

Over-occupation and Over-investment in a Low Income Area in Japan

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1. Introduction

The economic position of Kagoshima Prefecture within Japan is illustrated on Figure 1.⁽¹⁾ The level of income per head is the lowest in Japan, and not only is agriculture the dominant industry (farm population is 73 % of total population) but its relative position in the prefectural economy also leads the nation. It is in such an agricultural prefecture, that we can most clearly look at the particular characteristics of the agriculture in Japan. This extremely backward prefecture is sometimes said to be still in the Middle Ages,⁽²⁾ for it is more backward than the latter-day feudal system which had already taken a certain aspect of the modern capitalist society. I would say that its structure is that of a Semi-middle Ages society, because it has also elements of a monopolistic capitalist economy. I think that this is the true nature of the rural society in Kagoshima Prefecture—that is to be bound by those two conditions. The former condition is the problem of Rural History or Economic Sociology; we deal mainly with the latter.

We start with a survey of appropriate rural communities to determine the real problems faced by peasants in agricultural production, and through the structure of productivity we will examine the mechanism of the monopoly which is a limiting factor.

1. This graph was originally made by Dr. S. Hosono at the National Research Institute of Agriculture, Ministry of Agriculture and Forestry, Japan.

2. This view was especially suggested by Professor B. Nishiyama at Kagoshima University.

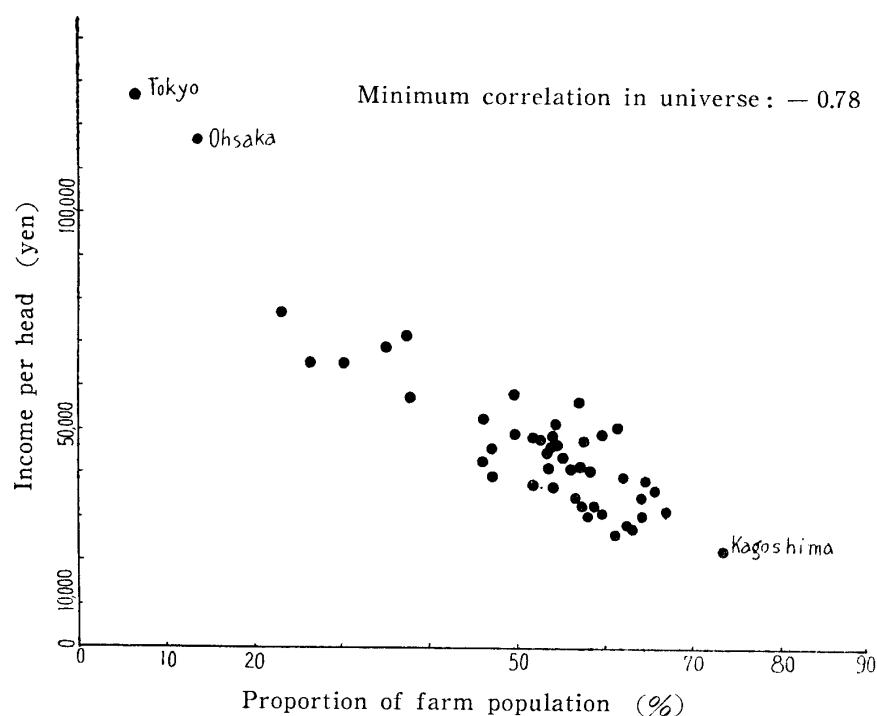


Fig. 1. Relationship between proportion of farm population and income per head

2. Object and procedure for our survey

After three *buraku*⁽³⁾ were selected as the object of our survey, that is, Kami-Arase, Shimo-Arase and Kitabaru, in Yamasaki Town, Satsuma County, Kagoshima Prefecture, we sampled thirty peasant farms in them by a stratified proportional random sampling method.

To begin with, we tested the differences among these *buraku* with respect to cash revenue, cultivated land and other productive factors by using the individual cards for the fundamental census of agriculture, made by the prefectural authorities. Then two *buraku* were united, Kami-Arase and Shimo-Arase, since a significant difference on the probability of 10%⁽⁴⁾ could not be found between them. But since a significant difference was present in Kitabaru, we stratified Kitabaru separately. The thirty samples were allocated eighteen to the united *buraku* and twelve to Kitabaru, in accordance with Neyman's formula, for each size and variances of both land and revenue were different between each stratum. Each coefficient of variation of their estimates

3. *Buraku* is a community within a village in Japan. It is a generative social form, but a village is an administrative division.

4. 5% is usually used as a significance level for natural sciences, but, I think, 10% level or even 20% may be allowed and perhaps more suitable for social sciences.

is 12 % and 13 %. Each stratum was classified to one *tan*⁽⁵⁾ class interval owing to the control of agricultural land and, in proportion to its frequency distribution, farms were sampled at random. The result of sampling is somewhat overestimated; the former became 4 % over and the latter 32 %, because the latter big percentage perhaps came from the change on the procedure of the census survey and the lag of our surveyed period during about one and a half years after it. Our procedure was owed to the enquête: the census to the report.

3. Peasant problems

Problems with which peasants were confronted at the time of the survey were asked them. The thirty replies are listed separately in Table 1.

Table 1. Problems of Peasants

1. Unable to work due to lung disease, but cannot be hospitalized owing to no rural health insurance system.
2. Need a livable house, because of only presently occupying a miserably narrow reconstructed shed.
3. Need more agricultural land, for present farm is too small.
4. Need labour, especially male hands.
5. Need money.
6. Need a little more land to raise rape. It cannot be grown as a second crop since wheat has been already set on the field.
7. Need cash and labour. Wish to plant tea for prevention of typhoon disasters but have fallen into a large debt on account of disasters, a sick person and brothers' expenses. Accordingly now work at side jobs to get cash.
8. Want to expand the main house to raise silk worms, and want land for tea production.
9. Need land for tea production.
10. Need labour.
11. 1) Need too much labour since each parcel of cultivated land is in the distance. 2) Want to raise the return of a paddy field. 3) Want to plant fruit-trees.
12. 1) Need more two-crop paddy field near a house. 2) Want to rear the silk worm and to plant sweet potato.
13. 1) Need cash. 2) Want to plant tea.
14. 1) Need labour. 2) Unable to plant orange on account of capital shortage.
15. 1) Need labour. 2) Want to plant about one-second *tan* of tea garden.
16. 1) Need labour. 2) Want to mechanize farm operation.
17. 1) Need labour. 2) Want to plant tobacco and peach trees.
18. Unable to plant fruit since a large part of family labour is employed to tobacco production.
19. Need land.
20. 1) Need repair a living house and a barn, and construct a workshop. 2) Want to rear the silk worm.

5. *Tan* is equal to 991.7 square meters, that is, about one fourth acre.

21. Want to equip some farm implement, especially a threshing machine, in order to save labour.
22. 1) Need labour and cash. 2) Want to drain out of a wet paddy field in order to plant wheat and rape as the second crops.
23. 1) Need occupy sons except one of them to non-agriculture. 2) Need more two-crop paddy field. 3) Want more available land in order to plant tobacco.
24. Need labour.
25. Need labour to plant tea.
26. 1) Want to breed one more cow. 2) Need land to plant a scallion.
27. Need cash to buy an automatic threshing machine and to improve land. Want to plant more tobacco, but there is no room to do so.
28. 1) Want to purchase new farm implements in order to save labour. 2) Must reduce tobacco production on account of requiring too much labour. 3) Want to raise return from land owing to land improvement.
29. 1) Need employ temporary workers on account of labour shortage. 2) Want to keep a hundred of fowls.
30. 1) Want to plant fruit-trees, especially mono-culturing grapes or oranges. 2) There are various restrictions by old man for introducing new agricultural methods.

These many problems on Table 1 were classified as follows.

Table 2.

The factor of shortage	Percentage of farms being short	Confidence interval
Labour	47 %	$61 \% \geq m \geq 33 \%$
Capital	40 %	$55 \% \geq m \geq 27 \%$
Land	23 %	$38 \% \geq m \geq 13 \%$

Here, the shortage of labour is seen as a predominant problem despite the popular view that agriculture in Kagoshima Prefecture, the lowest income area in Japan, keeps so many people on tiny plots that it has fallen into a vicious circle of poverty. A similar result was obtained by the fundamental census of agriculture which was made in 1953 by Kagoshima Prefectural Authorities, but in that case the lack of labour was only 13 %, so that it had been overlooked. Provided that these apparently exceptional farms are examined, a better understanding of overpopulation may be obtained.

If peasants want labour, labour's marginal productivity must be higher than the equilibrium level and this would also apply to the income of labour as a factor of production. At the same time, it may be generally inferred that capital runs relatively short, for, if enough capital existed, the lack of labour would be immediately complemented by hired labour, or would sooner or later raise the substitution between those productive factors from labour to real capital, so that in any case it may relatively disappear. Thus the lack of labour becomes

simultaneously one of real capital. As a matter of fact, the shortage of real capital is shown to be the second important problem by the classified results. On the other hand, land may be in excess as compared with labour and real capital. In other words, we might suppose that marginal productivities of both labour and real capital are large and that of land small.

However, subjective factors are more or less contained in the answers by peasant farmers. Then we designed a test to measure the marginal productivities of the three productive factors, in order to get an objective view.

We assume a simple linear production function, as the first approximation, in which coefficients of regression for each independent variable show respectively those marginal productivities.

4. Rules on our method of measurement

The dependent variable, which is gross output, is given in terms of value, that is, the sum of all products multiplying each quantity of agricultural products during one year by those respective unit-prices. As a general rule, the unit-prices are farm prices at time of sale and average estimates for one year were used for missing values. The marketing period is one year from October 1953 to September '54.

Components of productivity are labour, real capital and land. Since the other managerial ability present intangible possibility, we can not directly measure it, so that now we omit this factor. Labour was calculated in terms of man-days used for farm operation and the difference in efficiency between a male and a female was disregarded, because female labour may be probably just as efficient as that of male or may be even more so in those areas, where tobacco production or sericulture prevails, so that it is contrary to fact that so much difference is imputed between them. A man-day is regarded as ten hours, for it is convenient for calculation to do so and since this is not a comparative study between industries and merely considers the relative variation for employed labour among farms, this definition is not a problem.

Real capital, which is the second variable, is divided into two main classes. One of them is circulating capital goods, which includes manures, feeds, seeds, agricultural medicines and sericultural materials; the first three of which is partially self-supplied. In order to evaluate them, actual farm prices were used for self-supplied feeds and seeds, and constituent-prices for self-supplied manure, since it has no market price.

The other is fixed capital (or overhead). It includes live-stocks,

farm buildings and agricultural machinery and implements. A main living house was evaluated in such a way as was multiplied the rate of the period used for sericulture to one year by its current price which had been gotten from data of the town office. First, we took depreciation of fixed capital into consideration, regarding expediently the remaining period as ten years on an average, although this is somewhat bold. Afterwards, we adopted the stock concept in order to avoid depreciation difficulties and to conform to the characteristics of the original production function.

The third variable is the acreage of agricultural land, which includes grass land, pasture, waste land, a waterway, an irrigation pond and the others in addition to cultivated land.

5. Statistical analysis and stratification

Under the preceding method, a linear regression equation was derived as follows.

$$\begin{aligned} \bar{R}^2 &= 0.9782 && \text{Adjusted degree of determination} \\ Y &= -10.7240 - 0.1355 X_1 + 0.7435 X_2 \\ &\quad + 22.7470 X_3 \pm 23.0449 \dots\dots(1) \\ Y &= \text{Gross output.} && \text{Thousand yen unit} \\ -10.7240 &= \text{Constant} \\ X_1 &= \text{Labour} && \text{Man-day unit} \\ X_2 &= \text{Capital} && \text{Thousand yen unit} \\ X_3 &= \text{Agricultural land.} && \text{Tan unit} \\ \pm 23.0449 &= \text{Error term} \end{aligned}$$

Standard errors of regression coefficients			<i>t</i> value
0.038	on	- 0.1355	3.07
0.131	on	+ 0.7435	5.67
2.922	on	+ 22.7470	7.78
Degree of freedom = 26			

Every coefficient of regression is significant from zero on 1 % level; the net regression coefficient of labour is significantly minus and the ones of capital and land are plus. Although the regression coefficient of capital is less than unity, 0.74, the difference between this and unity is non-significant on 5 % level. Accordingly, if one thousand yen of capital are invested, an equal output will be earned; it may be regarded that the marginal productivity of real capital keeps the equilibrium. It is, however, noteworthy that the marginal productivity of labour is

negative. Does this fact negate one of our hypotheses that marginal productivity of labour is high because of labour shortage? If so, we may come back to the popular view. Why does such a gap exist between the peasants' problem and the result of measurement?

Before answering this question, we need to examine our procedure of measurement. As mentioned above, the remaining period of fixed capital was arbitrarily calculated as ten years, and accordingly the amount of depreciation is equal to one-tenth of total value of fixed capital, therefore the variance of capital variable, which contains both fixed capital and variable one, is affected by this assumption. Such use of a depreciation is based on the managerial point of view. Production function, however, means a technical relation and it is necessary that physical quantities are used for each variable insofar as possible. Accordingly for the calculation of fixed capital we altered from the amount of depreciation to one of stock evaluated by the current price as substitutes for physical quantities.

Thus a better equation was obtained as follows.

$$\begin{aligned} \bar{R}^2 &= 0.3685 && \text{Adjusted degree of determination.} \\ Y &= -32.3058 + 0.0165 X_1 + 0.3537 X_2 \\ &&& + 15.9634 X_3 \pm 117.4118 \quad \dots\dots\dots(2) \end{aligned}$$

Each variable is as before.

Standard error of each regression coefficient.			<i>t</i> value
0.1457	on	0.0165	0.1135
0.3289	on	0.3537	1.0755
10.3620	on	15.9634	1.5405
Degree of freedom = 26			

Regression coefficients are all positive and the absolute values of them less than in the case of equation (1). The probability of *t* is at least 25 % for labour and capital, and 20 % for land. Consequently we can not say that coefficients of labour and capital are not zero. Probability of land is relatively smaller than that of the other two but the difference from zero is almost nonsignificant.

The remarkable differences between equation (1) and (2) are firstly that the difference from zero on capital's regression coefficient became significant to nonsignificant and secondly that the adjusted degree of determination in equation (2) is smaller than equation (1).

Labour's coefficient altered from negative to positive, but over-occupied situation is unchanged, on account of being nonsignificant from zero. But capital is changed from balanced investment to an excessive one.

It is, however, much more important that the adjusted degree of determination has now become considerably smaller than before. The reason why it has changed may depend upon whether the additional output accountable to variable capital has been generally offset by the effect of ten-fold increase in fixed capital, or the statistical population of farms which is assumed to be homogeneous is actually not so, that is, such a larger part of non-determination is never raised from disturbing factors besides three factors to production, but from heterogeneity of fixed capital themselves, because in the case of the small influence of fixed capital the degree of non-determination was very small. The former reason will be examined later: we shall now inquire only into the latter.

When we examine the relation between fixed capital and output in Fig. 2, the degree of determination as a whole is 0.78, but looking steadily at the scatter diagram, a marked dispersion can be noticed from about one hundred and twenty thousand yen of fixed capital input to two hundred and seventy thousand yen. Although the quantities of fixed capital are equal, outputs can be separated into two groups each having

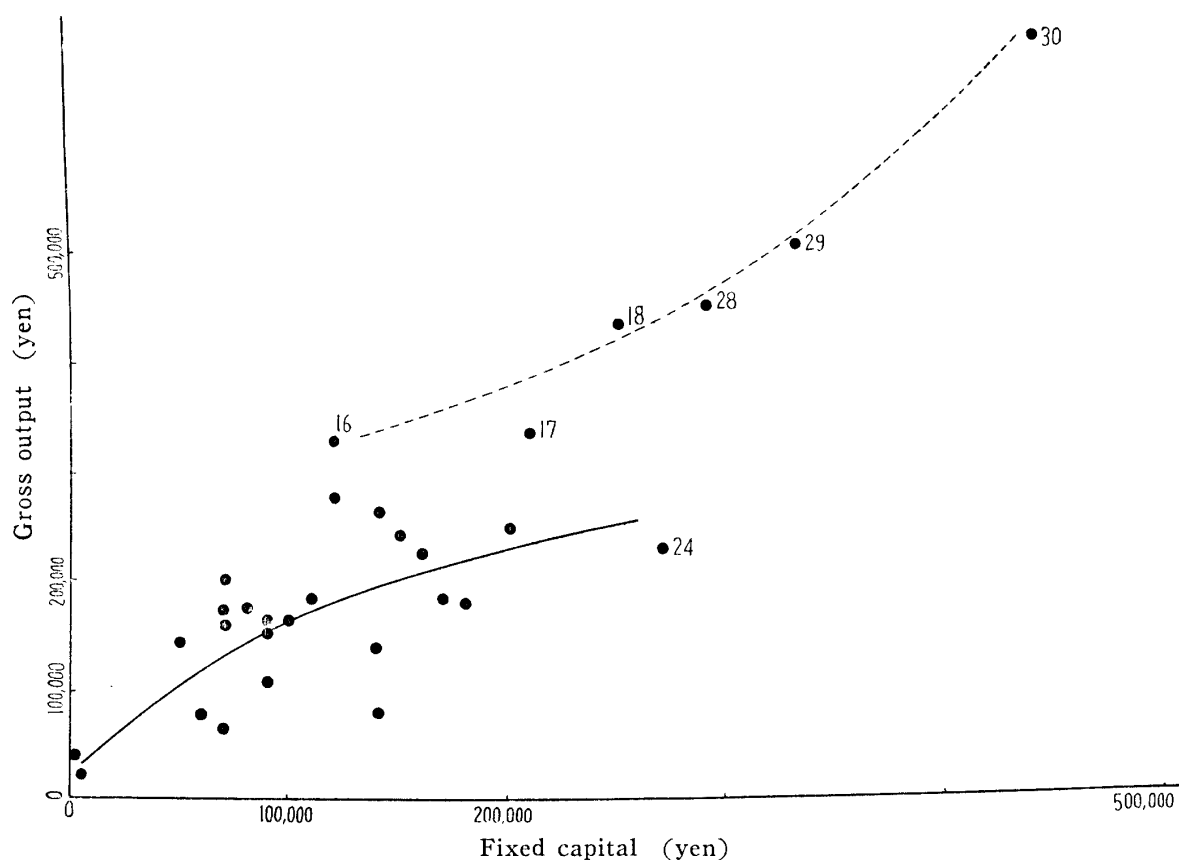


Fig. 2. Relationship between fixed capital and gross output

a certain trend. A trend line through one group shows a declining rate growth curve unless the dot of the seventeenth farm is considered, but this farm has a different characteristics from the lower group as will be later explained. The higher group is set out discontinuously above one hundred and twenty thousand yen.

Now inquiring into each group, the upper group puts to use, on the average, 18.2 man-days per *tan* on paddy fields and the lower one 27.5 man-days, the labour productiveness of which are clearly different.

The former farms all have an oilengine or an electric motor, which raises discontinuously and acceleratively the total output in relation to fixed capital hence its marginal productivity, too, while the latter has none except only one farm. The main revenue of this farm was obtained from its rice-cleaning mill, so that the output from agriculture proper has become even lower because of the subsidiary business. Such exceptional characteristics are common to the greater part of lower farms and even the rest will probably acquire exceptional features in

time. On fifteen farms out of twenty five, one or more member of the family is employed in other than farming: in the upper group there is no employment outside of the farm.

The relation between gross output and labour input in Fig. 3, shows the same two tendencies as in the case of output-fixed capital relationship. Especially the lower homogeneous farms illustrate an interesting trend: when labour is increased, output rises at the same or perhaps with accelerated velocity in the first stage, and after about four hundred man-days

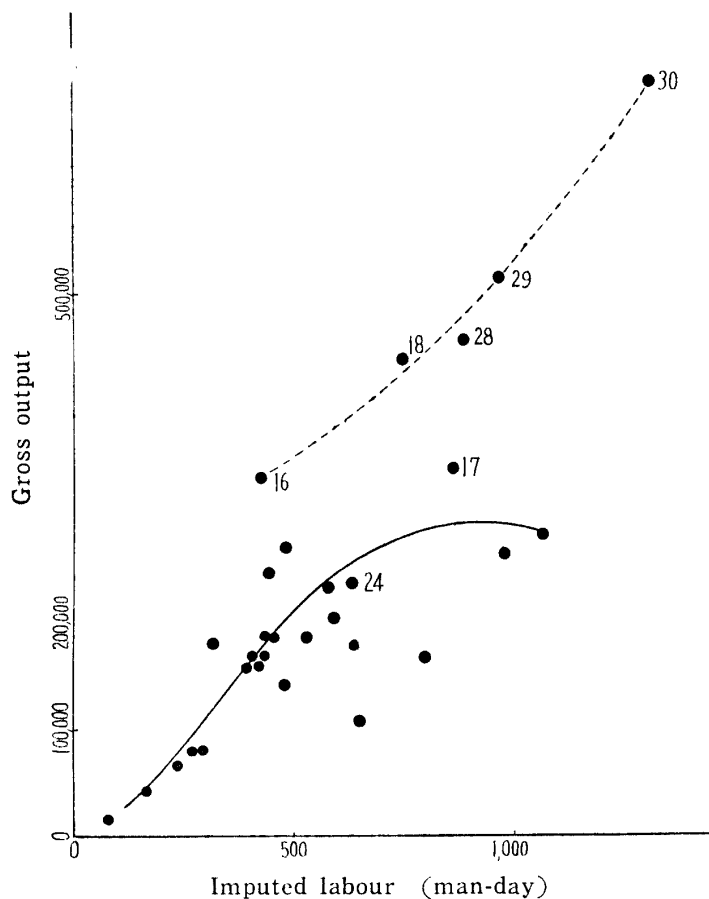


Fig. 3. Relationship between imputed labour and gross output

input, rising rate begins to diminish gradually, at last running parallel with the axis of abscissa, before it seems even to turn slightly downwards. On the other hand, soon after the lower group has reached its maximum point of the marginal value productivity of labour, the upper one substitutes mechanical power for human energy so that marginal productivity rises at an accelerated rate. This upward curve ends in the process of rising, but it will in time show diminishing returns, for even such a highly efficient group of farms can not escape diminishing return under the conditions of new techniques and larger capital. The range at which we are now looking stands only at the foot of a second mountain. New growth curve will develop one after another as new techniques and larger capital goods become adopted, and such a shift will shape the curved surface of productivity in the long run. The higher group farm with about four hundred man-days input works eleven *tan* of agricultural land. It possesses and operates a prime mover in cooperation with two other farms which were not sampled, because it is not able to utilize the mover fully, and is thereby raising its economic efficiency. That farm, which employs seven hundreds and forty five man-days of labour and seventeen *tan* of land, is utilizing one motor in fully by itself. As noted above, all farms in this upper group completely specialize in agriculture, while only 10 farms out of 25 in the lower group do.

We have made clear that the group, whose value productivity of fixed capital is relatively higher, also has a higher productivity for labour. From this analysis of facts, we can immediately infer that each group is homogeneous as far as fixed capital and labour are concerned, that is, the technical system of productivity is more homogeneous within each separated group than the group of all farms.

We now go into a more significant analysis—that is, of the lower group. It is more significant because the sample size of the other is too small, and if the main limiting factor for the lower group is found output, we can perhaps infer the anti-factor for the other group by the so-called difference method, stated in Mr. J. S. Mill's Second Canon.

In this case, the sample coefficient of multiple correlation of gross output in relation to labour, capital and land is 0.904, the adjusted degree of determination 0.791, which is far larger than 0.368 where the groups were not separated. Thus it is proved that our separation by fixed capital was not meaningless:

$$R^2 = 0.791$$

$$Y = 4.809 + 0.051 X_1 + 0.199 X_2 + 12.212 X_3 \pm 35.020 \dots\dots(3)$$

Standard errors of regression coefficients.			<i>t</i> value
0.047	on	0.051	1.074
0.305	on	0.199	1.118
10.920	on	12.212	0.654
Degree of freedom = 21			
<i>t</i> value on the probability of 25 % = 1.183			

Thus every coefficient is nonsignificant even at 25 % level. Here again over-investment of capital as well as over-occupation of labour was clearly ascertained within the lower group. The latter situation is well recognized, but the former is not in conformity to the prevailing view. Likewise, we look at an incomprehensible excess use of land.

6. Economic and economic-sociological implication

Here, we bring forward three problems. First, for labour, why is there this gap between the results measured by us and the labour shortage felt by peasants? Second for capital, what is the reason why the results are contrary to the prevailing view? Third, for land, if labour and capital are in excessive use, land should be in scarce supply; then why is land productivity so low?

These three problems are raised from a study of three specified *buraku*. But if we exclude the many sub-causes within and between these *buraku* and seek more deeply after the main cause as stated by Professor Oscar Lange, the limiting cause will be found in the fact that this is a low-income area and in recognizing this even the particular characteristics of Japanese agriculture may be solved, because, as Alfred Marshall said, it is the task of science to pursue problems at their margin and also there is most clearly the truth of science.

As already shown, the rate of fixed capital to fixed plus variable capital is 57 %. Fixed capital is divided into four main classes, that is, farm buildings, livestock, farm implements and sericultural equipments. The functions of these are all similar under private operation, but their roles in a social economy can be different. The fixed capital in question here are farm buildings and sericultural equipments. Drying rooms for yellow leaf-tobacco are a luxurious sight in contrast with the miserable farm houses, while *Okaike-sama*, Mr. Silkworm, are reared during more than a quarter year period in the peasants' own best room, where latest-type sericultural equipment occupy almost all the room. We know that these equipments have saved labour. For example, *Kaiten-mabushi*, a turning trellis for sericulture, can save 25 % to 30 % of labour and about one half space in a silkworm-rearing room and in

addition to these benefits it has raised the turnover rate, and reduced a pierced cocoon.

These have not, however, been created by peasants themselves, but have been almost entirely devised by processing industries, which are buyers of farm products, who have promoted their use on farms, e.g., by measures like subsidiary financing system for drying rooms by Japan Monopoly Cooperation, or like the supplying on credit of sericultural equipment by Katakura Silk Manufacturing Company.

However, these positive results have not been based on processors' own object. It was the need for quality control by processors which appeared to raise the peasants' labour productivity. At the same time, there have been disadvantages to the peasant: processors have supplied peasants with sericultural implements, cocoon-eggs, artificial fertilizer, briquette and so on in advance at a high rate of interest: the quantity of production purchased is entirely in the hands of processors and unless peasants buy those materials, coloured papers are put on cocoons in order to lower their offers. The Tobacco Monopoly directs the excellent methods of cultivation for tobacco leaf, compelling the use of given quantities of manures, or big drying rooms with a specified number of firewood in order to dry those leaves in addition to specifying use of water, weeding operations and the covering of the seed bed.

Under these methods of rearing or cultivating, which certainly bespeak a high degree of technic, peasants' decision to attain managerial equilibrium with respect to factors of production is not realizable, for the processor takes no account of the peasants' production function. As a result, peasants carry too large a pack on their small backs; this is over-investment in terms of economics. Thus the marginal productivity of capital indicates a nonsignificant difference from zero.

This over-investment is simultaneously accompanied by a surprising large quantity of human labour, too, and at that the excess use of the latter is probably almost as large as the former, for we can not see a significant difference between the two marginal productivities even on a considerably rough probability, since t value of difference between them is 0.483 and the degree of freedom 21. Here it is important that the degree of over-occupation is not excessive in comparison with over-investment in particular user capital. It means that the processors compel the use of the latter, hence the latter is accompanied by the former. The popular view, that the former comes from land shortage, is further denied by our statistical results, for marginal productivity of land is also nonsignificant from zero, i.e., at least we can not say that land is short.⁽⁶⁾

However, such technical analysis illustrates only the relationship of phenomena, and does not and can not give a logical explanation. We should look into the demand side, i.e., pricing.

Processors control simultaneously three markets having monopolistic characteristics in every one; first monopolistic markets as sellers of processors' final products, second monopsonistic ones as buyers of raw materials or farm products, thirdly monopolistic ones as sellers of user capital to peasants. It is with the latter two that we are directly concerned.

Now if the market for farm products are monopsonistic, monopsonists may purchase that volume, as determined by the intersection of the derived marginal revenue curve and marginal cost curve, or at the least at a point near the average cost point, since there are no competitors to force the farm price higher than it, e.g., in the case of tobacco leaf. Their possible maximum profits are then the volume times the difference between that intersection and average cost. Prices of farm products may become equal to average cost in equilibrium. Total return to peasants is a product of average cost and the volume of sales minus buying cost. We cannot verify this theoretical scheme⁷⁾

6. Land as productive factor is not a direct concern of ours. But our result do not permit us to ignore it. Although the significance of agricultural land in Japan in its institutional aspects has declined after the land reform after World War II, the importance of its economic function has vastly increased because of loss of land after the second war. Consequently the marginal productivity of land had to become higher after the war. None the less it is low on the basis of our results, i.e., land is in excess supply. This is an utterly new revelation. It is, however, important that land is in excess only under the existing conditions, i.e., although the scale of farm land is merely about 2.5 acres per farm, such a strip of land is still divided into eighteen parcels with one-sixteenth acre on an average. The distance per parcel from peasants' house is 1.07 kilometres for fields and 1.43 kilometres for paddy fields on an average, and at that we can see sometimes paddy fields whose water supply comes from rain or ground water.

Table 3. Dispersion and shrinkage of parcels

	Paddy field	Field
Mean distance from farm houses to each parcel	1.43 Km	1.07 Km
The number of parcels per farm	9.4	8.7
Acreage per parcel	0.4 <i>tan</i>	

So long as these conditions don't change, the increase of these parcels may rapidly reduce marginal return, so that the over-employment of land results.

On the other hand, the rate of total planting acreage to land is relatively high, about 2, but even with about 5 acres of crops land may be in short supply, if labour saving equipments are thoroughly provided. However, over-invested capital goods are simultaneously those that do not affect labour supply, hence peasants are in want of labour saving equipments and labour for farm management as a whole. Accordingly even only 5 acres is already excessive in relation to labour and those capital goods.

7. cf. J. Robinson, *The economics of imperfect competition* (1930) pp. 211-228. W. H. Nicholls, *Imperfect competition within agricultural industries* (1949), *loc. cit.*, pp. 58.

from the data, for unfortunately monopsonist processors never open their books to the public for fear of a labour offensive and in order to make possible tax evasion. Accordingly, this model has merely a hypothetical significance. Thus we must approach this by indirect means.

Two assumptions are to be noticed in the above model. First although the market itself is imperfectly competitive, the behavior of peasants, who are producers and suppliers, are potentially purely competitive, for if buyers, who face them, were not monopsonists, accordingly competitive ones, the market of pure competition would come into existence. Second, it is assumed that peasants are suppliers of only one kind of farm product, so that cross elasticities of supply or production to prices or incomes of other farm products are zero.

Neither of these assumptions are valid with respect to our survey. To begin with farm products, it is shown in Table 4 that peasants raise many crops, and that even in one farm returns to labour varies greatly. If the returns to family labour were in equilibrium, (i.e., peasants attain free competitive behavior till they reach equilibrium) the income per man-day would be the same for every crop. But here there exists clear inequalities. Hence we may infer that the cross elasticity of production to income is not infinite. However, we can not verify that it is zero, and merely can suppose that there are various cross elasticities of different degrees; in other words, there are various farm products, which pour into markets of different degrees of monopsony or oligopsony. In the case of such varied income per man-day, if peasants had free choice, they would and could choose to raise that product of relatively higher income per man-day.

This brings us back to the first assumption that peasant production is competitive. As a conclusion it may be given that peasants do not

Table 4. Income of peasants' family labour per man-day from the record of one farm.

Crops	Income per man-day	Proportion of each crop to rice
Rice	198 yen	100 %
Upland rice	140	71
Sweet potato	125	63
Rape	108	54
Sericulture	71	36
Wheat	50	25
Tobacco	38	19

Comment: This is the result of a farm record at surveyed *buraku* 1954.

live nor have ever lived in a world of free competition. They have been confronted by monopsonists not after entering free competitive capitalist society, but that they have always been victimized by monopsonists even back to the Middle Ages.

Peasants in Kagoshima Prefecture had been governed under the Shimazu clan in the feudal age. The land system of the clan, the *Gōshi* (a country samurai) system, was kept intact through and after the Meiji Restoration. This system was nominally changed by the land-reform after the second world war, but we can still see vestiges of it in existence, represented in the form of rent paid in kind or even in labour. For example, many peasants, who operate very small farms, lease paddy fields during the winter period to raise tobacco. Since tobacco depletes soil fertility at a high rate, they pay five bushels of wheat to ten bushels per one *tan* (one-fourth acre) as the land rent even though it is the second crop off the land. However, in addition to this they are required to prepare the soil for the owner's rice crop. In many cases, land owners are former *Gōshi*. This practice is customary in these provinces despite the fact that it is a violation of the Agricultural Land Law. Of course these rents are far in excess of controlled rent. Land owners, country samurais, compel tenants to pay those rent in requital for favours. The latter act submissively under samurais' orders, offering rent and don't lay claim to the rights guaranteed in the Agricultural Land Law: they don't know modern individualism and lack even the spirit of latter-day feudalism, where peasants had sometimes organized for an agrarian disturbance against feudal lords in order to reduce land rent and recover their labour income. However, our peasants have not trusted their neighbours for action in union, for they have been merely tools without ego for landlords, so that if they were stroked by masters and were deceived with fair words, they followed blindly without taking account of their own fellows' interest. For instance, tobacco tillers' or sericulturists' guilds are skillfully organized to all outward appearance. But the leaders of those guilds are taken in by monopsonists and they become in effect promoters of the monopsonists' quality control program or change to a guild president, who upholds monopsony prices. Such a situation is not present even in the latter-day feudal community let alone in a community established by modern individualism. It exists only in those who have not freed themselves of the consciousness of serfs of the Middle Ages who do not know yet what individualism is. Accordingly our peasants cannot organize a guild or a union for themselves. They have less power to attain better living conditions than the labour union in the stage of

monopolistic industries, hence they cannot secure even an economic wage level under a monopsonist economy.

On the other hand, they are obliged to pay a fixed land rent at a considerably higher rate and apparently have no will to have this reduced to the control level.

Under such a situation, the farm prices under monopoly monopsony markets cannot be at the theoretical level, nor even in the neighbourhood of them with a certain range of error. Hence the receipts of peasants' family labour is not calculated or conceived as in terms of return to the cost of production but as a surplus over user cost, fixed rent and interest, like the land rent in classical economics which was defined as the surplus value above wage and interest or profit under a given price by Adam Smith, Ricardo and so on. Thus the income level of family labour falls to the physiological margin lower than the economic floor, or may be even lower than it, for the contraction of a lung-disease and the death rate of infants are within the highest group among all prefectures, so that even the reproduction of labour may be difficult.

Hence, over-occupation in low-income areas within Japan has not come from the narrowness of the market or lack of purchasing power as in the so-called typical underdeveloped countries, but from both the monopsony monopoly market and the ancient land rent system.

There had been many job opportunities outside the community, for example, spinning in the Kinki provinces or coalmining in north Kyūshū as an outlet from low returns. However, these labour have been obliged to return to the pool of rural communities because the degree of monopoly in general in the Japanese capitalist economy has advanced, that is, an organic composition of capital has been raised in the fundamental industries reducing employment opportunities. This reflux of labour to rural communities might have shifted the labour supply schedule in them downwards, hence this might have lowered the wage level of hired labour as well as the income per head of family farm labour, hence the over-occupation in agriculture in comparison with non-agriculture might have advanced, but the one of family labour might be partially canceled, because a crowd of involuntary unemployment would go back to farm households, hence the over-occupation of them became more and more, while peasants would simultaneously lower the demand schedule of hired labour, hence it would lower the wage level, hence the over-occupation of farm family labour as compared with this would be reduced. Accordingly it has been raised from monopsonists or oligopsonists direct to peasants through pricing and the ancient land system rather than the so-called monopolist economy in general.

7. Conclusion

We started with an examination of farm productivity in order to determine the factors responsible for over-occupation and over-investment in agriculture in a low-income area within Japan. We have come up with two hypotheses, pertaining to the influence of a particular monopsony monopoly economy and the ancient land regime, which mutually interact.

At the start, we intended to limit our analysis only to the pure economic aspects on our object, after confirming the real situation, but we have been obliged to examine the agrarian society and its fundamental land regime. This has resulted not from *le bon sens* lost, but from confrontation by reality. If our object were a homogeneous modern society, the Walrasian system or the theory of marginal productivity might be suitable for analysis and be in fact operative. But there are several heterogeneous economic societies intermixed in an underdeveloped country rapidly grown. We agree with Professor R. Nurkse that the modern economic theory has limited application in such a society. A theory which can encompass the heterogeneous society is required here. Nonetheless, a special case exists only because the general exists, and we cannot forget the debt we owe general theories.