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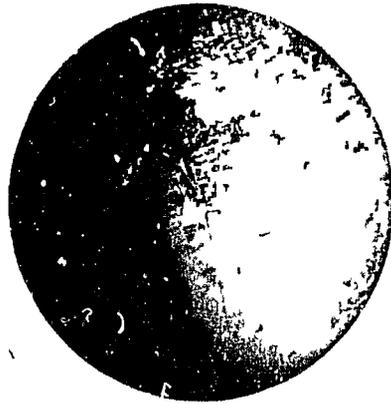
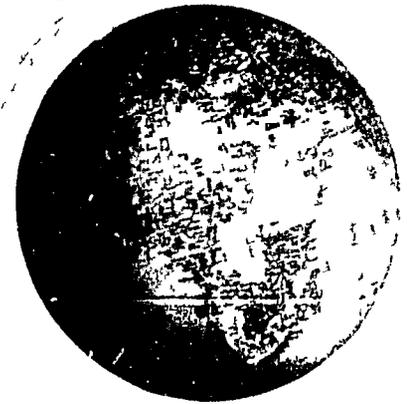
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AGRICULTURAL PRICE POLICY IN THE CONTEXT OF
ECONOMIC DEVELOPMENT*

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Introduction

Agricultural price policy is a means for influencing the growth and allocation of resources for achieving society's objectives of growth and equitable distribution of income. Formulation of agricultural price policy is complicated by the multiplicity of often conflicting functions which price performs, including (1) allocation of resources between agricultural and nonagricultural sectors, (2) allocation of resources within agriculture, (3) generation of additional resources for growth, particularly capital, and (4) distribution of income amongst regions, sectors and income groups (8, 9, 10)

Agricultural price policy is of particular importance with respect to income distribution because agriculture produces the consumer goods which comprise the bulk of expenditure by low income people (1). Even though agriculture is primarily a consumer goods producing industry, agricultural prices affect capital formation by their influence on distribution of income, industrial profits and government net revenues (1, 6). With respect to efficient allocation of resources it must be remembered that the personnel and structure for administering price policy are also scarce resources that must be allocated efficiently. This places an important restraint on choice of optimal price policy. Finally,

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the actual price policy chosen will reflect the state of knowledge concerning the various variables. Uncertainty regarding the effects and objectives of price policy will normally necessitate adoption of policies different to those which would be preferable under conditions of certainty.

Agricultural price policy delineated in this paper assumes three prime characteristics of a country's economy. First, that it is a low income country, with a small capital stock, a small capacity to save, a small supply of administrative talent, limited administrative structures, and a small command of financial resources by government. Second, that the requisites have been met for moderately rapid technological change in agriculture with constantly shifting production functions and declining unit costs of production. And third, that economic growth is proceeding, with rising real per capita incomes and shifts in the demand structure for agricultural commodities towards higher income elasticity of demand commodities.

Basis for a Price Policy

The price policy discussed in this paper is applied to the basic food grains—normally a small number of closely related commodities, relatively nonperishable and, for most countries, consumed largely in the domestic market. For these commodities, a set of support prices would be set annually, with emphasis on support of that year's harvest season prices. The support level would be determined by an appraisal of the current supply and demand situation—the support level normally varying inversely with the size of the crop. The level set would be modestly below the calculated supply-demand balance price. The primary purpose of this policy is protection of farmers against market imperfections and consequent sharp decline in price below the normal supply-demand balance price. Announcement of the support level would be made somewhat before harvest time, but sufficiently late to enable a reasonably accurate estimate of the domestic supply for that year. Presumably, trade policy would give appropriate consideration to international price relationships. The Government would accept deliveries at the support price, such supplies often being sold at a seasonal, market price the same year, and occasionally carried over to later years.

This policy has four major assumptions. First, rapid agricultural development is based on unit cost reducing technological

change which is more a function of public policy towards research, education and such matters than price policy. Inappropriate price policy may slow technological change, but the prime function of price policy is to meet problems resulting from technological change rather than as a creator of technological change ^{1/} Second, as compared to high income countries, the demand for agricultural commodities is less inelastic with respect to price, and also the effect on farm incomes of given market price declines is much less. Third, in the dynamic context of technological change and economic growth the basic price problem for agriculture is one of year to year instability, a problem which is particularly great in low income countries where the operation of markets may be particularly imperfect.

The concern for year to year price instability in a context of development assumes significant market imperfections. The method suggested for setting the support level achieves little in a situation of perfectly functioning markets. However, despite competitive conditions facilitated by easy entry, a large number of participants and a high degree of market integration, there are substantial, difficult to remove, market imperfections in low income countries tracing from costly and uncertain transport facilities and lack of knowledge of crop size and storage stocks (7, 12). There is a tendency for such markets to operate naively and for movement in one direction to accumulate. Particularly where technological change and economic growth are both new phenomena one can expect sharp changes in supplies of particular commodities as new technologies affect first one and then another commodity and as demand shifts accompany rising incomes. Such shifts in supply and demand can result in substantial changes in prices which may be accentuated by market imperfections.

Commodities to be Supported

Even supporting the prices of basic food grains runs the risk of exceeding the administrative, financial and physical storage

¹ Professor Schultz has argued that agricultural production is impeded by "widespread underpricing of farm products and overpricing of agricultural inputs in poor countries" (15, p 51). Where such a negative policy has been followed, redressal may be in order. However in situations in which such policies are often said to prevail, they apparently have not (11, 12). In the case of Taiwan, they have prevailed and agricultural development has proceeded rapidly anyhow (6).

facilities available to government. The problem would be accentuated if one supported prices of perishable commodities as well. In addition, the complexity of setting suitable relationships amongst prices of various commodities increases substantially as the number of commodities increases. This will further strain the government's supply of analysts and administrators.

Basic food grains are the agricultural commodities for which the income elasticity of demand is the smallest. In the context of rapid technological change and income growth, resources should gradually be shifted away from these commodities toward the more income elastic agricultural commodities. There is a danger that limiting a price support program to food grains will channel resources towards rather than away from them.

It is logical to think that if the economy should be restructuring away from the basic food grains and towards the more income elastic types of agricultural commodities that a price support program might concentrate on the latter commodities. Unfortunately, the more income elastic commodities tend to be those which are relatively perishable and hence pose immense problems for the operation of a support program. Presumably the most effective means by which government policy can improve prices for these commodities is through improved marketing facilities (4, 14)

Method for Determining the Support Level

It is proposed that the level of support be determined by estimate of the equilibrium price under the expected supply and demand conditions of the approaching year. Demand estimates may be based on projections of population and per capita income, estimates of income elasticity of demand and a measure of inflationary factors such as the money supply (e.g. 11)

Supply may be estimated either by sample observation or through projections taking into account changes in technology, inputs and weather. If government capacity to support prices is weak and weather fluctuations large, it will be important to make the estimate close to harvest time. If weather fluctuations are unimportant or capacity to support great, little will be lost by setting prices even in advance of planting.

Cost of production should not be an explicit basis for determining the support level partly because the context assumed is one of

improving technology and hence declining unit costs ^{2/} The basic incentive for expanding production is provided by declining unit costs not rising prices For similar reasons input subsidies are not recommended ^{3/}

The objective of the policy stated is not a constant level of agricultural prices When favorable weather has provided a large crop, prices would be lower than when unfavorable weather has provided a small crop In low income countries, the scope to expand consumption, even of basic food grains, through lower prices is greater than in high income countries Further, real incomes of farmers tend to be higher with a large supply than with a small supply ⁽¹⁰⁾ That is, of course, the opposite of the relationship expected in high income countries The reasons for this reverse relationship are (1) demand is much less inelastic with respect to price in low income countries, and (2) a substantial proportion of basic food commodities are retained for home consumption and are not affected by a price decline incident to greater production Of course, if demand is inelastic, those producers who sell practically all of what they produce may experience income changes inverse to level of production

The Level of Support

If the objective of price supports is to protect farmers from market imperfections that drive prices below the supply-demand balance price, then the support price should be moderately below that price in order to allow the market to operate within reasonable bounds and to increase the probability that the policy can be administered ^{4/} There are two basic considerations in deciding how

² For a contrary view and an excellent, extended discussion of agricultural price policy see ⁽⁵⁾

³ For a fuller explanation of the logic of this, see ⁽⁸⁾, for illustration of the effect of technological change on returns to inputs, see ^(2, 6, 13)

⁴ There is a naive assumption here that economists set agricultural support prices In practice political processes may dominate. This argues for caution in initiating price support programs and for thoroughly considering other devices for achieving the same ends Certainly, programs of improved transport and market reporting should be studied as supplements and alternatives to price policy for dealing with market imperfections

much below the supply-demand balance price supports should be set. First is the financial, and administrative capacity to make support purchases, and second, the degree of precision with which the appropriate price can be estimated. The lesser the capacity to make support purchases and the lesser the capacity to estimate the normal supply-demand equilibrium price, the greater the discount to be set for the support price. The greater the discount for the support price the less helpful it will be to farmers. On the other hand, if the support is set so high that it cannot be maintained, confidence in the government's ability to support prices will be destroyed and susceptibility to sharp price decline increased.

Timing Announcement of the Support Level

Announcement of the support level just prior to harvest season has the advantage of allowing more accurate appraisal of the supply situation, particularly with respect to weather. For most farmers in low income countries a constant price irrespective of weather effects on crop size will increase fluctuations in real incomes as compared to basic supply-demand equilibrium prices. Thus, a policy of setting prices prior to planting would normally provide less farmer real income stability than setting them just prior to harvest. The converse is the case for consumer real incomes.

Announcing the support level prior to planting is necessary if the objective is to cause an immediate reallocation of resources towards specified crops. This is unlikely to be the objective with respect to the basic food grains in a context of economic development and technological change in agriculture.

Supports announced prior to planting followed by unexpectedly large acreage planted or unusually good weather may place burdens on the government which it is not able to sustain. With a resultant sharp price decline, farmers would be even less willing to plan on the basis of government supports in the future. Recognition of this problem may require that supports established prior to planting be set at a level lower than would be justified by later information. This could form part of a useful two-stage setting of supports—a conservatively low level prior to planting and a potentially higher level prior to harvest. It is, however, doubtful if the preplanting price would have sufficient credibility to be useful. It is also doubtful if political processes would allow this degree of fine tuning.

An Alternative Context for Price Policy

The policy context in low income countries has often been quite different than that stated above. In this analysis we have assumed general economic growth with rising per capita income and technological change in agriculture causing lower unit costs of production. While that has been the situation in Japan and Taiwan during their periods of rapid economic growth and it is a situation commencing in most Asian countries at the present time, it has not been the dominant situation in most Asian countries over the last decade.

A common context has been one of growing population, modest industrial growth, slowly rising per capita incomes and a technologically stagnant agriculture reflecting the classical case of diminishing returns to increased inputs (8, 9). Agricultural prices are certain to rise under these conditions unless the demand for agricultural commodities is artificially contained or unless imports of agricultural commodities are increased.

If demand is artificially contained through price controls and rationing, then purchasing power will be shifted to commodities which use scarce foreign exchange or which shift domestic resources towards consumer goods production—in each case reducing growth in the capital stock (8, 9). If imports of food are financed from foreign exchange there will likewise be reduced growth through declining availability of imported capital goods.

If agricultural prices are not contained by restraining demand or increasing imports, resources will be transferred from the nonagricultural towards the agricultural sector of the economy. Under conditions of technological stagnation in agriculture those resources will be subject to diminishing returns, causing rising unit costs of production in the agricultural sector. Concurrently, rising money wages and agriculturally based raw material costs will retard growth in the industrial sector (1, 6, 9).

The dilemma is clear, and not likely to be met by price policy alone. What is needed is a public policy which will bring about rapid technological change in the agricultural sector—the context set at the beginning of this paper.

Consumer Protection

The effect of decline in production on farm incomes is partially muted by higher market prices even for low income farmers who retain a substantial proportion of what they sell. The full brunt of higher prices falls on low income urban consumers, with essentially no forces to offset the effect in the short run. Consumer welfare and political considerations may require a storage and price stabilization program that would not be justified from a production point of view.

In the longer run the consumer welfare problem becomes a problem of industrial capital formation. Assuming initial equilibrium with respect to the urban labor supply, a sharp rise in the cost of living of the low income urban labor force will force higher money wages, a squeeze on business profits and a reduction in the rate of growth of the industrial capital stock (8, 9). Thus, on the basis of both welfare and economic growth one can argue for programs to stabilize supplies and prices of basic food commodities to low income urban consumers.

Government controlled buffer stocks can meet the need of urban price stabilization. Alternatively, at lower economic cost and higher political cost, rationing can be introduced during periods of scarcity, with supplies purchased on the market and rationed at subsidized prices to low income consumers. Consumption of low income consumers who have more elastic than average demand would be maintained at a higher level than would otherwise be the case. In consequence, the market price would be forced very high to reduce consumption on the part of high income consumers with highly inelastic demand. Under these circumstances, governments would normally choose a system of deliveries at controlled prices to reduce the price of supplies to be rationed to low income consumers. Alternatively, total production could be sequestered by government and rationed to all consumers. This would probably require a larger bureaucracy than a program which relied on high free market prices to ration to high income consumers.

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