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*Agricultural Protection Growth in Advanced and Newly Industrialized Countries*

INTRODUCTION

Why has agricultural protection in industrial countries been increasing since the 1950s? This trend in agricultural policy is opposite to that for manufacturing, and has occurred despite a marked decline in the proportion of voters from the countryside. In addition, agricultural protection is emerging in a number of fast-growing newly industrialized countries. The presence of agricultural protection in these countries alongside heavy taxation of agriculture in many low-income countries suggests there is a general tendency for governments of industrializing countries to gradually change from taxing to increasingly assisting agriculture relative to other tradable sectors.

Understanding the reasons for this phenomenon is an important part of policy analysis, because until we know why the pattern of distortionary policies evolves in this way, we will be poorly equipped to suggest more efficient ways to achieve society's objectives. Such an understanding is also required if we are to include policy endogenously in models used for forecasting and estimating the effects of policy reform on agricultural production, consumption and trade trends in growing economies.

This paper begins by reviewing the patterns of distortions to agricultural incentives across countries and over time. It shows the considerable growth in the extent of agricultural protection in advanced and newly industrialized countries since the 1950s, as well as the marked differences in protection rates between Australasia and North America, Western Europe and East Asia. The main section of the paper then draws on the neoclassical economic theory of politics to help explain the phenomenon of agricultural protection growth, building on Mancur Olson's address to the previous IAAE conference in Malaga. Throughout, the focus is on the long-run trend in distortions rather than short-run fluctuations around that trend, and on aggregate distortions to incentives rather than on the inter-industry pattern of protection within the agricultural sector (which is the focus of Bruce Gardner's recent excellent paper).

## THE PATTERN OF DISTORTIONS TO AGRICULTURAL INCENTIVES

There is now considerable empirical evidence to support the casual observation, often made, that the policy regime of advanced economies tends to assist agriculture relative to other sectors while that of poor countries tends to discriminate against agriculture.<sup>1</sup> The main exceptions to this generalization are, on the one hand, the food-exporting rich countries of Australasia and to a lesser extent North America and, on the other hand, a number of developing countries which are net importers of agricultural products such as South Korea, Mexico, Nigeria, Taiwan (China) and Yemen.

Protective barriers to agricultural imports were erected in Europe in the latter 1800s as industrial development there and agricultural export expansion in the Americas and Australasia began to reduce the competitiveness of European farmers (Tracy, 1982). They were raised in the Great Depression of the 1930s and again during the period of rapid industrial growth from the 1950s on. One study estimates that the average nominal rate of agricultural protection in Western Europe increased from less than 30 per cent in the 1930s and early 1950s to 38 per cent in 1956–57, 47 per cent in 1963–64 and 62 per cent in 1968–69 (Gulbrandsen and Lindbeck, 1973, p. 38). Meanwhile tariffs on Western Europe's imports of manufactures were being progressively reduced.

When Japan first became a net importer of food, around 1900, a tariff on rice imports was introduced and the relatively heavy taxation of the agricultural sector began to be lowered. The nominal rate of rice protection in Japan rose to more than 30 per cent during World War I and to more than 60 per cent by the latter 1930s. Following post-war reconstruction the nominal rate of protection for all grains and meats averaged around 50 per cent in the late 1950s, but it rose to 100 per cent by the early 1970s and 150 per cent by the early 1980s. Assistance to Japanese manufactures has been modest by comparison and, as in Europe, has been decreasing rather than increasing (Anderson, 1983).

In newly industrializing East Asia the switch in incentive structures has been even more dramatic. As recently as the early 1960s South Korea and Taiwan (China) effectively taxed their farmers while protecting the import-competing manufacturing sector. Since their switch in development strategy toward export-oriented industrialization in the mid-1960s, however, these economies' rates of agricultural protection have increased rapidly to the point where Korea's now rivals Japan's (Anderson, 1983). Similarly, the industrial take-off in Indonesia, Malaysia and Thailand has been accompanied by reduced taxation of agricultural exports, increases in domestic-to-border price ratios for basic foodstuffs and the introduction of subsidies for farm inputs such as fertilizer, pesticides and irrigation water (Booth *et al.*, 1985).

A number of energy-exporting developing countries, which enjoyed a boom in export earning following the petroleum price hikes begun in 1973, also have adopted policies to improve incentives for farmers following the increased import competition that necessarily accompanies the currency appreciation associated with a boom in exports. According to the World Bank (1986, pp. 48–9), the rate of agricultural protection was raised to high levels in Mexico, Nigeria and Yemen, for example, while in Saudi Arabia it is now extremely high.

A summary indication of the growing levels of agricultural protection in industrial countries is provided in Table 1. The first two columns report estimates of nominal protection coefficients which are the ratios of actual producer prices to border prices for the major traded foods. The third column provides similar estimates for 1988 but these are based on projected rather than actual prices (see Tyers and Anderson, 1988 for the projection methodology). These estimates suggest agricultural protection has been low in North America and Australia, reasonably high in Western Europe and very high in East Asia. They also suggest that the proportional increases in the nominal protection coefficients have been similarly ranked. The same trend is evident when changes in manufacturing protection are also accounted for, as is done crudely in the fourth column of Table 1.

What is also clear from Table 1 is that agricultural protection levels and their changes are negatively correlated with indicators of agricultural comparative advantage and positively correlated with economic growth and industrial development. This is consistent with the more general finding of a positive and statistically significant log-linear relationship between agricultural protection in 30 countries or country groups spanning the world and their relative income per caput and agricultural comparative disadvantage (Anderson and Tyers, 1988), and also with the combined cross-country and time-series regression results for 15 individual countries reported in Honma and Hayami (1986).

## REASONS FOR THE GROWTH IN AGRICULTURAL PROTECTION

The above evidence suggests that the explanation for the postwar growth in agricultural protection in industrial countries is to be found as part of the answer to the more general question of why farmers are taxed in poor countries and subsidized in rich countries. To begin to address that question it is helpful to recall that an economy's growth is typically accompanied by the following developments (reasons for which are summarized in Tyers and Anderson (forthcoming)):

- subsistence agriculture becomes commercialized so that the share of production that is marketed off the farm gradually increases and the value-added share of output declines both absolutely and relative to that share for industry;
- the share of agriculture in GDP and employment declines from very high levels at early stages of economic development to trivial levels (less than 5 per cent) at advanced stages, and even the absolute number of people employed on farms tends to decline after middle-income status is attained;
- the importance of farm products (excluding processing and other services added after food leaves the farm) in the expenditure of nonfarm households declines from a high level (above 50 per cent) at early stages of development to trivial levels at advanced stages;
- agricultural comparative advantage also tends to decline as an economy develops, and for some (especially densely populated) countries this leads to a switch from being a net exporter of agricultural products to being increasingly dependent on imports of food — or would do in the absence of agricultural

TABLE 1 *Indicators of agricultural protection, comparative advantage and economic growth, industrial countries, 1960–85*

Agricultural protection indicators				Comparative advantage indicators			Real growth per caput (% p. a.) in:	
Nominal protection coefficient for agriculture <sup>a</sup>			Relative price of agricultural products domestically as a % of relative agricultural price internationally, 1981–85 (1961–65=100) <sup>b</sup>	Hectares of agricultural land per caput, 1985 <sup>c</sup>	Food production as a percentage of food consumption, valued at border prices, 1985 <sup>d</sup>	Labour productivity growth in agriculture relative to the total economy, 1960–85 <sup>e</sup>	Gross domestic product, 1960–85	Value added in industry, 1960–85
1965–75	1975–83	1988						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
North America and Australasia			96	3.57	125	2.41	2.1	1.7
Western Europe <sup>e</sup>			120	0.37	106	1.67	2.7	2.6
Japan, Korea & Taiwan			157	0.05	78	0.88	5.9	7.9

Notes:

<sup>a</sup>Proportion by which domestic prices exceed border prices for grains, meats, dairy products and sugar.

<sup>b</sup>Based on the ratio of indexes of prices received by farmers (FAO) and wholesale prices of industrial products (IMF).

<sup>c</sup>Land used for crops (annual and perennial) and pastures.

<sup>d</sup>Production of grains, meats, dairy products and sugar are aggregated using border rather than domestic prices.

<sup>e</sup>Real growth in value added per employee in agriculture as a ratio of real growth in value added per employee in the total economy. Final number refers to Japan only.

Sources:

Tyers and Anderson (forthcoming), based primarily on data from the Food and Agriculture Organisation, *Production Yearbook and Trade Yearbook*, Rome, various issues; Organisation for Economic Cooperation and Development, *Historical Statistics 1960–1985*, Paris, 1987; and International Monetary Fund, *International Financial Statistics: Prices Supplement*, Washington DC, 1986.

protection; and

– the price of farm products relative to the price of other goods and services tends to decline over time in the absence of distortionary government policies.

Each of these changes is likely to occur more rapidly the faster an economy grows relative to the rest of the world.

With these features of the development process in mind, it is clear that a simple vote-maximizing model of politics cannot explain the intersectoral pattern of distortions across countries and over time, since the vast majority of voters are net sellers of farm products (farmers) at early stages of development while at advanced stages they are net buyers of farm products (urban food consumers). Instead it is helpful to draw on the neoclassical economic theory of politics. Following Downs (1957), this theory begins with the assumption that political leaders adopt policies so as to maximize their chances of remaining in office. Individuals and groups who expect to gain from a particular policy seeks its adoption by investing in lobbying and propaganda up to the point where they perceive the expected net benefits from further expenditure to be zero. Similarly, those opposed to the policy lobby against it, again up to the point where the perceived marginal net return is zero. Thus it is possible to conceptualize a political market for policies in which the potential beneficiaries are the demanders of that policy and the political leadership is the supplier. In the case of a distortionary price policy, the supply curve in this market represents the marginal political cost of providing an extra unit of protection to (or less taxation of) an industry, in terms of reduced political support from groups opposed to such a policy change, while the demand curve represents at the margin the preparedness of groups seeking a policy change to offer political leaders various forms of political support. This is thus a quite general framework since in addition to including pressure from various private interest groups it is able to accommodate social and governmental preferences on the supply side, including altruism.

With this simple political market framework the task becomes one of examining the factors affecting the demand and supply curves for distortionary policies in countries at different stages of development, how they change over time with economic growth, and why they differ between countries with similar income levels. Consider initially the factors affecting the demand for and supply of agricultural and industrial policies in a poor economy in which the majority of the work force is still employed in agriculture.

### *The political market in a poor economy*

The demand for farm price supports in poor agrarian economies is typically very weak. This is primarily because of the high cost of collective action by farmers relative to potential benefits from lobbying. Collective action is expensive to organize partly because of the difficulty of free-riding when a large number of small geographically dispersed producers is involved, and partly because of poor-quality transport and communications infrastructure and low levels of education in rural areas of poor countries (Olson, 1965, 1985). And the benefits from lobbying for higher producer prices are small because a relatively small

share of the production of subsistence farmers is sold. Secondly, there are no other significant groups arguing for policies favourable to agriculture: domestic industries supplying farm inputs such as fertilizer, pesticides, machinery and credit have yet to emerge in such economies; and ambitious bureaucrats perceive they can do better by moving to the expanding industrial development and planning ministries rather than staying in the agricultural ministry and arguing for a more favourable policy regime for traditional agriculture. For these same two reasons there is no effective lobby to prevent policies which discourage agricultural production in those countries.

The demand for industrial assistance policies in poor economies, by contrast, is relatively strong. Industrialists are typically better-educated, politically more articulate and small in number. They also are usually based in urban centres in easy reach of people in government. For these reasons the cost of collective political lobbying activity by owners of existing or prospective manufacturing firms is comparatively low.

Factors on the supply side of the political market for assistance policy also favour manufacturing over agriculture. The cost to the government of assisting a sector or group, in terms of reduced political support from the rest of society, is inversely proportional to the size of that sector or group. For example, on the one hand the burden on nonagricultural taxpayers of providing even a small subsidy to farmers in a poor, agrarian economy would be unbearable, particularly given the high costs of tax collection and revenue dispersion (including leakages through corruption) typical of poor economies. On the other hand, providing assistance to budding industrialists in such economies involves a relatively low political cost because of the smallness of that group initially.

This difference in the political costs of assisting farmers as compared with industrialists is accentuated by social and fiscal characteristics of poor agrarian economies. For example, poor societies often have a desire to promote a more 'balanced', less specialized, more industrial economy for its own sake and/or for nationalistic or defense reasons (Johnson, 1965). Since the manufacturing sector begins by replacing imports whereas agriculture in many cases is an export sector, the government can covertly boost manufacturing relative to primary production simply by taxing exports and/or imports. In any case the government can argue that the costs of raising general tax revenue directly via income or sales taxes are extremely expensive, so even though trade taxes are more distortionary than direct taxes they still provide the least costly means of raising revenue. This is especially true of export taxes when a large volume but small number of different products are involved, as in most agrarian economies.

Policies which keep down agricultural prices boost returns to industrial activities in two important ways. One is through the effect which reduced agricultural export earnings have in reducing the supply of and hence raising the price of foreign exchange. This depreciation of the country's currency raises the local-currency price of import-competing manufactures, thereby assisting local manufactures (Clements and Sjaastad, 1984).

The second important boost to industrial activities results from the impact of low food prices on wages. Since as much as half of an urban wage-earner's income in a poor country is spent on food, low food prices keep down the cost of subsistence living in towns and cities. Also, low farm product prices reduce

the demand for labour in the countryside. Together these factors reduce the wage industrialists' need to pay to attract workers from the farm sector. These two effects of lowering agricultural prices provide industrialists with an incentive to support their workers to demand low food prices. At times such demand takes the form of rioting in cities.

In short, industrialists in poor countries can emphasise a number of features which lower the political cost of supplying assistance to manufacturing relative to agriculture: such a policy regime has a net positive effect on government revenue; it has a positive effect on income distribution in the nonfarm sector through lowering the consumer price of food while raising prices of relatively luxurious imported manufactured goods (the fact that it exacerbates urban-rural income disparities being quietly ignored), and it contributes to society's desire to modernize through industrial development. Because farmers have high costs of collective lobbying they are unable to counter these claims.

As this agrarian economy develops over time, however, there are changes to the factors affecting both the demand side and the supply side of the political market for distortionary policies which reinforce each other to reduce the effective taxation of agriculture and eventually provide net assistance to the farm sector relative to other sectors.

### *The political market in an industrializing economy*

The demand for prices favouring agriculture expands because: (1) the benefits of price supports for farmers increase; (2) the costs of collective action by farmers fall; and (3) a number of other groups with a vested interest in expanding agricultural output emerge.

As subsistence farmers become more commercialized the potential benefit to them from seeking higher producer prices increases much more than in proportion to their output expansion. One reason for this is that the share of production that is marketed at those producer prices is rising. Another is that more purchased imports are used, which has two effects: it reduces the value added share of output, and it increases the price elasticity of marketed output. The significance of the former is that a given product price rise (or input price subsidy) will have a progressively larger proportional impact on effective assistance to value added in agriculture over time, while the significance of the latter is that even without changing his land and labour inputs the farmer is able to expand output more in response to a price rise simply by adding more fertilizer etc. For all these reasons farmers' potential benefits from lobbying for favourable price policy changes expand as agriculture becomes more commercialized.

Secondly, the costs of collective lobbying action by farmers fall in the process of agricultural development. Partly this is because of the improvement in education, transport and communication infrastructure in rural areas both in absolute terms and relative to such improvements in urban areas. Of perhaps more importance though is that a way to reduce the free-rider problem of collective action emerges. As farmers gradually commercialize their activities they perceive income-earning opportunities in the supplying of purchased inputs and the marketing of farm output. They also often fear exploitation by the middlemen



who emerge to provide these services. In some countries farmer associations form to increase producers' bargaining power with middlemen by acting as buying or selling groups. In other cases farmer cooperatives are set up to replace middlemen entirely. Farmers are enticed to become members by also being offered regular meetings, rural newspaper subscription and the like<sup>2</sup>. Once these organizations become established they begin to be recognized by the government as a legitimate voice of the farm bloc as well. Thus even though there may still be a large number of farmers, free riding becomes much less of a problem once agriculture becomes more commercialized, given the wariness of farmers towards middlemen and hence their desire to associate.

These farmer organizations, once established, have a vested interest in lobbying not only on behalf of farmers but also on their own behalf. A large domestic agricultural sector means a stronger farm organization. Moreover, because farm input and output sales tend to keep expanding even after the number of farmers begins to decline absolutely, and because co-operatives often allow non-farm rural dwellers to be members also, these organizations tend to keep expanding even though employment in agriculture is falling.<sup>3</sup> The same is true of the agriculture ministry in the government's bureaucracy: it lobbys on behalf of agriculture in part to enhance the prospects of its own size being expanded or at least not reduced. Hence the demand for policies favourable to agriculture strengthens over time as these organizations expand their services and improve their lobbying skills. It also strengthens with the emergence of the new group of manufacturing and service industries producing farm inputs and processing farm outputs in so far as these activities are not undertaken by farmer co-operatives.

Moreover, farmer support for the lobbying activities of their organizations begins to intensify as people begin to leave agriculture, because remaining farmers become aware that one day they too may be confronted with the costly process (in psychological as well as economic terms) of selling to a neighbour, relocating, retraining and then finding a non-farm job. Even for those choosing to stay on a farm, if farm income growth per hectare does not keep pace with non-farm income growth they will feel the need either to buy more land or seek part-time, off-farm work. In either case the adjustment is expensive so a rational alternative is to expand lobbying for more government assistance.

By contrast, the demand for industrial assistance policies grows less slowly, except from the labour-intensive industries which, like agriculture, come under pressure to decline. The comparative lobbying cost advantage of industrialists over farmers is eroded by the relative improvement in communications in the countryside and the establishment of farmer organization headquarters in the capital city, as already mentioned. It is also eroded by the free-rider problem associated with the increasing number of manufacturing firms in each industry, with whom the benefits of any assistance increases have to be shared. In addition, numerous industries graduate from import-replacement to export status and perhaps also become direct foreign investors abroad. Manufacturers' associations therefore become less inclined to seek manufacturing protection policies since that is against the interests of its more competitive members.

Probably more important than these changes in factors affecting the demand for distortionary policies are changes in factors affecting their supply. The

relative decline of agriculture in GDP as an economy develops means that the political cost to the government of supporting farmers gradually falls over time relative to the political cost of supporting expanding manufacturing industries, simply because the deadweight welfare losses as a percentage of GDP from a given price distortion are roughly proportional to the sector's share of GDP. It also means that the balanced-economy, nationalistic or security motivations for assisting the import-competing infant industrial sector gradually disappear. Indeed if in the course of economic growth the country's food self sufficiency declines, those earlier concerns to promote manufacturing may be displaced by food-security concerns to boost agricultural output.

Changes in the fiscal characteristics of the economy also play a role. As the administrative cost of collecting direct taxes falls, less distortionary forms of taxation gradually replace trade taxes as the most efficient form of raising government revenue. While agriculture remains an export sector this change reduces the disincentive effects on agriculture of revenue raising policies. Should agriculture become an import-competing sector, the government would be in a position to provide assistance to it in the relatively covert and revenue raising form of import tariffs, just as it was for the import-competing infant industrial sector at an early stage of development.

Opposition to the raising of farm prices from urban workers and industrialists also dissipates with economic growth, for a number of reasons. One is that the farm-gate price of food becomes increasingly less important in the expenditure of non-farm households as their incomes rise. This, together with the growing problem of free-riding among urban consumers as their number increases, means that over time the government has less and less to lose politically from this group. The same is true of industrialist, because smaller percentage increases in nominal wages are sought following food price increases, the higher the wage level. In addition, as agriculture's share of national employment declines, so too does the effect of boosting agricultural incentives on the demand for and hence price of intersectorally mobile labour. And as economic development proceeds, industries in any case become more capital intensive so wages gradually become a less critical determinant of profits.

If domestic and international productivity and demand changes are such that the real price of farm products would fall in the absence of intervention, as has been the case through most of this century (Grilli and Yang, 1988), the political cost of assisting farmers is further reduced. Many urban people in industrial countries have a fondness toward farmers because of the perceived virtues of country life and the fact that their recent ancestors were farmers. Their sense of fairness is aroused when farm output prices are not keeping up with inflation and farmers are having to leave the land *because* the sector's labour productivity growth, as shown in Table 1, has been outstanding. So when farm lobbyists direct media attention to the plight of small farmers in left-behind regions, few groups actively oppose policies which merely slow the decline in real food prices and farm employment<sup>4</sup>.

## CONCLUSIONS

Even though the above involves a highly simplified description of the political process, it nonetheless helps explain why distortionary price and trade policies are biased against agriculture in poor agrarian economies, why this policy bias changes gradually in favour of agriculture as an economy grows (particularly if growth is accompanied by a decline in agricultural comparative advantage as in petroleum-exporting countries in the 1970s), why this move to policies which favour farmers occurs at a lower income per caput level the lower the comparative advantage in agriculture in this as compared with similar-income economies, and why the switch occurs faster the faster the growth of the economy and the faster the decline in its agricultural comparative advantage.

In particular, the above analysis helps explain why rapidly industrializing East Asia has switched from taxing to assisting more rapidly than other industrializing countries, why the slower-growing, lightly populated economies of North America and Australasia, which have a strong comparative advantage in many agricultural products by investing heavily in agricultural research, have done little until recently in the way of altering policies to favour agriculture more, and why Western Europe, which is between these two extremes in terms of agricultural comparative advantage and economic growth rates, has experienced some growth in agricultural protection though less than in East Asia.

Much work remains to be done to explain agricultural protection growth more precisely. Recently papers by Petit (1985), Gardner (1987) and Winters (1987), the comparative study supervised by Krueger, Schiff and Valdes (1988), and the papers in this session of the IAAE conference are but an important beginning. In the meantime, however, the interim conclusion that emerges from the above is that, left unchecked, agricultural protection is likely to continue to increase in currently protected economies and to spread to less-developed economies as they industrialize. The commonly held view that the political influence of the farm sector will diminish as the number of farmers declines is evidently erroneous, at least until we get to some as yet unreachd threshold.

The implication of that conclusion for the global food economy is clear: an increasing share of the world's food will be produced and exported from high-cost environments while the bulk of the world's poor, namely farmers in low-income countries, face artificially low prices and hence dampened incentives to produce their way out of poverty. It is as much for the sake of those producers in LDCs as for nonagricultural producers and food consumers in industrial countries that one hopes some agricultural policy reform results from the Uruguay Round of multilateral trade negotiations.

## NOTES

<sup>1</sup>Evidence of agricultural protection in industrial countries is included in McCalla (1969), Johnson (1973), Gulbrandsen and Lindbeck (1973), Bale and Lutz (1981), Tracy (1982), Anderson, Hayami *et al.* (1986), World Bank (1986), OECD (1987) and Anderson and Tyers (1988); evidence of policy discrimination against agriculture in developing countries is available in Little, Scitovsky and Scott (1970), Balassa and Associates (1971), Schultz (1978), Peterson (1978), Lutz and Scandizzo (1988), Bates (1981), World Bank (1983) and Krueger Schiff and Valdes (1988). Olson

(1985) notes from Adam Smith's *Wealth of Nations* (Book 1, Ch. X) that even Britain taxed agriculture relative to other sectors prior to the industrial revolution.

<sup>2</sup>The ingenuity of co-operatives in finding ways to entice membership is quite remarkable. See Olson (1965) and, for the Swedish case, Bolin *et al.* (1986).

<sup>3</sup>This has even happened in Japan where agricultural employment has declined severely. See George (1986, Table 8.3).

<sup>4</sup>This verbal description of the political market forces at work is analysed more formally in Anderson (1988).

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## DISCUSSION OPENING – MASAYOSHI HONMA

Anderson and Tyers' paper presents us with a general framework to consider the growth of agricultural protection in industrializing economies. Anderson and Tyers conceptualize a political market for agricultural protection policies and seem to succeed in explaining the long-run trend of distortions in the agricultural sector. Their insight into the process of the political market is a useful step for sharpening our understanding of world agricultural policies in disarray. Since I have been doing research myself on agricultural protection using a similar approach to theirs, I do not disagree with the substance of their paper. Therefore, my following remarks will supplement rather than criticize.

The political market approach is an attempt to explain why certain government interventions are persistent and not likely to cease despite the fact that they are economically less efficient and usually lead to high cost solutions to stated objectives. The solution in the political market does not coincide with economic efficiency. Therefore, analysis of the political market gives a rationale to the discrepancy between them. Anderson and Tyers show on this line a strong logic of political economy behind the pervasive adherence of low-income countries to taxing agriculture and high-income countries to supporting agriculture. The difficulty, however, arises in evaluating empirically their view of the political market, because policy formation is considered to follow a subjective equilibrium of politicians. The demand and supply schedules of a policy which changes the level of agricultural protection are essentially the marginal evaluations of changes in political support of politicians by demanders and opponents, respectively, of agricultural protection. Therefore, the level of protection is determined at the subjective equilibrium of politicians to maximize their net revenue in the form of political support. To be convinced of this view in policy formation among others, we need a more formal and empirically testable framework of the political market translating the process of subjective equilibrium into some observable variables. This is my first point.

My second is concerned with the so-called free rider problem in collective action. Anderson and Tyers succeed in a systematic explanation of switching agricultural policy from taxing to assisting agriculture in the course of economic

development. The major reason for such switching policy is that the free rider problem in collective action pointed out by Mancur Olson, which prevents the effective collusion of large groups, shifts from agriculture to the nonagricultural sector as the share of agriculture in production and employment shrinks. Therefore, the size of industry plays an important role in explaining the effectiveness of political lobbying. This may be true as a global view in the long run. More precisely, however, the concept of the free rider problem is related to collective action in an organization rather than in a sector of economic activity, as I understand it. The political interests are not necessarily the same for the people in an economic sector and they may have different historical backgrounds in the practical politics. This means that the concept of the free rider may be more appropriate for the explanation of differences in the degree of protection or taxation across different commodities. In other words, we need a more disaggregated analysis as an extension of the study.

The third comment relates to the cost of interventions. Anderson and Tyers are fully aware of the costs of interventions for domestic consumers and taxpayers, as well as the costs for foreign producers and consumers in distorting their incentives in international markets. However, they do not touch explicitly on the cost of wasting resources in political lobbying. In order to influence politicians interest groups invest in lobbying but the outcome is nothing economically productive. Lobbying activities clearly absorb scarce resources and the social value of these resources should be counted in the total welfare cost as well as the conventional deadweight loss arising from government interventions. If this cost of rent-seeking activities becomes large, it seriously disturbs economic development and delays the take-off of developing economies. The relationship between government interventions and the rate of economic growth is complicated but it is an interesting and important topic to consider in development economics.

The fourth comment concerns the players in the authors' model of the political market. As discussed above, the demand and supply curves of agricultural protection represent the marginal changes in political support to politicians by demanders and opponents of agricultural protection. Therefore, the political market consists of such players as farmers, consumers and tax payers, as well as politicians. However, we need to introduce another player in the political market if we try to analyse the development of agricultural protection in an international linkage. This is the foreign pressure on agricultural policies. The intense trade frictions and the international pressures to reduce agricultural protection raise the political cost, which results in an upward shift of the supply curve of agricultural protection. The recent agreement of Japan with the United States on the removal of import quotas for beef and oranges is an example of the importance of foreign pressures in changing the protection level. In other words, the political markets are internationally linked and agricultural policies are not independent in a dependent world. Therefore, we need to explore this aspect of the political markets in detail.

Finally, I would like to emphasize the importance of the implications of the study for the world agricultural economy. The authors conclude that agricultural protection is likely to continue to increase in developed countries and to spread to less-developed economies as they industrialize. This is an important lesson to emerge. Especially, their long-run perspective of agricultural protection growth

is noteworthy because the experience of rapid increases in agricultural protection in Japan, Korea and Taiwan, China may be repeated in other newly industrializing economies unless more efficient alternative policies are promoted to support agricultural people whose incomes tend to lag behind those of urban people. Examples of the alternative policies include public investments in rural research and education, decentralization of industry and improvements in transportation and communication infrastructures in rural areas. I hope that this lesson drawn from the study is referred to in the current Uruguay Round of multilateral trade negotiations and that international collaborative efforts to prevent the spread of agricultural protection are intensified.