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# THE FUTURE OF AGRICULTURE

*Technology, Policies  
and Adjustment*

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*Agricultural Prices: Their Role in Market Economies*

‘A CYNIC’, said Oscar Wilde, ‘knows the price of everything but the value of nothing.’ The cynic was no doubt an economist, and he presumably replied that whereas he had no way of assessing absolute value, he found that the price of a good was a reasonable guide to the marginal valuation placed on that good relative to other available products. He would have continued that if this marginal social valuation is relayed to producers then in the course of their private decisions as to the way to increase their own income they would under certain conditions produce that quantity of goods which would give a maximum social value—even if no one would accurately measure that value. When pressed, the economist would no doubt have been able to list the conditions under which private decisions will lead to maximum social benefit—at which stage Wilde would no doubt have given up in despair, and pronounced all economists insane.

But the question cannot of course be dismissed. Prices do influence the use of resources, the level of production and the pattern of consumption. Failure to examine the social desirability of the price system is irresponsible. In a mixed economy with a highly developed market system prices are determined in a number of ways. Some reflect the administrative decisions of government departments or public agencies. The prices of many agricultural commodities are determined or influenced by direct government action. Other prices are administered through the sales policy of large companies, on the basis of cost trends and market demand subject to the degree of competition in the market and any government directives which might be in force. A further degree of price competition, along with non-price competition, is often introduced at the retail stage, allowing local and seasonal marketing conditions to be taken into account. The goods that farmers buy are often from industries which exhibit quite high degrees of concentration and this undoubtedly affects their ability to influence the uptake of new technology, the type of technology employed, and the distribution of the benefits from that technology. Similarly these companies are in a strong position to gain from government programmes which aim to support farm prices and incomes. Their market power is, however, often limited by the availability of imported supplies and conditioned by the opportunities for exports.

Market forces are seen to work more directly in the realm of small business where prices are set by individual entrepreneurs in a fairly competitive climate. The 'market-place' may be a local produce-market or live-stock auction or a contract between a farmer and his seed merchant. The more competitive a market the less the reward for a marketing strategy by the firm and the more a firm becomes a price-taker. Other prices result from a bargain between individual buyers and sellers. The prices of assets are usually fixed by bargaining. If a farmer wishes to buy some land he will make a bid to the owner or his agent. The owner will know the approximate selling price of similar types of land in the neighbourhood, and may have decided on a reserve price below which he will not sell. The buyer will have made a calculation (modified by subjective considerations) of the flow of returns that he might expect from the land and the cost of financing the purchase. The price will presumably be a compromise between the desires of the buyer and the seller. The existence of a relatively free market for income-producing assets is a distinguishing characteristic of a market economy. It allows the accumulation of wealth and property and provides an important link between the economic and political sub-systems. The distribution of wealth itself determines the distribution of current income. Governments set up the legal institutions necessary for the establishment and trading of property rights but, with the exception of some taxation of inheritance and capital gains, do not attempt to influence directly the distribution of wealth.

Most government intervention in market economies is designed to alter the conditions of sale of goods and services, including those used as inputs into the production process. Even markets that are left free of such intervention are influenced indirectly through the policies in other sectors. Prices administered by governments are not unaffected by the normal constraints of the market. A government agency recommending a differentiated price structure for, say, dairy products has to bear in mind the impact that this decision will have on users of those products, just as would a private firm making the same decision. But government pricing decisions are commonly made on different grounds. Government intervention is in most cases premised on the failure of private decisions to accord with the socially optimal level of output and to result in a satisfactory distribution of income. Prices administered by a public body can and do overrule the market, relaying different signals regarding the valuation of output to the producers and the cost of the product to the consumer from those which would obtain in the absence of government action. However *ad hoc* these government pricing decisions may appear they are presumably based on criteria both implicit and explicit. In this paper I want to review some of the more obvious pricing criteria, examine their advantages and problems, and relate them to the experience in developed market economies, particularly the United States and the European Community.

Governments in the Western world rarely make explicit the criteria on which they fix farm prices: nor do they adhere rigidly to those criteria that

are announced. The importance of these criteria changes over time with changes in the economic circumstances. But, at the risk of taking too seriously the pronouncements of ministers and politicians, one can isolate a number of different criteria which, either singly or in combination, appear to influence price decisions.

(a) *Pricing for income objectives*

Dissatisfaction over the income implications of an unregulated agricultural market has prompted most Western industrial and many semi-industrial countries to intervene in order to modify both income levels and the rates of growth of incomes in the rural sector, relative to those in the rest of the economy. Since the individual farmer finds his own income constrained by the price received for his output and the cost of his inputs, it is not surprising that most pressure on governments is to safeguard incomes by means of price supports and policies to offset cost increases. We may distinguish several operational criteria:

(i) Parity price. This usually refers to an attempt by the government to maintain the price ratio between prices received and prices paid by farmers. The concept of parity was embodied in U.S. legislation in the 1930s and has remained in various forms ever since. It is often pointed out that such parity price formulae fail to account for productivity increases. But such comment ignores the object of intervention. Parity prices are not supposed to reflect the terms of trade which would obtain through the market; the parity price is a device for attempting to control the distribution of the gain from technology in agriculture and other sectors. In so far as governments with parity price commitments maintain the price ratio, they enable agriculture to keep the benefits of increased productivity in the farm sector: price reductions can only come through decreases in input price levels. This inhibition of the transmission of gains in productivity has costs which increase the more such a parity price diverges from the market price ratio. Thus in the U.S. one saw the concept of parity prices applied with discretion. The parity price ratio to be maintained became in itself a policy variable.

(ii) Cost recoupment. A somewhat similar concept of administered price determination is the recoupment of cost increases to the farm sector. Allowable cost changes are calculated and prices for the next season decided on this basis. This concept was built into the Annual Review System operated by the British Government over the post-war period, and there have been indications that the European Community may adopt a similar system. One obvious advantage of such a system is to the seller of inputs to farmers: if a fertilizer price increase is automatically offset by higher product prices then the manufacturer of fertilizer will be in a strong position to exploit the government's generosity. A major problem with cost-recoupment pricing is to distinguish between cost increases arising outside the agricultural sector and those arising from within the sector. Whatever the merits of offsetting the effect on farm income of, say, an increase in farming costs due to an increase in fuel prices, it is much less

easy to explain why the farm sector should be compensated for increases in land rents reflect the increased profitability of farming. Farmers compete among themselves for assets such as land: what is a cost to an individual farmer is not necessarily a cost to the sector as a whole.

Cost recoupment does allow the question of increased productivity to be dealt with more directly. The British Government in assessing annual cost increases took account of an 'efficiency factor' based on the national average annual total productivity increase. But farmers asked quite naturally why such a productivity increase should not accrue to them in full. The government took advantage of the flexibility allowed by the productivity increase to tailor the level of price support to the changing need for domestic production subject to treasury constraint. Thus the distribution of the gains from efficiency and technology was controlled by the government as a direct policy device.

(iii) Compensation for inflation. A further criterion which is occasionally suggested is to raise farm prices along with the general rate of inflation. What could be more fair than that! In a free market, in the absence of money illusion, a general decline in the internal value of the currency is unlikely to change relative prices to any great degree. The burden of inflation falls in proportion to individual's holdings of nominally priced assets and liabilities. It is not clear as to whether farmers as a group would gain or lose. To fix the nominal price of farm goods would certainly represent a tax on farmers—a procedure used in the European Community from 1967 to 1970 and still advocated as a way of reducing support levels. But the problem arises in distinguishing between general price increases and those which arise because of market changes. Whether compensation for inflation is distributionally desirable is an open question.

(iv) Income parity. As a reaction to the problems involved in employing the price parity criteria, countries have on occasions espoused an income parity objective. This involves calculating income changes for the sector or more usually for a representative group of farms and adjusting prices to maintain relative incomes. Such a concept is presumably based on the assumption that real farm incomes would fall without government intervention. But this in turn presupposes not only that factor mobility is insufficient to cope with the pressure to adjust to any particular point in time but that the situation is steadily deteriorating. The evidence from Europe and North America hardly supports such a conclusion. Migration from agriculture and changes in the rate of inflow of both labour and capital appear to be adequate not only to prevent a secular decline in relative farm incomes but even to give in those areas where off-farm opportunities exist a rate of return on farm resources comparable to their alternative earnings elsewhere. Under these conditions rural poverty stems from an uneven distribution of productive assets both physical capital and human skills—a problem which price policy can do little to alleviate.

A prerequisite for an income parity policy or one which attempts to ensure parity of resource returns in agriculture is a conception of the

desirable level of resource use. An open ended parity commitment will tend to inhibit resource mobility. The size of the agricultural sector adjusts to the level of support given, as one would expect of an industry with no restriction on aggregate factor use. Thus an increase in price support premised on inadequate factor incomes encourages further investment until factor returns again find their 'equilibrium' level, which in turn is influenced largely by conditions outside the farm sector. The rate of change of employment in various sectors and the level of domestic output are important variables in government policy: it is these factors that governments primarily influence in the name of 'income parity'.

*(b) Pricing for resource allocation*

In the age of innocence it was possible to maintain that an unregulated market produced an allocation of resources that provided the most desirable production pattern at the least real cost. The nagging doubts of a generation of economists as to the universality of this prescription culminated in the 'theory of the second best', which established that the removal of a distortion in one part of an economic system did not necessarily improve the functioning of the system as a whole. Policy analysis, far from being invalidated, was liberated from the sweeping generalizations of first-best welfare economics. Each policy or set of policies had to be examined individually and evaluated in terms of the identifiable impact on various sectors of the economy. Free agricultural markets may lead to more or to less resources in the sector than would be appropriate, depending on the circumstance. If other parts of the economy are characterized by a higher degree of monopoly then one would expect a free market to encourage excessive resources into agriculture by distorting the real cost of those resources to that sector. On the other hand if industry were protected by a set of tariffs against foreign competition then an unprotected agricultural sector would employ too few resources. A government attempting to use price policy to obtain the correct resource allocation would in these circumstances be led towards lowering the agricultural price level to avoid overcommitment in the competitive sector and raising it to provide a comparable degree of protection. The most appropriate price may be above or below the free market level; each case must be examined on its merits.

It is clearly much easier to list the reasons why an unregulated market price may act as an unsatisfactory signal for resource use than to evaluate the importance of such distortions. The price that consumers are willing to pay for agricultural products may ignore the full social contribution of the farm sector. Agriculture produces jointly the 'private' goods which move into the food and fibre sector and the 'public' goods associated with a populated countryside and a stable rural society. Such public goods are inadequately priced in the market place and in general will oblige political decisions to be made. But agricultural production also inhibits certain land use patterns and often limits recreational use: intensity of farming can detract from the value of the countryside as a public asset in some

cases. Moreover scientific farming can add to problems of pollution and ecological imbalance. Again, it is by no means clear as to whether price incentives to agriculture benefit society as a whole.

Just as free farm prices may not correctly value the social benefit of farm output, so farmers' costs may not reflect the social shadow price of inputs used. In particular, in areas of unemployment the true cost of labour may be quite low. But farmers pay the market wage and not the social wage, and some stimulus to production may be justified at least as a part of a regional employment programme. The British policy of support for hill farmers is but one of many examples of agricultural programmes justified partly by lack of alternative employment opportunities.

To say that production of agricultural goods is justified only up to that level where the (rising) marginal social resource cost is no more than the marginal social valuation of output is merely to restate the problem. As just one example of the difficulty of such social pricing, consider the 'optimum' price level of a commodity such as wheat in the European Community. Each year the Council of Ministers has to decide on a 'common' price level which is then maintained by support buying, export refunds, and a levy to prevent competition from low priced imports. The valuation of domestic wheat by users within the EC will presumably, at the margin, approximate the price they have to pay, say \$100 per ton. To the EC as a whole the value of such extra domestic production would be the world price—perhaps \$70 for a marginal increase in the volume exported. Private cost at the margin might also be approaching \$100 per ton as European farmers are presumably geared up to high cost production. Social cost may range from perhaps \$40 in areas of backward structure and rural unemployment to \$100 in regions where agriculture competes directly with a highly concentrated industry. In exporting countries in the EC the social value of extra domestic production is presumably about \$90—since the export subsidy comes largely from the Farm Fund FEOGA; in importing members, domestic production is worth the import price *plus* that part of the levy paid to the Fund, say \$90 per ton. Given such a matrix of social costs and values, it is clear that under the present system of uniform prices and a common budget there is no simple 'optimum' price with which to confront Community farmers.

In the previous example the world price was taken as an indication of the marginal valuation of a good that enters into world trade. No concept is ridiculed as much as the 'world price': its detractors claim that the price of agricultural goods on world markets is so distorted by the variety of policies pursued by governments that it loses any claim as an indicator of resource allocation. But such a view melts under examination. It is certainly true that governments are under pressure to offset the external effects of the policies of other countries in so far as these decrease demand for domestic agricultural output. But for a government the opportunity cost of domestic output is determined by the availability of imports or the market for exports irrespective of the policies which distort such opportunities. It is the free trade equilibrium world price that has no



relevance to domestic policy decisions—except perhaps in the calculation of the trade distortion effects of various farm policies in the context of international negotiations.

It was suggested that the existence of protection in non-agricultural sectors of the economy gave an *a priori* legitimacy to price support in agriculture. In a tariff-distorted economy the second-best protection policy would yield an approximately equal degree of effective protection in all sectors, afforded in such a way as to avoid consumption distortions. If there were significant differences in production structure among countries in the agricultural sector then this would correspond to a set of farm prices that also differed, perhaps considerably. In other words, a farm price 10 per cent above the world price level would give a much higher effective protection, *ceteris paribus*, where value added were but 10 per cent of output value than in a country where value added were 60 per cent of output. This may explain some of the widely differing farm prices in various industrial countries and the difficulty of exercising any meaningful control by international discussion of such price levels. European price levels for cereals may have to be higher than those in North America merely to prevent an outflow of resources from European agriculture which would be against their economic interest.

### (c) *Pricing for market clearing*

If an unregulated market has come under severe criticism as an arbiter of relative incomes and an allocator of resources, no one would doubt its function as a means of reconciling supplies with purchases. An unsupported market may be erratic but it does not give rise to surpluses. Just as in foreign exchange markets where balance of payments deficits and surpluses arise directly from government inspired intervention, so in agricultural markets imbalance is a result of and not a reason for intervention. But it appears to be true that many agricultural markets require significant price changes to clear small amounts of produce. The natural inelasticity with respect to price both on the demand side because food has few substitutes and on the supply side because farming as an operation with a long planning horizon has been intensified by the actions of governments aiming to isolate their domestic economies from price changes. This reaction is typified by the growing use of variable import levies and export subsidies; indeed at the extreme there may be no price at which world markets clear if the quantity available for export from countries acting without regard to world prices is greater than that imported by other nations in accordance with the dictates of their own domestic policies. The price in this case would merely serve to apportion the incidence of the cost of these farm policies by determining the levels of levy and subsidy to be paid.

The budget cost of market intervention provides one of the most important constraints on government price policy. To return to the EEC, the Council of Ministers have clearly attempted to avoid price increases on commodities in 'surplus' and to switch incentives to those in 'deficit' for

the Community as a whole. The bias towards self-sufficiency is imparted by the need for financial restraint rather than imposed as an objective. This attempt to 'second guess' the market has severe limitations; it runs the risk of building up high cost industries merely because no financial outlay is involved.

These criteria all stem from objectives to do with the place of the agricultural sector in the economy. One could relate a different set of objectives of a more general character. Agricultural prices are often set with a view to earning or saving foreign exchange. Each case must again be treated on its merits. There is no *a priori* reason why a shift of resources from one industry to another should increase or reduce the demand for foreign currency and the foreign demand for domestic currency. And even if stimulation of domestic agriculture did have favourable implications for the balance of payments the comparison should be made with other possible policies. As a means of effecting a particular income distribution in the economy or of offsetting the distributional impact of inflation agricultural prices offer governments a tempting weapon. In recent months a number of countries have taken steps to restrain food prices. A new dimension is emerging in agricultural policy in Europe and in North America. Countries are being obliged to consider adding a food supply policy to their farm income policies, to an extent unknown for twenty years. This new emphasis in turn will condition the negotiations in the GATT on international agricultural trade and to a lesser extent the relationships between developed and developing countries.

How should one interpret the role of agricultural prices in the policy of governments toward the farm sector? Governments can and do influence the level of resource use and the pattern of output by manipulation of prices. They have in general been much less successful in influencing incomes in the rural sector. There is a significant disenchantment with the use of product price to support incomes. This arises partly from the inefficiency of this instrument in an industry with free entry of labour and capital. It is reinforced by the unequal distribution of the gains from such support, whereby farmers with most to sell benefit much more than the struggling small-holder. The use of price policy often conflicts directly with a government's concern with inflation and with the universal constraints on public expenditure. The widespread market intervention developed by governments since the 1930s may be giving way to a period of direct income support, limited price stabilization, and a concentration on the provision of adequate education and social services in rural areas. Output and resource-use decisions will be more directly conditioned by market demand modified by the desire of governments to avoid undesirable land use systems and population balance. The high point of agricultural price policy is passed.

Geoff Miller, *Australia*

My assignment was to discuss Professor Josling's paper only. I think he should be congratulated both on his comparative economy in use of words and on his successful efforts to write a paper that deals in a disciplined if not rigorous way with the *economics* of his subject, rather than diverge into softer fields (for non specialists) such as history, politics, description, administration and so on.

The substance of the paper is in three parts. First, the author has dealt with pricing for income purposes. Although in his conclusion he has noted the growing disenchantment with use of prices for income support, and well noted the reasons, I wonder whether he has yet gone far enough. Economic science can clearly demonstrate that, except in most unusual circumstances, price support is completely invalid as a policy instrument for income support objectives.

Secondly, he has dealt with pricing for purposes of allocative efficiency. Although price support is a perfectly valid instrument for achieving this objective, Josling's paper has provided something of an oversimplification of the conditions under which this instrument might be successfully employed to achieve the efficiency goal.

Thirdly, he has made some observations about use of price for market clearing. While I entirely agree that many of our current and recent market imbalance problems are the *result* of government intervention, I would nevertheless submit that alleviation of the long-run consequences of *short-run* market imbalance, is a legitimate objective for government policy, and that *short-run* manipulation of producer prices *is* an appropriate instrument in some such cases.

The fourth point I wish to make is that the blame for the failure of government intervention in encouraging short- and long-run efficiency in agriculture does not rest with governments: it lies squarely at the feet of the agricultural economics profession!

Now let me see if I can go part of the way in establishing these four points with you.

The conditions that give rise to the need for income support in agriculture, are normally *exactly those conditions needed* to demonstrate that price support will not raise farm incomes, except in the very short term; under very unrealistic assumptions about transfer payments; or when given other constraints on economic behaviour.

These conditions are falling real prices or rising real costs, which are reducing income at a rate unmatched by the rate of increase in revenue from productivity growth and farm adjustment (in its broadest sense). Slow productivity growth or slow adjustment always have legitimate economic causes. In the latter case, these include resource fixity; a threshold of psychic income; or imperfections in the supply of information about alternatives. In these circumstances, the addition of a constant to the numerator or denominator of a price ratio, without simultaneously stimulating or constraining the microeconomic system in other ways, will

simply put in train economic forces that will 'wash out' the initial rise in income and wealth resulting from price support.

The instrument of price support must therefore be rejected as a means of attaining income support objectives, not because of this circumstantial case that price support constrains the achievement of other policy objectives or that it widens income disparity, which, incidentally, it will only do in the short term. It must be rejected because of the *prima facie* case; it is simply inappropriate as an instrument of income support. It does not work.

My second point on Professor Josling's paper is that he has oversimplified the conditions necessary for efficient resource allocation when using the price support policy measure to attain allocative efficiency (as distinct from income support). It is true that in a tariff distorted *closed domestic* economy, the second best protection policy would provide equal levels of effective protection on value added in all sectors. However, in an economy that is at least partly open the *terms of trade impact* of the changes in output induced by the protection provided, greatly complicate the calculus.

Of course in an operational sense the application of the price support instrument to achieve allocative efficiency is further impeded by the fact that policy making is normally a 'piece-meal' process: we can normally only deal with one industry (or at best a group of industries) at a time. Without having first *determined* the optimum level of effective protection for *all* sectors, we are generally in no position to specify whether the level of protection for an *individual* industry, or group of industries, should be increased or decreased, except perhaps for industries in the more extreme under-protected or over-protected categories. Some may be interested to know that a national Industries Assistance Commission is presently being set up in Australia, with the specific brief of co-ordinating government microeconomic policy towards all industries—primary and secondary. The equalization of effective protection levels (or at least reducing the variance of effective protection levels) will be a central part of its *modus operandi*.

Finally, I would like to comment on the dichotomy between principle and practice on the question of government intervention for allocative efficiency purposes in a *dynamic* context, i.e. market clearing. Even in the absence of government intervention, primary product prices would remain not only erratic (as Professor Josling has noted) but *in many cases also unstable*. Recent empirical research conducted in the Bureau of Agricultural Economics on the time-path of output from fruit tree populations following an episodic 'shock', provides an example. An oscillatory output pattern lasting over several decades was found to be induced. Furthermore the oscillations in the output pattern would only converge under very strong price response behaviour restrictions. Even if convergence is plausible, as under some of the earlier cobweb models, it is normally only achieved after a considerable lapse of time.

Because of the high cost of inducing resource mobility, economic losses

(in the form of real income foregone) *are sustained whenever a commodity market remains in a state of disequilibrium*. It is in principle entirely appropriate for governments to use prices as an instrument to minimize these losses.

A major challenge facing the economics research profession is to scientifically demonstrate how the price policy instrument should be used in order to minimize such losses. To do this we must take the task of *empirical* economic research *seriously*, stop giving up while we are still in zone one of the research production function; stop dabbling with data in order to play with techniques; and begin conducting our research from empirically testable hypotheses.

In summary then, the dismal failure of government price policy in mixed enterprise economies in the past can be traced to two causes. First it has been directed at the wrong objective (income support) primarily because the economics research profession was tardy in demonstrating its invalidity for this purpose but also because policy extension economists were ineffective in communicating with policy makers. Secondly, for the most part policy makers have *yet to be shown the way* to use price policy for legitimate allocative purposes.

Let us hope that the *low* point of agricultural price policy has passed. The *high* point has yet to come!

G. Schmitt, *West Germany*

I would like to make two short comments on Dr Josling's excellent paper. First, it seems to me, that he has not made a clear-cut distinction between short-run and long-run considerations when reviewing the effects of price policy measures by the government of countries using price policy as a means to protect incomes in the farm sector. What might be true (and good) in the short run is not necessarily good (and true) in the long run. This refers, for instance, to the statements on page 213 of Dr Josling's paper where he states that 'the British policy of support for hill farmers is but one of many examples of agricultural programmes justified partly by lack of alternative employment opportunities'. One can say that this might be true in the short run, but I doubt very much whether this statement holds as well in the long-run view. In any case, it seems necessary to discount short-run gains (and losses) of such a policy compared with long-run losses (and gains). Furthermore, these discounted total net gains (or losses) have to be compared with the effects of alternative policy measure by cost-benefit analysis. Similar considerations should be weighed in respect of his statement (p. 213) that 'for a government the opportunity cost of domestic output is determined by the availability of imports or the markets for exports irrespective of the policies which distort such opportunities'. In this respect, this should be added—price policy for agriculture is mainly reviewed in his paper with respect to the objectives of farm policy, namely the income of the farm sector, resource allocation

within an economy and the clearing of agricultural markets. However, we should not neglect other objectives of farm policies and of general economic policy within which farm policy has to play a certain role in order to achieve those policy objectives. With respect to farm policy, I would like to mention only price policy with respect to stabilization of markets or price policy as a measure to secure a certain supply of food products. This also is true for farm price policy as a measure to achieve price stability in order to counteract inflation and with respect to economic growth and, perhaps, full employment as objectives of national governments. In summary, in analysing the role of agricultural prices in a market economy all, or at least the most important, goals of economic as well as farm policy should be taken into account as well as the interdependencies and implications of farm price policy in an economy which has to achieve a number of goals and objectives.

Harold F. Breimyer, *U.S.A.*

Economists have had considerable success in calculating elasticities of supply response in agriculture, in *partial* analysis, i.e. commodity by commodity. They have been much less successful in dealing with aggregate supply response. This is not only harder to estimate but sensitive to short-run circumstances, such as the income level of farmers. An illustration of the moment bears on the world food supply situation. In the mid-west of the United States, corn-hog farmers who have enjoyed sharply rising incomes in the last few years have demonstrated the economics of leisure. They now require a much wider hog-corn price ratio than before as incentive to increase hog production—or even maintain it. It is possible that under some short-term conditions the aggregate supply response can be extremely inelastic, or even, briefly, negative.

Adolf Weber, *West Germany*

I would like to ask two questions, which are based on the excellent paper of Professor Boyev.

- (1) Comparing the price ratio between crop and animal products there is a sharp difference between socialist countries and Western European countries. Prices of animal products in socialist countries—with the exception of Poland—are considerably higher than normally to be expected from the prevailing prices for crop products. Is this difference due to large-scale farming?
- (2) What are the relations between price policy in the Soviet Union and in other socialist countries?

Dusan Tomic, *Yugoslavia*

I have one general question for both speakers. The development of agriculture in many countries shows a high degree of instability, in part due to weather but also to economic conditions. This has imperilled the development of agriculture and even of the economy as a whole. Effective economic development in my view depends on the equal balanced treatment of agriculture and the whole distribution system and in greater emphasis on agriculture in the economy at large. In respect of the economic contribution of agriculture to development the price policy for agricultural products has an extremely important role to play in long-term development. In my opinion the question of crucial importance is how to form a relatively stable and effective long-term pricing policy which could contribute to the intensification and increase in agricultural production and consumption of food. I think this question is still open. We must deal much more competently and comprehensively with the entire process of price formation from the producer right through to the consumer, including the study of policy, and the prediction of prices of agricultural products.

Harry C. Trelogan, *U.S.A.*

I have noted with interest that income taxes are levied on collective farms in an administered economy on profitability beyond 15 per cent. The profitability is computed on current costs of production. I request Dr Boyev to elaborate on the reason for this. Is it intended to achieve greater equity, or to cope with problems of inflation?

G. R. Allen, *U.K.*

I am uncertain how far in the U.S.S.R. transportation costs are taken into account in determining the regional distribution of farm production. Professor Boyev's paper gives me the impression that costs of production at the farm level do not take into account the costs of moving output to the consumer. Presumably this is not the case.

Does the U.S.S.R. use linear programming models as an aid in determining optimal regional distribution of farm production? If so, how successful have these models been?

Gunther Weinschenck, *West Germany*

I have learned today that price policy is an inadequate measure of income policy and, perhaps rather naïvely, I have formed a conclusion that the most efficient income policy would be competitive price policy. Would Dr Josling tell me if this is the right conclusion?

J. F. van Reimsdijk, *Netherlands*

My question follows on from that of Dr Weinschenck's. In the last sentence of his paper Dr Josling says that the high point of price policy has passed. I wonder whether this is once and for all? Or is it that temporarily the high point of price policy is passed? If we look a little higher up his paper Dr Josling speaks of direct payments to farmers. I wonder whether this would not be a good addition to policy measures, worthy to be taken into the list of instruments temporarily, in order to get agriculture readjusted to a situation in which price policy would be feasible and effective.

Nils Westermarck, *Finland*

So far as I know price policy in the U.S.S.R. has hitherto been based upon production costs, I take this to mean that in regions of less favourable conditions, with higher production costs, prices of the produce have been higher. Now on page 206 of Professor Boyev's paper, 'as far as the grain industry is concerned the profitability of individual crops should be in such regions where the production at minimum costs is attained'. Does this mean now that higher profitability is due to better natural conditions or does it mean that there has been a change in the price policy in such a way that regions which have more favourable conditions get higher prices if so how will those less favourable regions be compensated? Then the second question is also on page 206 and here I link back to Dr Trelogan's question, I should like to know what the expression 'profit' actually means. Is it similar to what we in the western world are calculating namely gross revenue less production costs except the interest. In other words, remuneration on capital invested?

Odd Gulbrandsen, *UNCTAD*

Dr Josling argues that, if protection is needed, it would be optimal to apply uniform effective protection, proportional to value added. This means questioning the present principle of the *EEC* to introduce equal nominal prices on its agricultural markets. Instead regionally differentiated prices would be more optimal. Would Dr Josling recommend this?

Professor Boyev (in reply)

I would like to answer some of the questions which have been put in the discussions. Why do we have comparatively high levels of purchase prices in relation to the large-scale commercial production which we have in our country? Certainly, in the large-scale agricultural units we have comparatively high labour productivity. Taxable income is that remaining



after allowing 15 per cent of the gross income. The total amount of taxation should not be more than 25 per cent of net revenue. The aim is to provide for a comparatively high money income for investment, etc.

As regards the income redistribution question, in the rules of collective farms there are special rules to deal with this income redistribution in certain circumstances. A very important part is played by budget financing of agriculture. From the federal budget agriculture would only receive 84 billion roubles for investment. There is no comparison between taxation and budget financing of agriculture. The taxation of agriculture is usually not more than 500 million roubles a year, half a billion in comparison with the tremendous capital investment. Actually agricultural taxation does not play any significant role in the total economic situation of the country.

Now a question on how we reckon the cost of production. We include in the cost of production all material expenses and also the remuneration of labour. Labour payments are reckoned as part of the cost of production and not as part of revenue, thus labour payment is not included in the taxable income.

Now relating to price structure, the purchase price structure usually consists of several elements. There is the cost of production, some allowance to provide capital investment in order to expand production, and also some part which is taxable and available for the State to distribute in another direction.

When we are speaking about the zones in a country taken into account for pricing purposes we take into account the natural conditions. I would very happily answer further questions which I have no time for now.

Dr Josling (in reply)

Dr Miller accused me of over-simplifying at one point; he might well have done so on many points since the short space allowed me forced simplification on me. There was a lot of short-cutting in the paper. His comment that I had not mentioned the question of terms of trade in measuring the degree of protection is perfectly right, in a longer paper that would have been included. I also appreciated his support for the statement about the importance of stock holding and pricing for stabilization. I realize that that was a piece of my paper which I did not explore in any great depth. I think that it is significant that in the last two or three years, as far as I can detect among economists in government service, price policy has led to a lot of problems and solved few problems. I hope I am not exaggerating the situation when I say that the problem now is not so much convincing people who advise decision-makers but of the decision-makers—that is, the politicians, devising ways of getting themselves out of problems that they no longer want to be in.

Moving on to some of the other comments. Professor Schmitt wanted me to elaborate some more on the distinction between short run and long

run. This is a terribly difficult question. After all, the long run is happening all the time to some people. When I talked about the long-run adjustment process, if in fact the price level has increased and the government says we are going to stick by this level for a long time, then investment decisions are made from the next day on the basis of that expectation. Long run begins immediately. On the other hand, you could also say that the short run is always there. I would rather put emphasis on expectation than on length of run. I think that the important point about the trade price that you mentioned is not so much that you should know whether you should be thinking of long-run or short-run problems but what is the expected level of world price and it may be that your expectation is that the world price would be very high in the short run but think it will fall after two or three years, but you use all the information that you have got in terms of the profile of expected price to determine whether it is profitable to import or to produce domestically. I am not saying that you should only look at next year's price or the price in ten years' time. The same thing goes for your comments about unemployment. Unemployment in one sense is a short-term phenomenon, on the other hand what is important to the government in moving in to agricultural change in a particular region is some expectation about the level of agriculture and economic activity over some period of time. You argue that I should have put more emphasis on stabilization, I have a feeling that if stabilization of income was really so important as is occasionally made out we would have worked out some simple income insurance scheme, we would certainly not have got into the problems we have landed ourselves with in price policy. Of course, price stability is not the same as income stability; in fact you destabilize income if you fix prices.

I mentioned some of the non-agricultural objectives—income distribution, balance of payments, counter inflation, but I did not mention growth, but in spite of what we heard the other day I do not think economists know what promotes growth. Therefore, I don't think we can say very much about what agricultural price policy does to growth. Certainly I would not like to say what that would be in a very short paper. Professor Breimyer said we do not know very much about supply elasticity. He is certainly thinking at the moment about aggregate short-run supply elasticity. I suspect that a few years ago if you tried to get a Ph.D. thesis going on the basis of how much extra output you could get from U.S. agriculture in three months assuming a 46 per cent increase in price everyone would have thought you were dealing with a non-issue, but this is the problem at the moment. I appreciated George Allen's comments, although they weren't in fact directed to me, which is the idea of prices working their way back to the farm gate. The reason why I comment on this is that about a year ago I was in Europe to be told of a scheme for working out the price of dairy products, it went something like this. First of all you find the Australian and New Zealand balance in five years time. Secondly you find the European consumption with no price attached, just quantitative. Thirdly you get the difference, which is the

required supply in Europe and fourthly you calculate the price which will secure the continuance of European capacity to produce that supply. All of this is based on an assumption, which in my more uncharitable moments I associate with Brussels, that all elasticities of substitution are zero, all supply elasticities in the rest of the world are zero, all demand elasticities in Europe are zero and only by that sort of assumption can you use that type of calculation.

Professor Weinschenck asked me whether competitive prices were the best income guide, I would have to argue that until we have solved some of the problems of income distribution, wealth distribution, distribution of education, distribution of social services, it would be very difficult for anyone to say that competitive income distribution is satisfactory. My point was not that one should not try to influence the level of income in farming but that one should do it through a satisfactory and effective method rather than through one which merely leads to problems and doesn't do what it was meant to do. Professor von Reimsdijk asked me a question on a very similar topic about price policy and adaptation in agriculture and by adaptation he had in mind structural change. I wish we could say something about this. I have been reading quite a bit about European and American policy for some time but I really don't know of any generalizations that one could put into a paper on the effect of price policy on structural change. I am afraid that this is just something that we have talked about but have not accumulated any evidence. Finally, Professor Gulbrandsen asked me what I think is a rather loaded question about EEC common prices, I don't mind it being loaded at all because I was trying to be provocative. Personally I believe that the second best solution is one away from uniform prices and common levels of prices, in fact if I was being controversial I would say that the establishment of the Common Market with freedom of trade in agricultural goods could potentially, and did actually, produce mal-allocation of resources in various countries. If you move too far ahead with one part of the economic integration and it gets ahead of other parts you should not be surprised if the political process begins to back-track and say that this isn't quite what was wanted, and so we have them pressing for regional prices and these are showing up a real economic need, uniform prices in Europe are not necessarily the best price policy.