

# IMPEDING FACTORS IN THE ADJUSTMENT OF JAPAN'S AGRICULTURE

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## I. RIGIDITY WITHIN A DUPLEX STRUCTURE

**W**HAT ROLE IS agriculture playing within Japan's fast-growing and industrialization-oriented economy? Is it a positive or negative one? This question has become central in all discussions of Japan's economic development at the present moment.

The development of any particular industry, of course, will generate friction or resistance in the sense that its growth requires a reallocation of limited national resources between competing industries. Within a fast-growing economy one should expect such friction and resistance to be particularly severe. But precisely for that reason the rate of growth of our economy is susceptible to significant improvement in proportion to the smoothness with which this reallocation of resources is accomplished. A major problem of economic policy planning has accordingly become how to maximize the smoothness of this reallocation. In resonance with the international and internal controversy currently surrounding the question of Japan's agricultural policies, the above considerations will serve to focus attention particularly on the matter of readjusting Japan's agricultural industries.

According to its critics, the protectionist policies currently in force with regard to Japanese agriculture have become an obstacle to the growth of the economy as a whole. On the internal scene, repeated hikes in the price at which the government buys rice from the farmer, carried out as a matter of political considerations backed up by the farmers' strong pressure, are seen as inflating the price of rice for the consumer, driving the price of rural and urban land upward, and damming an excessive amount of labor force in the agricultural sector. It is criticized that non-agricultural industries are hampered in the location of necessary factory sites and manpower. And another criticism is related to an excessively burdensome level of financial expenditure for the sake of the high price policy of rice, which now absorbs funds that could be much more productively utilized otherwise.

In international terms, critics of a protectionist policy regard the quota restrictions and high tariffs imposed upon imported agricultural produce in connection with government control of domestic products centering on rice and wheat, as interfering with the effective development of international division of labor, thereby obstructing the market expansion potential and foreign-reserves purchasing power of countries exporting agricultural produce. The result of this obstruction is considered to provoke the erection of trade barriers aimed at

Japan's largely industrial exports; to a degree, Japan's accumulation of a gigantic surplus of foreign reserve is also seen as a product of her agricultural protectionism.

In political terms, however, the pressure for protectionism seems to remain strong, notwithstanding the above criticism. The influence of "farm lobby" representatives in the Diet remains far in excess of the proportion occupied within the national labor force employed in the agricultural sector. In spite of growing sentiment among consumers in favor of eliminating rice price controls, the "farm" bloc continues to exercise considerable power within the government, as is reflected in the recent decision to limit production rather than eliminate control as a means of dealing with the huge surpluses of unsold rice in government granaries. Not surprisingly, producer and consumer rice prices have continued to rise under this policy.

In reality what can we say about the effect upon the growth of the Japanese economy as a whole of the adherence to a protectionist policy, and of the type of agriculture that has developed as a result of such a policy? If protectionism really functions to inhibit the reallocation of existing capital resources in the cause of maintaining the present balance between the industrial and agricultural sectors, then it may safely be asserted that economic growth would be made so difficult. Even in terms of demand alone, protectionism can be seen as hampering the redeployment of capital resources that would naturally occur in response to a restructuring of demand as the result of economic growth.

But, actually the quarter-century immediately following the end of the Second World War saw economic growth paralleled both by a depletion of the farming population and a reduction in the number and change in the character of farming unit. The capacity of domestic agriculture to supply for the demand of agricultural produce of the nation as a whole was likewise significantly transformed. In simplest terms, Japan's agricultural self-sufficiency has been declining yearly. The ability of her domestic agriculture to supply foodstuffs, if measured in terms of basic caloric value, has now plummeted to what surely must be the lowest among the developed countries of the world.

The cause of this declining self-sufficiency, paradoxically enough, seems to be the creation of a "duplex structure" in Japanese agriculture developed in connection with foreign competition. The "duplicity" in question is, in other words, a product of the unevenness of foreign competitive pressure upon Japanese agriculture in the postwar period: in some sectors, Japanese agriculture developed competitively with foreign imports, while in others its growth was shielded from import competition. In the former category are the chicken and pork livestock industries, which are largely dependent upon imported feed; in the latter are the Japanese dairy, sugar-cane, wheat, and (most notoriously) rice industries. Characteristically, the former industries involve a kind of agriculture not dependent upon the soil and reliant upon newly developed agricultural techniques, while the latter are soil-dependent and are based upon "indigenous" methods. In contrast to agricultural industries of the former type, which developed in response to a changing demand structure, those of the latter category—notably

rice cropping—tend to supply a market at the present rather stagnant. In terms of pricing the bifurcation described above has served to make the price of eggs and broiler chickens in Japan comparable to the international market price, while that of rice remains of course far above the world market price level.

The critics of a protectionist agricultural policy would thus seem to be most justified with regard to soil-dependent agriculture, especially rice farming; and least justified in connection with several other sectors of Japanese agriculture, especially chicken and pork-raising. Thus, Japan's postwar agriculture has continued, notwithstanding the argument of the agrarian protectionism, to grow as a part of Japan's developing economy precisely because it has adopted a duplex structure. But wherein lie the foundations of this duplex structure? What were the circumstances that permitted the bifurcation we have described? Space will not permit us to treat the historical aspects of the problem, in a comprehensive way; let us confine ourselves here merely to remarking that the livestock industry in its current form is essentially a postwar innovation, from the moment of its inception dependent on rich feeds imported from abroad rather than the domestic soil, and consequently poorly situated to benefit from the erection of any kind of protectionist measures.

In contrast, rice farming, being soil-dependent, has naturally been affected by the special measures the government has been required to take with regard to farmland in connection with the remodelling of Japan's economy in the postwar period. At any rate the adjustment of agriculture has become a necessary condition or outcome of economic development. And Japanese agriculture is at present characterized by a kind of rigidity which hinders the smooth implementation of such an adjustment. In the pages which follow we shall seek to explore the factors in the background of this dilemma.

## II. THE PROBLEM OF AGRICULTURAL ADJUSTMENT IN A CONTEXT OF ECONOMIC GROWTH

Let us begin our consideration of this problem with more general inquiry into the role of agriculture in the economic development of a nation, and into the question of readjustments of resource allocation as a precondition of economic development.

Generally speaking, the lower a nation's per capita income, the larger the weight of agricultural production within her industrial activity as a whole. As growth occurs, the weight of agriculture diminishes. But, just as there exists no country which was not at one time "agricultural," even the most advanced industrial countries with the highest per capita income levels have not eliminated agricultural production entirely. The United States of America and most of the countries of Western Europe (notably Sweden, England, etc.) rank highest in the world in terms of per capita national income; but none of these countries are completely without a farming population. Though the economic significance of farming has been reduced to a low level in these countries, farmers and farming continue to exist and to carry with them their own particular problems. The

United States of America, which has the highest per capita national income in the world, continues to produce surplus of agricultural produce for export to other countries including Japan, as we have already remarked; while in England, where it has numbered less than 5 per cent of the total population for nearly three decades, there is no anticipation at present of the farming population being reduced to zero. Very much the same is true in Sweden, Norway, and Denmark. What is more, none of these advanced countries are unaffected by troubles in the agricultural sector; to the extent that they are still beleaguered by a variety of agricultural problems of larger and smaller significance, these countries could be said to be conforming to a larger international pattern in this regard.

This does not, of course, mean that the agricultural industries of these countries are entirely reliant on protection and subsidies from their governments. A considerable proportion of farming in the United States of America and Western Europe is carried out on an internationally competitive basis. One might even say that agriculture in these parts of the world rests upon a foundation of international competitiveness. But it cannot be overlooked that, at least in some quarters, the governments of these countries intervene to protect and guarantee their own agricultural production, and that within the various contexts involved, such intervention is undeniably rational in its foundations.

To begin with, we must consider that the usual explanation for the decline in the overall weight of agricultural production as the level of national per capita income rises is that the potential demand for manufactured goods is far elastic than that for agricultural produce. It is a general rule that, should technological changes double the output both of agricultural and manufactured products, the decline in price of agricultural products would be much greater than that of manufactured goods. The increment in income afforded agriculture by such technological advances would thus be considerably less than that afforded industry: assuming, that is to say, that the income expectation per unit of outlay in land-use and labor-use were comparable in the agricultural and industrial sectors preceding the introduction of any productivity-boosting technological advances, the introduction of such an advance in itself would automatically upset the balance in favor of the industrial sector, and make agriculture uncompetitive in terms of profitability. To remedy this imbalance it would be necessary to transfer such resources as land, labor, and capital from the agricultural to the non-agricultural, industrial sector of the economy. This process, of course, is generally regarded as in conformity with the logic that couples economic growth with a diminishing weight of agricultural production in the economy as a whole. If we pursue this logic a step further we shall arrive at the somewhat startling conclusion that the relative disadvantage of the agricultural sector, given an overall context of industrialization and economic growth, shall be in proportion to the speed of its technical progress. Big crop, in other words, results in the pauperization of the farmer. Increased yield, that is to say, does not generate sufficient income through lowered per unit production costs to balance out the fall in price created by the increased supply of the commodity in question: the lower level of productivity consequently proves to be more profitable.

Of course the model we have constructed in the preceding paragraph assumes a closed economy, with economic exchange occurring only within national borders. In reality markets both for industrial and agricultural products are largely international, at least to the extent that the potential of productivity-boosting technological progress to generate proportionate increments in profitability is not entirely restrained by the size of the domestic market. Even in the agricultural sector it is not necessarily the case that the reduction in cost per unit created by increasing the technological productivity must inevitably be absorbed by an even greater drop in the market price of the commodity in question. If an international market for the commodity is available, productivity-boosting technological progress can be expected to pay off in a comparable increment in the profitability of that commodity's production. Or, to put the matter another way, should the commodity in question be exposed to foreign competition as the result of free trade, obsolescence of production technology will lead to a relative decline in profitability.

The relationship between productivity-boosting technological advances and relative profitability will thus be seen to depend upon whether or not foreign markets are open to the product in question, as well as upon the degree to which such markets are accessible. But it must not be overlooked that there are many kinds of agricultural products not suitable as commodities for international exchange. Gold, silver, and jewelry, for instance, lend themselves to international trade because their high price/weight and price/volume ratios do not raise their shipment costs to a level where they might become a trade disincentive. Quite the opposite is the case with vegetables and raw liquid milk, which have very low price/weight and price/volume ratios, and are accordingly unlikely to become international exchange commodities. Flowers, shrubs, and other horticultural products are likewise of value only when viewed in the soil: the same obtains for a range of agricultural products which are not easily removed from the soil in which they were grown, and are therefore not suitable for international trade. This kind of agriculture therefore tends to remain domestic throughout all the stages of industrial growth. For which reason it will be seen that certain kinds of domestic agriculture are able to justify themselves economically no matter how far industrial development has proceeded.

To summarize the discussion so far, then, it shall have to be conceded that in practice many kinds of agriculture continue to exist, in some cases, as the objects of state support in the industrial countries, although the relationship between production technology and marginal profitability might be complex in specific cases. In its actual forms we find this support taking several shapes, including deficiency payments (in which prices are allowed to fluctuate freely, at the level of the international market, while direct deficiency payments are made by the government to farmers whose realized income in the free market falls below a predetermined standard) and export dumping (in which two levels of pricing are set, one domestic and high, the other for the export market and lower, so as to realize a greater income for the farmer than he would have in a mono-price market). The former system was in force in England till 1972, while latter type

supports are now policy in the United States of America, various EC countries and most of the continental countries of Western Europe. Finally, on the most obvious level, we find certain countries imposing quota restrictions on the import of cheap agricultural produce, or achieving the same purpose by applying steep import tariffs.

The basic logic behind these policies is that, for one reason or another, it is considered undesirable in social terms that farmers should have their incomes eroded to the level they would find if farm prices were allowed to fluctuate freely. Setting aside the predictable disaffection of farmers themselves with any set-up that would lower their income, it must be stressed that in almost all of the advanced, industrial countries of the world farm policies aimed at preventing or ameliorating farm income decline are, in spite of much criticism, generally considered desirable. In terms of the national economy, such policies are usually able to guarantee the stability of the domestic market, to insure a stable market for large-scale manufacturing industries, and thereby to secure a stable rate of economic turn-over for the national economy as a whole. And it would not be an exaggeration to say that, in social terms, such policies are in conformity with the needs of national security. In the opinion of this writer, it is only through our adherence to a policy of agricultural protection that Japan has been able up till now to adjust her agriculture while simultaneously generating much social prosperity.

In purely rational economic terms, that is to say, it would be reasonable to expect that allowing the price of agricultural products to fluctuate freely in accordance with the international market should lower the profitability of farming below the level current in the non-agricultural sector, making the existing allocation of resources irrational, and thereby motivating a transfer of land, labor, and capital from the agricultural to the non-agricultural sector. The parity between incomes in the agricultural and non-agricultural sectors would be restored only when incomes in both sectors had been balanced at the level of a so-called "functional income." In practice, however, such a redeployment of resources would not take place easily. People would resist leaving their accustomed environment and occupations, or they would think that the transfer of occupation gives rise to significant economic disadvantages. A rural labor force, specialized in its expertise and training, could obviously not be immediately mobilized as an industrial labor force. And in acquiring the expertise appropriate to industrial, non-agricultural occupations, this specialized expertise would actually be a liability, at least in comparison with the trainability of previously unconditioned younger workers.

Another factor impeding the transfer of resources from the agricultural to the non-agricultural sectors is the ownership of land and investment of capital in farming by large landowners and financial organizations. The reduction of the farming population and of cultivated acreage attendant upon such a transfer of resources would tend to lower the level of rents and generate other losses of income originating from various vested interests, and would accordingly be certain to elicit deep-rooted reaction and resistance on the part of the victimized interests.

For even if it is conceded that the transfer of resources from the agricultural to the non-agricultural sector shall ultimately and normally create a rise in productivity, the immediate consequences for such interests as we have mentioned will be in all probability negative. It is for these basic reasons that protectionist agricultural policies have generally been demanded and—to varying degrees—implemented in the industrially advanced countries of the world. In terms of principle, the same has been the case in Japan, even though particular conditions in our country have given what might be called a specially Japanese flavor to the form which these policies have assumed.

### III. THE TRANSFER-RESISTANT MANPOWER RESIDUE

It must first of all be realized that there exists in Japan a considerable reservoir of labor force which is resistant to transfer outside of the agricultural sector. It would not be an exaggeration to say that Japan's rapid economic development in the postwar years has already resulted in the transfer of virtually all readily redeployable labor force from the agricultural to the non-agricultural sectors. From the mid-Meiji until the Second World War Japan's farming population remained more or less constant at the level of 14 million or so persons. In the immediate postwar years, the figure swelled temporarily to about 17 million. But in the quarter century since the end of the War the farming population has been drastically reduced to the level of 8 million persons (in 1970). Needless to say the largest decline has been in the young and early adult age groups, principally because these age groups have been most able to redeploy themselves into the non-agricultural sector in response to the rising demand for their labor. The responsiveness to the increasing demand for labor in the non-agricultural sector of repatriated soldiers and urban unemployed temporarily returned to the countryside was of course to be expected. But many children of farming families who had already taken up their fathers' occupation proved equally easily attracted to non-agricultural jobs.

Particularly in recent years, the number of "fresh" high- and middle-school graduates of farming background who have elected to take up careers as farmers has become extremely small. Of the 1,130,300 students who graduated in March 1971, some 460,100 have sought immediate employment. But of these latter, a mere 31,900 (or less than 7 per cent) have sought employment in the agricultural sector. And of this latter group, 23,700 (or 74.3 per cent) were males; the number of "fresh" graduate females choosing farm work has become exceedingly small, and their proportion within the larger group of "fresh" graduates seeking immediate employment has been declining even faster than that of "fresh" male graduates.

Predictably, these trends have resulted in a gradual rise in the average age of the farm labor force, and an increase in the proportion of females within that labor force. As shown in the appended table (Table I), based on materials relevant to the agricultural labor force in 1971, of the total of 8,636,000 persons employed that year in the agricultural sector, some 4,931,000 (about 57 for every

TABLE I  
COMPOSITION OF FARM LABOR FORCE (1971)

		Number of Labor Force (1,000)	Percentage
Males	Under 20	67	0.8
	20-34	610	7.1
	35-59	1,984	23.0
	60 or over	1,044	12.1
	Subtotal	3,705	42.9
Females	Under 20	40	0.5
	20-34	947	11.0
	35-59	3,182	36.8
	60 or over	762	8.8
	Subtotal	4,931	57.1
Grand total		8,636	100.0

Source: [2].

Note: "Farm Labor Force are defined as those principally engaged in working in jobs the main content of which is self-employed farming.

100 persons) were women. Furthermore, of that total labor force, as much as 20.9 per cent (1,806,000) were men and women over sixty, or "old" farmers. By contrast, the number of farmers under age thirty-four (i.e., still potentially redeployable as a non-agricultural labor force) was a mere 19.4 per cent of the total, while the number of men and women under twenty was only 107,000, or only 1.3 per cent of the total farming population.

Furthermore the importance of female and old-age workers tends to increase as the scale of farming enterprise surveyed is reduced (Table II). According to the results of a census carried out in 1970 (a year earlier than the one upon which the information in the preceding paragraphs has been based), women constituted respectively 69.2 and 61.7 per cent of the labor force employed in the management of farms in the 0-0.5 and 0.5-0.7 hectare or "petty" farm brackets, while the percentage of workers over sixty among the total number of males employed in farms of this scale was respectively 51.5 and 57.1. At the same time the total number of male and female workers employed in running farms within the 0-0.5 and 0.5-0.7 hectare brackets figured respectively as 20.7 and 13.8 per cent of the total farm labor force—which is to say that as much as 34.5 per cent of Japan's entire farm labor force is employed on farms of less than 0.7 hectare (or "petty") scale. Moreover as much as 43.8 per cent of the male farm labor force of more than sixty years' age is employed in the operation of farms of less than 0.7 hectare size.

Another characteristic of Japan farm labor force is that the majority of women employed in farming work are the wives of farm managers or the widows of farmers who have themselves taken over managerial responsibility. In the latter case, of course, these women are not potentially redeployable into the non-



TABLE II  
COMPOSITION OF FARM LABOR FORCE FOR VARIOUS FARM SIZES (1970)

	Males					Females	Grand Total
	Total	Under 20	20-34	35 or Over	60 or Over		
National total (excluding Hokkaidō)	100.0 (42.9)	2.1	16.8	81.1	[27.9]	(57.1)	(100)
Less than 0.5 ha	100.0 (30.8)	0.9	7.6	91.4	[51.5]	(69.2)	(100)
0.5-0.7	100.0 (38.3)	1.2	10.8	88.1	[57.1]	(61.7)	(100)
0.7-1.0	100.0 (43.5)	1.6	13.9	84.5	[28.5]	(56.5)	(100)
1.0-1.5	100.0 (47.9)	2.0	18.8	79.3	[21.9]	(52.1)	(100)
1.5-2.0	100.0 (50.5)	3.2	23.7	73.0	[17.2]	(49.5)	(100)
2.0 ha or more	100.0 (51.9)	4.5	27.1	68.4	[14.2]	(48.1)	(100)
National total (excluding Hokkaidō)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 0.5 ha	14.9	6.6	6.8	16.8	27.4	25.1	20.7
0.5-0.7	12.3	6.8	7.9	13.5	16.4	14.9	13.8
0.7-1.0	20.0	15.0	16.5	20.8	20.4	19.5	19.7
1.0-1.5	27.0	25.3	30.2	26.4	21.2	22.0	24.2
1.5-2.0	14.2	21.8	20.0	12.8	8.7	10.4	12.0
2.0 ha or more	11.6	24.4	18.6	9.7	5.9	8.0	9.4

Source: [2].

agricultural sector save at the price of abandoning farming entirely. Furthermore, even in the former case potential for transfer into the non-agricultural sector is extremely limited—especially where this transfer would require a change of residence (from the village to the city), as such a change would naturally be tantamount to a relocation of the family.

The general inaccessibility of non-agricultural jobs to workers over sixty years of age is, of course, a matter of general knowledge. In Japan the general retirement age for full-time workers in the non-agricultural sector is between fifty-five and fifty-eight—in any event less than sixty. For farm workers of more than sixty years, opportunities for all but unskilled, temporary jobs in the non-agricultural sector are non-existent.

The composition of Japan's current agricultural labor force, then, must be regarded as the result of the absorption into non-agricultural, mainly industrial, occupations of the greater part of our redeployable labor force during the course of the rapid economic growth of the postwar years. The relatively larger proportion of female and old-age workers engaged in agriculture, as compared with other industries, is not in itself a new development, since farms have traditionally been for the most part worked by family-labor. What concerns us here is the remarkable rate at which the proportions of female and old-age

workers within the agricultural labor force have been rising—with the result that the current farm labor force may now be represented without too much exaggeration as consisting mainly of these two types.<sup>1</sup> This being the case, it is to be expected that, as long as these two classes of workers continue to dominate the farm labor force and continue to seek the maintenance or increase of their current income levels, any measures which threaten the status quo will elicit their opposition. For these two sub-groups, at any rate, there is no possibility of implementing any income-protection or income-supplementing policy which would require a shift in location or occupation. It is for this reason that, all other conditions being equal, these groups tend consistently to prefer price supports as a means of guaranteeing and increasing their incomes. As we have already commented, the proportion of transfer-resistant workers is particularly high in petty farm households—a consideration which adds further weight to the arguments for higher farm prices, for the reason that, generally speaking, smaller farms tend to be characterized by a higher level of labor inputs and of production costs per unit of product.<sup>2</sup>

<sup>1</sup> The following table shows the rapid rate at which the proportion of old-age people has been increasing within the total farming population. Though a simple equation of old-age people in farm households with old-age agricultural workers is inappropriate, a paralleling rise in the proportion of old-age workers should not be hard to deduce as well.

THE PROPORTION OF OLD PEOPLE IN FARMING AND NON-FARMING HOUSEHOLDS

		Total Population (1,000)	Proportion of Total Population		
			Over 55	Over 60	Over 65
Farm household population	1965 :	30,083	19.3	14.4	9.8
	1970 :	26,279	22.2	16.7	11.7
Non-farm household population	1965 :	62,192	12.4	8.3	5.2
	1970 :	77,077	12.5	8.6	5.5
Total population	1965 :	92,275	14.7	10.3	6.7
	1970 :	103,356	15.0	10.7	7.1

Sources: Ministry of Agriculture and Forestry, *Nōringyō sensasu* [Agriculture and forestry census]; Prime Minister's Office, *Kokusei chōsa* [National census].

<sup>2</sup> For examples let us turn to the figures on production costs in rice cropping available for the year 1970. If the average labor input per 10 are (1,000 m<sup>2</sup>) for all classes of farms is taken as 100, the quotients for farms within the 0–0.3 and 0.3–0.5 hectare categories were respectively 125 and 118. If a similar comparison is made in terms of production costs per 150 kg of rice, the figures will be respectively 122 and 115.

COMPARISON OF LABOR INPUTS AND PRODUCTION COSTS IN  
RICE GROWING FOR VARIOUS ACREAGE RANGES (1970)

	Labor Input Quotient (Per 10 Are)	Production Cost Quotient (Per 150 kg of Rice)
Average for all ranges	100	100
Less than 0.3 hectares	125	122
0.3–0.5 hectares	118	115
0.5–1.0 hectares	107	110
More than 3 hectares	95	76

Source: [1].

Furthermore, it must be stressed that petty, cost-expensive rice farms exist in large numbers. Figures for 1970 show that there were 2,590,640 farms which planted less than 0.5 hectares of rice that year—some 54.4 per cent of all rice farms, or 48.5 of all farms (including those which planted no rice).

Furthermore the following figures will show that, as was emphasized in a recent publication of the Ministry of Agriculture and Forestry, *Nōka keizai chōsa* [Farm economy survey], "farming households consisting only of women or people over sixty" compared very unfavorably in terms of efficiency of production with "farming households containing a full-time male farmer of less than sixty years age"—a fact which doubtless helps to explain the labor inefficiency of petty farms. This is to say that, both in terms of scale of management and planted acreage, and the number of full-time farm workers employed, as well as in terms of the amount of fixed capital invested, farms of the former type tend to be of smaller scale than those of the latter, while at the same time inferior in productivity. Whether measured per ten-are of acreage planted, or per labor time input, the net productivity of farms of the former category is notably lower than that of farms of the latter type (see Table III). At the same time, the level of

TABLE III  
COMPARISON OF FARM ENTERPRISE CATEGORIES AND  
MANAGEMENT INDICES (1967-70)

	Farms with Full-time Male under 60				Farms with Only Female or over 60 Male Full-time Workers			
	1967	1968	1969	1970	1967	1968	1969	1970
Number of family members	5.58	5.46	5.36	5.29	5.15	4.92	4.82	4.70
Number of full-time farm workers	2.08	2.20	2.16	2.15	1.17	1.24	1.21	1.21
Self-employed work time (hours)	4,855	5,114	5,034	4,995	3,099	3,166	3,152	3,127
Total acreage of the land cultivated (are)	140.1	141.1	145.1	148.0	100.5	96.4	97.6	101.7
Percentage of paddy-field in total land cultivated	81.9	83.8	85.6	84.9	65.0	63.8	64.3	65.2
Amount of fixed farming capital (1,000 yen)	1,329.2	1,488.7	1,738.2	2,043.9	868.2	948.2	1,054.7	1,202.5
Net income per hour of farm labor inputs (1,000 yen)	0.196	0.174	0.199	0.205	0.158	0.154	0.163	0.160
Net income per 10 are of farm (1,000 yen)	60.7	62.9	69.0	69.2	48.5	50.5	52.5	49.2
Percentage of total gross farm income derived from rice farming	36.6	36.6	31.9	26.5	51.5	51.9	46.2	42.0

Source: [3, p. 19].

Note: A "full-time farm worker" is defined as working a minimum of 150 days per year at farming.

dependence upon rice cropping, in terms of income, is remarkably high in the former bracket. Statistically speaking, farms of the former type numbered, as of 1970, 18.9 per cent of all farming households (as opposed to 38.1 per cent for farms of the latter category), and their proportion was on the increase. The same survey shows, furthermore, that a low level of productivity similar to that encountered in farms of the former type is characteristic of another major sub-

category of farms—i.e., those on which “no full-time farmers are employed,” which comprised 43.3 per cent of the total number of Japan’s farms in 1970. (“Full-time farmers” were defined in the survey as those spending more than 150 work-days per annum in the operation of their own farms.) Doubtless a very large proportion of the total labor force on this last type of farms likewise consisted of female workers and workers over sixty. It need be emphasized that the presence of such a large population of non-redeployable farm workers in the rice-growing and other agricultural industries serves to strengthen the argument for requiring the high level price of rice and other farm products.

#### IV. FARMLAND MARKET VALUE AS A CONCERN OF THE RESIDUAL FARM POPULATION

Another consideration in favor of the protectionist policy is the presence of what might be termed an “unnecessarily” large number of farmers whose aims and interests are particularly concerned with the preservation of the value of farming property centering on farmland.

The land policies of the Japanese government have, to be sure, undergone some superficial changes in the quarter-century since the War. But, in fundamental terms, the aims of these policies have remained unchanged since the completion of the Land Reform of 1947–50, since which time most policies have been aimed merely at continuing or further realizing the direction charted in the immediate postwar years.

The consequences of the Land Reform, in brief, were two: (1) a significant expansion in the amount of farmland cultivated by its owners, and consequently in the number of owner-cultivators; and (2) improved security of tenure for the tenant-cultivator. In the former connection, the Land Reform put nearly 2 million of the 2.5 million hectares of land rented by tenants in the pre-reform era into the hands of the cultivating tenant farmers. As a result of this shift in ownership, the proportion of tenant-cultivated acreage measured against the total amount of farmland under cultivation was reduced from 46 per cent to 10 per cent. Naturally such a change was accompanied by an increase in the proportion of farmers owning the land they cultivated—from 30 per cent before the Reform to approximately 60 per cent after this. At the same time the condition of those farmers who continued to cultivate rented land was considerably improved as a result of the implementation of compulsory commutation (rent payment was shifted from kind to cash) and rent control legislation. Before the Reform it had not been uncommon for tenants to pay as much as half the yield, in other words the market value of their crops as rent; but during the period 1950–55, the average rent range declined to as little as 4–7 per cent of the crop market value [4, Chap. 1]. Furthermore the ability of the landlord to recall farmlands from his tenants became severely restricted, while the right of the tenant to restrain the recall of his rented lands acquired strong legal reinforcement.

The Farmland Law drafted in 1952 further strengthened the position of the cultivator both by further encouraging the tenant-farmer to purchase his rented

lands from the landlord and by creating legal disincentives for the contracting of new landlord-tenant relationships or the revival of discontinued tenant contracts. More concretely, the 1952 Law prohibited the letting out for rent of land put into the hands of tenants during the Land Reform, and made it impossible for a landlord wishing to sell his land to convey it to a party other than the tenant(s) currently engaged in its cultivation. Since absentee landlordism had already been made illegal, what this meant in practice was that a landlord required by circumstances to emigrate from his native village had no choice but to sell his land to tenants. At the same time restrictions on the amount of land a landlord might rent out for tenant cultivation forced even resident landlords to sell all of their leased land in excess of the legal limit to its tenant-cultivators.

Regarding the protection of the remaining tenant-farmers, the 1952 Law both extended the rent controls of the Land Reform period and gave the tenant the right to renew his tenure by unilateral advice to the landlord. Landlords thus found their competence to recall leased farmland quite circumscribed even though its ownership might still nominally be in their own hands. As a consequence, rent returns on leased farmland often fell below the level of the taxes incumbent upon them, and farm-leasing swiftly became economically unattractive. The amount of land let out by new contracts to tenants declined enormously as a result. At the same time a significant proportion of land formerly leased to tenants came into the hands of the tenants themselves, while a smaller amount of this same category of land was returned to the direct management of the original landlords. In the wake of the implementation of the 1952 Law, consequently, a further decline in the amount of tenant-cultivated acreage took place, reducing the 520,000 hectares that survived the Land Reform to nearly half (270,000 hectares) by 1965.

To a certain degree the controls established by the 1952 Law were relaxed as a result of the drastic revision of the Farmland Law in 1970. Through this revision, rent controls were eliminated, certain forms of absentee ownership of leased farmland became legal, the ceilings on ownership of leased farmland were raised, and the restrictions governing the termination of contracts of tenure were considerably eased. But, in spite of these changes, the position of the tenant-cultivator remains much more secure than it was in the years preceding the Land Reform.

As a consequence of the land policies described above, owners of farmland have generally been persuaded to avoid leasing their land. Especially since the lifting of farmland price controls in 1950, landlords confronted with a choice between leasing their surplus farmland for rent, or selling it outright, have generally chosen the latter course. Moreover from about 1960 onward the market for farmland has been further expanded by the growing demand for non-agricultural uses (factory sites, residential plots, roads, etc.) produced by the rapid growth of the economy. Overlapping with the relatively high price level realized by agricultural produce in this same period, this extraneous demand for land has served to raise the value of farmland at a rate far in excess of the rise in prices characteristic of the economy as a whole. As will be seen from the figures

presented in Table IV, the average market value of paddy field (irrigated farmland) and dry field (non-irrigated farmland) showed an increase respectively of 74 and 63 per cent during the period 1960-70 even if calculated with the exclusion of the higher-priced land in the Tokyo-Osaka suburban zones. If farmland in the suburbs of these two urban concentrations are included in the calculation, price increases during the period in question show an increase of truly astonishing proportions: respectively 500 and 700 per cent (a rate far in excess of the approximately 100 per cent rise in agricultural produce prices that occurred during the same period).

Needless to say such a development has served to augment considerably the value of the landed property in the hands of farmer.<sup>3</sup> At the same time it has given the farmer an unprecedented stake in the stability of the land market, both as a hedge against inflation and as protection for his most valuable proprietary asset.

For the above reasons, not a few farmers have taken advantage of low-interest

<sup>3</sup> As has been mentioned, a rising demand for land for non-agricultural uses has been a major factor in boosting the property value of farmland. But, as is evidenced by the rise in price of farmland for which there is no extraneous demand, an equally important reason for the upward trend in the price of farmland is the relaxation and elimination of rent controls. The termination of controls has served, in other words, to actualize the rental value "latent" in leased farmland. For example, taking the figures on production costs of rice per 10-are of planted acreage which appear in the above-quoted *Kome seisanhi chōsa* [Survey of rice production costs], it will be seen in the following table that the proportion of land rents among total production costs has been rising sharply since 1968. Even if computed on the basis of nominal yen value, the land rents for 1970 show an increase of more than 600 per cent over the 1960 level. The rise in rent-related production costs has occurred against a background of declining labor costs (down from 56.3 per cent of the total production cost in 1960 to 45.0 per cent in 1970). In the case of farmland used for growing rice there is, of course, reason to suspect that particularly strong price supports have exerted an unusually high upward pressure on rents for, in addition to price supports, it is undeniable that such an "artificial" cause as the relaxation of rent controls has contributed to the upward trend in rent values. To the extent that this assumption holds, owners of farmland can anticipate a steady rise in the value of their property even without any additional investment on their part. And as long as this tendency remains strong, we may expect that holders of farmland will be induced to keep their resources invested in farmland property.

COMPOSITION OF RICE PRODUCTION COSTS

	1960	62	64	66	68	70
Yield per 10 are(kg)	448	450	446	455	497	487
Production costs per 10 are (yen)	A. 17,697	21,280	27,091	32,133	44,542	53,446
Labor costs per 10 are (yen)	B. 9,963	12,276	15,652	18,363	22,187	24,069
Land rent costs per 10 are (yen)	C. 1,266	1,371	1,717	1,925	6,460	7,624
B/A (%)	56.3	57.7	57.8	57.1	49.8	45.0
C/A (%)	7.2	6.5	6.3	6.2	14.5	14.3

Source: [1].

Note: The above figures cover only farmers selling one *pyō* (=sixty kilograms) of rice or more.

TABLE IV  
MOVEMENT OF FARMLAND SALE PRICES, WHOLESALE PRICES,  
AND FARM PRODUCE PRODUCER PRICES

		(1960=100)				
		1962	1964	1966	1968	1970
Farmland sale prices:						
Paddy field	A.	104	106	114	147	174
	B.	129	168	193	310	516
Dry field	A.	104	107	113	142	163
	B.	150	224	242	411	709
Wholesale price index		100	102	105	108	114
Farm produce producer price index		120	134	160	177	195

Source: [3].

Note: "A" figures are based on a survey of the Nippon-fudōsan-kenkyūsho [Japan Real Estate Institute] which did not cover most suburban farmland in the vicinity of Tokyo, Kanagawa, Osaka and other large cities. "B" figures are based on a survey of the Zenkoku-nōgyō-kaigisho [National Chamber of Agriculture], which included suburban farmland in these areas in its averages as well.

government loans to purchase farmland for their own purposes. At any rate, the majority of farmers are inclined to seek and hold farmland property in the anticipation of its value increasing. At the same time it must not be forgotten that the value of their investment in farmland is dependent on the maintenance of a maximum level of mobility in the form of ownership.

In more concrete terms, this means in effect that they require a land market that will permit them to sell or otherwise dispose of their land at any time they should find it necessary, and without having to assume any unnecessary burdens. At the same time it presupposes that in the interim they (1) be normally able to operate their holdings without having to let them out for rent; (2) have the means to continue cultivating their farmlands themselves even if direct farming should require them to take a loss in income in comparison to the income they would enjoy from leasing; and (3) in the extreme case be able to retain ownership of the land even if their temporary inability to cultivate it should reduce their income from the land in question to zero. Furthermore this kind of attitude assumes that (4) they will in all cases seek to avoid becoming absentee landlords, potentially subject to dispossession by a sudden change in the laws. More specifically, this latter requirement means that, even if they should find it necessary to seek employment in the non-agricultural sector and thus to absent themselves from the village, they must be in a position to leave a family member capable of cultivating the land behind in the village, in order that the title to their farmland property might be preserved.

In this last connection, it should be remarked that the existence of a large "residual" labor force in the countryside is as much the result of proprietary considerations as of the transfer-resistant character of old-age and female farm workers. It is, in other words, the desire to retain their ownership of farmland property which keeps many farmers in the villages, rather than a specific attach-

ment to farming as a way of life. And it is this same desire which doubtless underlies the popularity of *dekasegi* ("temporary migration") employment in the cities, an institution which is now believed to claim the energies of between 300,000 and 700,000 farmers each year. As *dekasegi* is currently practiced, it is common for farm-managers and other members of the family engaged in working the land to spend nearly half of the year away from their farms, while leaving their wives, children, and parents behind in the villages so as to protect the family's right to own farmland property. It is likely that a considerable number of farmers now engaging in *dekasegi* work would give up farming altogether, take their families to the city, and become absentee landlords should the restrictions on absentee landlordism now in force be eliminated.

Doubtless similar considerations as the above explain why the number of farming households has been declining at a much slower rate than the farming population as a whole. It has already been mentioned that the farming population was reduced by nearly 50 per cent in the quarter-century following the War. Yet during the same period the number of farming households has declined only 14.5 per cent (905,000) from the peak level of 6,247,000 reached in 1949. Naturally the average number of persons engaged in farming per farm household has declined. But the number of management units, as well as the number of farmland ownership units, has shown no such decline. It would seem that the desire to retain their possession of farmland property functions to prevent a rapid decrease of farm households.

And of course this tendency is even more conspicuous in the vicinity of large metropolitan centers such as Tokyo and Osaka, where the prospects for rising farmland prices and demand for non-agricultural uses are especially good. Looking, for example, at the figures presented in Table V, it will be noticed that the rate of decrease in the acreage of farmland during the period 1960-70 averaged 4.5 per cent in national total. The rate of decrease was comparatively higher in the so-called Tōkaidō Megalopolis area (which includes southern Kantō, Tōsan, Tōkai, and Kinki), characterized by close proximity to large urban centers, Tokyo, Yokohama, Nagoya, and Osaka. By contrast it tends to fall below the national average in the northeast (including Hokkaidō and northeast Honshū) and southwest (Kyūshū) areas far removed from the urban concentrations centering on Tokyo and Osaka. Looking the rates of decline in the number of farming households, however, it will be observed that the rates of decline tend to surpass the national average (11.8 per cent) in the latter two areas, while generally falling below the median level in the other, more urbanized parts of Japan. This contrast will be evident from a comparison of columns A and B of Table V. Particularly remarkable are the minus figures for the southern Kantō, Tōsan, and Tōkai areas, for in these areas the proximity of large urban centers insures numerous opportunities for finding commuting jobs in the non-agricultural sector. Thanks to the easy access to commuting jobs in these areas it is no difficult matter to carry on the management of a farm with only a portion of the family's labor—doubtless one reason why the rate of decline in the number of farming households in such areas has failed to keep pace with the rate of decrease in the



TABLE V  
REGIONAL VARIATIONS IN THE ACREAGE OF FARMLAND AND  
THE NUMBER OF FARMING HOUSEHOLDS, 1970

(1960=100)

	Acreage of Farmland A	Number of Farming Households B	A-B
Hokkaidō	104.2	71.0	33.2
Tōhoku	101.9	96.2	5.7
Hokuriku	93.0	90.6	2.4
Northern Kantō	96.4	90.9	5.5
Southern Kantō	80.9	84.9	-4.0
Tōsan	91.4	92.2	-0.8
Tōkai	86.4	87.1	-0.7
Kinki	88.5	87.1	1.4
Sanin	93.4	87.8	5.6
Sanyō	90.0	86.6	3.4
Shikoku	96.0	84.8	12.2
Northern Kyūshū	97.9	87.7	10.2
Southern Kyūshū	92.3	86.3	6.0
National total	95.5	88.2	7.3

Sources: Ministry of Agriculture and Forestry, *Kōchi menseki chōsa* [Survey of cultivated acreage]; *Sekai nōringyō sensasu* [World census of agriculture and forestry] for 1960 and 1970.

acreage of farmland. But it should be considered also that the extraordinarily steep rise in land values in the urban-proximate areas has made the incentive for property retention particularly strong for farmers owning farmland in these areas.

A related consideration in explaining the pattern of variation exhibited in Table V is the fact that the relationship between farm rents and farmland prices is relatively close in Hokkaidō; in other parts of Japan the norm is rather one of "low farm rents and high land prices." However the case it is hard to avoid the conclusion that the attractiveness of farmland property as a means of preserving property value has functioned to impede the rate of decline in the number of farming households.

As for the extreme disinclination of farmland owners to lease out their holdings under the present system, evidence will be found in the coexistence of two differentiated patterns of farm management, characterized by significantly different levels of productivity (the one being farms administered solely by women and men over sixty, the other being farms worked by a full-time male farmer of less than sixty years age), as well as in the fact that, within both groups, the scale of operation in terms of acreage is differentiated in accordance with the scale of farmland ownership. At the same time a similar pattern may be demonstrated by reference to the existence of variations in productivity in accordance both with different ranges of farm size (in terms of worked acreage) and with the full-time or part-time employment status of the farming enterprises themselves. Even for farms of the same size, the level of productivity per unit of invested capital,

per unit labor time, and per unit of cultivated acreage shows significant variation between farms managed on a full-time basis and those run on a part-time basis. This variation indeed seems to reflect a sustained trend. Competition between the two different types of farm, furthermore, is quite restricted, with the consequence that the schedule of rents associated with each of these two patterns of enterprise is distinct, and the pressure for equalization of rent levels still quite minimal.

A low level of productivity is particularly visible in part-time farming, the owners of which tend to derive more income from non-agricultural than agricultural work. Farms in this category numbered 50.7 per cent of the total number of farms in 1970, and the proportion is currently on the increase. Here again it seems likely that a major influence is the attractiveness of farmland as a long-term property asset.

In connection with point (3) of the incentives model developed above, a pattern worthy of attention is the conspicuous increase during the period 1960-70 in the amount of farmland left unplanted (Table VI). The depletion of farmland acreage

TABLE VI  
FLUCTUATIONS ON THE ACREAGE OF FARMLAND AND PLANTED ACREAGE

		1960	1962	1964	1966	1968	1970
Farmland acreage (1,000 ha)	A.	6,071	6,081	6,042	5,996	5,897	5,796
Planted acreage (1,000 ha)	B.	8,129	8,000	7,619	7,312	6,979	6,311
Cultivated farm- land index	B/A	1.339	1.316	1.261	1.219	1.183	1.089
Level of paddy field use for winter crops (%)		34.4	31.2	25.1	20.6	17.0	13.5

Source: [3].

Note: "Level of paddy field use for winter crops" shall mean the ratio of the paddy field acreage used for growing winter crops to the total paddy field acreage.

resulting from conversion to non-agricultural uses amounted to 4.5 per cent during the decade in question. During the same period, however, the amount of acreage under cultivation declined a much larger 22.4 per cent. Consequently the "cultivated farmland index" slipped from 1.339 to 1.089, while the amount of farmland producing two crops per annum declined to less than 10 per cent of the total farm acreage. In specific terms, this latter decline was largely the result of a falling off in the acreage of paddy-field used in the winter for growing a secondary crop of wheat, barley, or rapeseed, and in particular of the elimination of 300,000 hectares of paddy-field following the introduction of the *gentan* ("reduction of farmland acreage for rice") policy in 1970. But other considerations were involved as well.

Declines also were exhibited in the amount of dry-field acreage planted with sweet-potatoes, soy and other beans, and corn. Needless to say these latter declines occurred in the face of competition from imported produce. To meet the

extra demand for wheat, corn, soybeans, etc., created by the reduced domestic crop imports of these commodities have risen sharply.<sup>4</sup> But we are here concerned not so much with the reason for the decline in Japan's domestic production of wheat, etc., as with the fact that a significant amount of the land formerly used for growing these crops has been allowed to lie fallow since the crops were discontinued. Obviously there is something contradictory in land being allowed to lie idle just at the time when land rents and land prices continue to mount. But behind such a choice I think we may espy the deliberate policy of farmer-landlords seeking, in two different ways, to "give free rein to their farmland." In the first case, where the introduction of a substitute crop following the disappearance of above crops would naturally result, all other conditions being equal, in a relatively lower rent from the land, the farmer-landlord is rather motivated to leave the land idle than cultivate other crops or lease his land out to another party. Aside from the reason why they do not cultivate by themselves, the reason they do not prefer to lease their land could be derived from the possible troublesome involved in it. Tenancy contracts involvning the planting of wheat and other winter crops commonly grown on paddy-land in the off-season would be particularly annoying for both landlord and tenant farmer, in that they would have to be restrcited to a half-year or so in period, and would thus blatantly contradict the tenant-security priorities of the current farmland laws. If, in addition, the income gained by such leasing would actually amount to less than that previously generated by cultivating the land directly, it is not hard to see why so many farmer-landlords have chosen to let their land lie entirely idle instead.

The second case concerns instances in which the level of land prices (or of land rents calculated in proportion to them) is so excessive as to forbid the introduction of a substitute crop. Most examples of this latter case will be found in the vicinity of urban centers or in areas where the demand for land for non-agricultural uses is high. Naturally in such cases the conversion of farmland into industrial sites, etc., becomes problematic. But even should this conversion be halted, a fundamental source of the problem remains unsolved—i.e., the inclination of many farmers to hold their land in the expectation of a rise in its value in fuutre. But in both of the cases above described it will be seen that a fundamental issue is the persistent attitude of farmers to retain the ownership of their long-term property asset, and the strength of the incentive to continue farming which this attitude has given the Japanese farmer.

In sum, it would appear that the principal causes of the rigidity of Japan's agriculture at the present moment are: (1) the high and growing proportion within the rural labor force of female and old-age workers, and (2) the strong attitude of farmers to retain the ownership of their farmland as a long-term property asset under present Farmland Law. At the same time it should be stressed that, at least in some respects, the former factor is a function of the

<sup>4</sup> During the period 1960-70, Japan's self-sufficiency in wheat, barley, and naked barley declined respectively from 39 to 9 and 107 to 34 per cent. By contrast imports of wheat during this same period increased from 2.687 million tons to 4.685 million tons [3, pp. 11, 69].

latter, and not an independent variable in its own right. More than any other single circumstance, it is the property preserving issue which casts the darkest shadow over the prospects for adjusting Japanese agriculture.

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