverse impact on agricultural production. In Brazil, for example, agricultural producers have been so accustomed to negative rates of interest on rural credit that the credit squeeze during the first half of the 1980s contributed heavily to the observed decline in grains and oil-seeds output (Dias, 1988). By contrast, the agricultural sector in the Philippines benefited from the sharply increased government spending on rural infrastructure initiated in late 1986 as part of a new agenda for economic recovery and long-run growth.

An interesting inference from the recent World Bank comparative study of trade liberalization episodes mentioned above is that 'liberalization attempts have not resulted in significant transactions costs by way of unemployment' (Michaely, 1988, p. 7). The impact has been more on the structure of employment, as exemplified by the Chilean experience during 1974-81 in which the significant employment decline in manufacturing was offset by a rise in the agricultural and nontradeable sectors. That there were several cases of successful liberalization would seem to suggest that the transitional costs associated with the policy reform and extraneous influences such as bad weather and external terms-of-trade deterioration have not commonly resulted in extreme dislocation for those economies.⁹

ROLE OF INTERNATIONAL SUPPORT

There are some implications for foreign assistance in support of LDC efforts to promote agriculture-based development and to undertake price and trade policy reform that can be drawn from the above discussion. First, a rolling back of developed country protectionism in both agricultural and labor-intensive manufactured goods should give a boost to the export performance of LDCs in products of their comparative advantage. This will have beneficial effects on both the short-run macroeconomic adjustment and long-run growth. Politically, it can also help overcome domestic resistance to a policy move towards a more liberalized trade and payments regime.

More important than DC tariff reductions for industrial imports, a general relaxation of existing indirect, covert, administrative controls would be required

⁹ A noteworthy exception is the devaluation-cum-import liberalization package implemented in India in mid-1966, widely considered to be due to the pressure of foreign aid donors. As argued by Bhagwati and Srinivasan (1975), better economic performance did not follow because of the very deleterious effects of the 1965-66 and 1966-67 droughts. Moreover, the substantial foreign assistance promised did not materialize after the devaluation, Indian aid receipts having actually declined. Even so, 'not merely did the government face a political storm . . . but the political capacity to repeat such a package was damaged' (p. 164).

for many developing countries to make significant inroads into some major developed country markets. With regard to agricultural trade, the reluctance of many LDCs to rely on imported food supply and to invest heavily in the production of agricultural exportables may diminish if the distortionary and disruptive effects on world markets of developed countries' agricultural production, trade and aid programs are significantly reduced. A reliable and expanded food financing facility can provide price and supply stability needed by an open development strategy. It remains to be seen whether the Uruguay Round of GATT negotiations will lead to a substantially more liberal world trading system for developing countries.

The need for improved access to foreign markets is particularly urgent for LDCs with a heavy debt-service burden. Indeed, for many of these countries concessionary repayment terms (debt relief) might well be necessary, along with domestic policy reform. Political leverage by major DC governments and multi-lateral organizations can be used to persuade foreign bank lenders to agree to lighten the burden for debtor LDCs undertaking needed trade policy changes. It is a dilemma for these countries that they have to produce a current account surplus to meet debt-service obligations at a time of likely short-run balance-of-payments pressures. The question can also be raised whether IMF-prescribed policy targets and performance criteria should not be made more realistic and flexible in the face of exogenous shocks to the domestic economy outside the control of the LDC government.

In the area of development assistance, the need to complement improvements in agricultural price incentives and technologies with the efficient provision of public goods to overcome existing supply constraints and enhance agricultural growth linkages directly suggests some desirable directions for foreign aid. For one thing, the rural infrastructure requirements of agriculture-led development should include not only physical capital investments but also the development of human capital and institutional structures consistent with the increased dynamism and diversification of the rural economy. This may conflict, in some cases, with donor interests in promoting their own country's exports and other self-serving objectives, or in conforming to changing development assistance fads, without due regard to the recipient LDC's own determination of its development needs. It would be useful, as suggested by Mellor and Masters (1987), for the donor community to adopt a more coordinated approach to development assistance based on each agency's comparative advantage. However, it should revolve around the development strategy being followed by the recipient country and the implementation of policy reforms necessary for the success of the strategy.

As pointed out above, switching policy regimes entails some transitional costs that LDC governments may not be able to fully finance. Short-run problems in the current account and of revenue loss from trade taxes have to be addressed, warranting international financial support preferably in the form of expanded

governmental grants from developed countries. The current situation of net capital outflow for many debtor LDCs is clearly untenable. It jeopardizes the implementation of adjustment programs and holds back the economic recovery and long-run growth of those countries.

Because liberalization policies often lead to increased food prices and lower real wages in the short run, the poor are especially vulnerable. Food aid can be a useful means of protecting them (if it is additional to financial foreign assistance), permitting a phased adjustment of food prices for poor families. Productive capacity in the agricultural sector can also be enhanced by food aid through food-for-work programs that build rural infrastructure. Foreign resources could be usefully allocated, moreover, to help develop labor skills and retrain workers shifting to other occupations in response to the changed structure of labor demand that will be induced by the policy reform.

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