

PB-223 788

**ECONOMIC EFFECTS OF LAND REFORMS IN
TAIWAN, JAPAN, AND MAINLAND CHINA: A
COMPARATIVE STUDY**

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Prepared for:

Agency for International Development

November 1972

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BIBLIOGRAPHIC DATA SHEET		1. Report No. FEA-301.35-K16	2.	3. Recipient's Accession No. PB-223788
4. Title and Subtitle "Economic Effects of Land Reforms in Taiwan, Japan and Mainland China: A Comparative Study"				5. Report Date November 1972
7. Author(s) Kang Chao				6.
9. Performing Organization Name and Address The Land Tenure Center 310 King Hall University of Wisconsin Madison, Wisconsin 53706				8. Performing Organization Rept. No.
12. Sponsoring Organization Name and Address				10. Project/Task/Work Unit No. Proj. 931-11-120-111
				11. Contract/Grant No.
15. Supplementary Notes				13. Type of Report & Period Covered Research paper
				14.
16. Abstracts - An attempt is made to compare the economic effects of land reforms in three Asian countries -- Taiwan, Japan, and Mainland China. The effects of land reform on input utilization (shifting of the production function due to scale problems and changes in incentives) is analyzed. Effects on the quantities of inputs devoted to farm production are analyzed. Effects on consumption of peasants and the economy in total is also analyzed. It is concluded that there is no clearcut indication that land reform is always capable of raising the production function of agriculture. As a matter of fact, all three countries studied showed a decline in productivity of aggregate input immediately after the land tenure changes. Favorable or unfavorable impact depends on the general level of income and the stage of growth in the country in which the land reform is conducted. For backward countries, land reforms may actually retard the commercialization of farm products unless a powerful extraction mechanism is introduced to replace landlordism. However, for a fairly well industrialized country, land reform will lead to home market expansion of industrial goods.				
17. Key Words and Document Analysis. 17a. Descriptors				
17b. Identifiers/Open-Ended Terms				
17c. COSATI Field/Group 301				
18. Availability Statement			19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 37
			20. Security Class (This Page) UNCLASSIFIED	22. Price \$4.00

November 1972

LTC No. 80

THE LAND TENURE CENTER
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ECONOMIC EFFECTS OF LAND REFORMS IN TAIWAN,
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Kang Chao*

1. Introduction

While the importance of land reform in developing countries is generally recognized, opinions differ widely with regard to its exact impacts. Land reform is sometimes conceived of as a vital precondition for takeoff in economic development. Others contend that its significance is primarily political and that its economic effects are rather indirect. That is to say, land reform enhances political and social stability and thereby makes economic development easier, but otherwise contributes little to production.

Analyzing economic effects of land reform is indeed a complex matter. For one thing, land reform naturally makes some people economically better off and others worse off. From the point of view of welfare economics, land reform must be assessed on the basis of the "net" gains. For another thing, inasmuch as production is basically an input-output relation, to claim that an institutional change is beneficial to economic production one must demonstrate either that it can increase the quantities of inputs beyond what would have otherwise been used or that it is capable of raising the production function to a higher level. Whether such effects will occur usually depends on the background conditions of the economy in which land reform has been

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conducted and the way in which land reform has been implemented. The results may vary from case to case.

In this paper I attempt to compare the economic effects of land reforms in three Asian countries. These countries have many similarities in the conditions of resource endowment in their agricultural sectors, e.g., the extremely unfavorable land-man ratios.¹ On the other hand, they differ considerably in economic institutions, orientations of government policies, and degrees of economic development. To some extent the variation in the outcomes of land reforms may be attributed to the dissimilarities in their economic conditions.

Land reforms in the three countries took place in the same general time period -- 1948 to 1953. The fact that they have become historical events does not prevent them from providing policy implications for contemporary efforts to change land tenure systems in other countries. As a matter of fact, it is because those land reforms took place long ago that we can obtain sufficient data to evaluate both the short-run and the long-run effects.

Specifically, I intend to analyze (1) the effects of land reform on input utilization, i.e., the shifting of the production function due to scale problems and changes in farmers' incentives; (2) the effects on the quantities of inputs devoted to farm production, such as current

¹The arable land-man ratios for the three countries are:
China 0.18 hectare per capita
Taiwan 0.08 hectare per capita
Japan 0.06 hectare per capita

The ratios are even closer if we use cropland instead of arable land because China has a much lower index of double cropping than Taiwan and Japan. See United Nations, Economic Bulletin for Asia and the Far East 14 (June 1965): 3.

inputs and capital investment; and (3) the effects on consumption of peasants and the economy as a whole.

2. Legislation and Implementation of Land Reform

a. Japan

The first land reform bill was drafted by the Ministry of Agriculture of the postwar Japanese government at the end of 1945, on the suggestion of the Supreme Command of Allied Powers (SCAP) as a part of the plan to democratize Japan. The bill was not passed by the Diet, however. After the SCAP sent another memorandum to the Japanese government, pressing further on the same issue, a land reform bill was finally enacted in October 1946. The whole land reform program was completed in 1950.

According to the Act, farmland holdings were to be compulsorily purchased by prefectural governments on behalf of the state, except for those pieces reserved for the owners. The total permissible amount of land to be held by each owner was set at 12 cho (1 cho = 0.99174 hectares) in Hokkaido and an average of 3 cho in the rest of Japan.² The land purchased by the government was then sold to tenant farmers.

The transfer prices of land were originally computed on the basis of capitalized earnings in 1945 at the then prevailing interest rate.³ These yen prices were pegged throughout the four-year period of land reform. The purchase prices of land paid by tenant farmers were the same as the prices previously paid by the government to landlords. Since

²Ronald P. Dore, Land Reform in Japan (London: Oxford University Press, 1959), p. 138.

³ibid.

there was considerable inflation during that period, by the time the landlord received the full payments for the land from tenants the sum was exceedingly small in real terms as compared with the actual yields of land. For instance, the price of rice had risen by more than 40 times between 1945, when the government computed land values, and 1950. Hence a peasant who bought a piece of paddy land in 1950 would have to pay only 2.5 percent of the estimated value of the land, or 5 percent of the annual yield.⁴ This meant that tenant farmers received land virtually free because of the currency depreciation. Payments by tenants buying land could be in cash or could be made on an installment basis over 30 years at an interest rate of 3.2 percent. In fact, since the total payments were such a small percentage of annual yields of land, most tenants paid cash within a year or two after purchase.

As a result of land reform, 1,933,000 hectares of land were transferred, accounting for about 80 percent of the total tenanted land in Japan. The number of recipient households accounted for 70 to 80 percent of the total farm households then in existence. Since only resident landlords were allowed to retain land within the limits set by the government, absentee land owners had to sell their land. Therefore, the tenancy rate was reduced to less than 10 percent after the reform; most of tenanted land was cultivated by part-owner farmers.

b. Taiwan

Because of the relatively small territory, land reform in Taiwan

⁴Tsutomu Ouchi, "The Japanese Land Reform: Its Efficacy and Limitations," The Developing Economics, 4 (June 1966): 131.

began and was completed in a single year -- 1953. However, there were two other programs, "farmland rent reduction" and "sales of public land to farmers," preceding land reform. Since the government field workers had accumulated useful experience in the two previous programs, land reform was well planned in advance and carefully implemented. The work began with a thorough investigation of private land in order to determine the area to be compulsorily purchased and the area to be retained by each owner. The permissible area of retained land for each landowner was set at 3 chia (1 chia = 0.97 hectare) of paddy field of a standard grade. Retention acreages for dry land or paddy field of other grades were to be converted to the equivalent of standard grade paddy field.⁵ The general procedure of land transfer was similar to that in Japan. Land was first purchased by the government from the landlords and was then resold to the tenants who were cultivating it.

Unlike the Japanese case, however, the interest of landlords in Taiwan was better protected by the more reasonable formulation of transfer prices and payment procedures. For the land transferred, landlords were paid 2.5 times the annual yields. All such immovable fixtures as farmhouses, drying grounds, ponds, fruit trees, and bamboo groves were to be fully compensated for in accordance with their imputed values. Of the total compensation to landlords, 70 percent was paid in land bonds and 30 percent in public enterprise stocks. There were two types of land bonds, both stated in commodity units in equivalents of rice or sweet

⁵For detailed information about land reform in Taiwan, see Hui-sun Tang, Land Reform in Free China (Taipei: Joint Commission on Rural Reconstruction, 1965), especially Section IV of Chapter IV.

potatoes in order to protect the holders from possible currency depreciation. In addition, land bonds carried an annual interest of 4 percent.

The purpose of paying landlords with the stocks of government-owned enterprises was partly a means to finance the land transactions in the initial stage and partly an opportunity to convert public corporations into private enterprises, an effort to reduce the size of the public sector in the whole economy. The stocks were those of the Taiwan Cement Corporation, the Taiwan Paper and Pulp Corporation, the Taiwan Agricultural and Forestry Development Corporation, and the Taiwan Industrial and Mining Corporation. Each landlord had to take all four kinds of stocks in fixed proportions. Of course, landlords were free to liquidate their holdings of such stocks at any later date.

After the land was resold to tenant farmers, the purchasers paid the prices of the land plus 4 percent per annum in 20 equal installments over a 10-year period. Payments could be made either in cash or in kind. The proceeds were put in the custody of the Taiwan Land Bank for the purpose of redeeming outstanding land bonds. In order to ensure the full eventual compensation to landlords who were holding land bonds, the Redemption Guaranty Fund was established in the Taiwan Land Bank. The Fund could be drawn on for making payments to landlords to redeem land bonds in case there should be a delay or default in the installment payments by land purchasers.

On the completion of land reform, 143,568 chia of farm land had been transferred from 106,049 landlords to 194,823 land purchasers. The tenancy rate was reduced from 38.6 to 15.2 percent. It should be pointed out that, unlike the Japanese case, land reform in Taiwan was not designed

to eliminate absentee landowners. Therefore, many families were allowed to retain farmland within the stipulated limits but they leased out their land to tenants for cultivation. This was especially common when the owners were old, infirm, disabled, or in military service. There were also landowners who leased out part of their retained land. On the other hand, many tenants did not apply for land purchase during the land reform period and preferred renting others' land. The existence of some absentee landowners explains why the tenancy rate after land reform was higher in Taiwan than that in Japan.

c. Mainland China

In the first few years after the takeover in 1949, the main task of the Communist government in the countryside was land redistribution. There was then a consensus among the Communist leaders that land redistribution was a necessary measure to destroy the social and political foundation of the Nationalist government. A law of land redistribution designed for nationwide application was published in June 1950.⁶ The Communist party sent specially trained cadres to each village; under their supervision land reform committees and peasant associations were organized to foment class struggle and conduct land redistribution.

Land redistribution in China differed in many ways from ordinary land reforms. First of all, land redistribution was seen as a means to carry out class struggle in the rural areas. The process of redistribution

⁶For details of the Chinese land reform on mainland and other related issues, see Kang Chao, Agricultural Production in Communist China, 1949-1965 (Madison: The University of Wisconsin Press, 1970), Chapters 1 and 2.

began with classifying farm households in each village or locality into categories of landlords, rich peasants, middle peasants, poor peasants, and farm laborers. It must be noted that the classification was not based solely on the size of landholdings and the tenant status. For instance, according to the official decree, "Decisions Concerning the Differentiation of Class Status in the Countryside," the category of rich peasants included those who "own no land but rent all their land from others."⁷ In other words, rich tenants were designated as rich peasants and were to be eliminated. Landlords and rich peasants were not allowed to reduce their landholdings by selling them or by bequeathing them to their relatives or friends. Instead, ad hoc committees, acting on behalf of local governments, confiscated land from the exploiting classes and rich peasants with no compensation payments whatsoever. The land so requisitioned in a village or locality was then distributed "in a unified manner according to the population therein,"⁸ which was interpreted in most cases as an equal per capita allotment. The recipients obtained land automatically without having to apply for land purchase; nor was any compensation payment required. Along with land also confiscated and redistributed were farm implements, draft animals, and other properties of the exploiting classes. However, owing to the vague provisions and unclear definitions and the vast area in which the reform

⁷See Kuo-Chun Chao, Agrarian Policies of Mainland China: A Documentary Study, 1949-1956 (Cambridge: Harvard University Press, 1957), p. 46.

⁸See Article 11 of the Agrarian Reform Law, cited *ibid.* p. 43.

was being carried out, wide local variations, deviations, and confusions existed.

Land redistribution was concluded in 1952. Altogether 42 percent of farmland in China had been redistributed, resulting in a thoroughgoing elimination of tenancy in that country. Virtually the whole rural population was directly affected by the reform in one way or another. The exploiting classes in the rural areas were said to have been destroyed.

Land redistribution in China was taken more as a political than an economic measure. As soon as the social and political foundation of the former Nationalist government had been destroyed beyond any possibility of revival, the Communist leaders began to face the problem of what should be done next in the rural sector from the viewpoint of long-run economic policy. They agreed that private ownership in that sector was incompatible with the general economic structure in the regime and that collectivized farming should eventually replace peasant farming. Disputes among the Communist leaders occurred, however, concerning the timing of collectivization. The completion of land redistribution was immediately followed by a carefully planned, gradual process of collectivization. The whole movement was drastically accelerated in 1955 under the demand of the party chairman, Mao Tse-tung. The whole countryside was converted into collective farms by 1957 and into communes by 1958. Although the peasant economy in China after land redistribution was short-lived, some of its effects are nevertheless discernible.

3. Possible Shifts of Production Functions

Theoretically, if an institutional change is capable of raising the

production function it is nothing but a disembodied technological change, as broadly defined. Its effects should be reflected in the residual term of an aggregate input analysis. In other words, the growth of output after the institutional change cannot be fully explained by the increases in inputs; there tends to be a residual, which is usually called the productivity change of aggregate input. Land reform is often considered as one of such institutional changes. If this is true the effects of a sweeping reorganization of the distribution of land should be observable in an analysis of aggregate input for the farm sector of the country in which the reform has taken place.

After land reform the production function of agriculture might be shifted by three possible forces. First, most proponents of land reform hypothesize that it tends to promote the incentives to produce on the part of land recipients. They believe that farmers are likely to work harder and more carefully on their own land than on rented land. The quality difference of the labor input before and after reform cannot be measured, hence it can only be reflected in the residual as a rise in productivity of aggregate input. Theoretically, this effect should work instantaneously and once for all. Therefore its existence may be detected as a one-step rise in input productivity immediately after land reform.

On the other hand, many economists are skeptical about such an outcome of land reform. Whether land reform would boost production incentives of farmers, it is argued, depends on whether the previous tenancy system had impaired incentives. The degree of the disincentive effect of tenancy in turn depends on the nature of the arrangement under which

rent was paid. The whole analysis is quite analagous to the well-known neutrality theory of taxation with respect to work incentive. One may simply treat rent payments as private taxes. Therefore, the system of share rent (cropsharing between the tenant and the landlord), which is equivalent to a proportional income tax, would have certain disincentive effects, whereas the system of fixed rent (in kind or cash), which is analagous to a lump sum tax, would have no disincentive effect at all.

A second force which has the potential to alter agricultural production makes it necessary to consider the possibility that land recipients may have stronger incentives than before to adopt new farming techniques which would lead to higher yields. The underlying factor of this postulation is that the change in farm institution and ownership systems may affect the risk-taking incentives and risk-aversion of farmers. Here, the analysis of relations between taxation and risk-taking again proves helpful. Under the system of share-rent tenancy the landlord shares with his tenant to the fullest extent the gains as well as losses stemming from any risky innovation. Since the rent system would reduce the risks and gains by the same degree the relative position of the two elements would remain unchanged. Hence there is no unfavorable effect on risk-taking. The fixed-rent system is no worse than the share-rent system in this regard. Under this system both the potential gains and losses would not be reduced by the rent payment at all; the tenant who is the residual claimant would be fully responsible for both. The system of owner farmers is believed to be superior to either of these tenancy systems in that the higher level of income due to the abolition of rent

payments gives farmers a greater ability to take risk or reduces their risk-aversion. However, to detect this effect empirically is extremely difficult. For one thing, it is difficult to establish the causal relation between land reform and the subsequent adoption of new farming techniques. The latter might occur even without the former. For another thing, the nature of new farming techniques may vary. Some, such as changes in the planting methods and the timing of fertilizer application, are truly disembodied in the sense that they do not entail higher input costs. Others are embodied in nature if they require more expensive inputs.

If the adoption of new farming techniques does not entail higher input costs, the impact would then be shown by the residual term in an aggregate input analysis. This effect would, however, appear after a certain time lag and remain effective continuously thereafter. It takes time to seek, learn, and adopt a new technique. And farmers would keep on adopting new techniques, one after another.

A third potentially altering force to be considered is the possible scale economy or diseconomy. In most cases, land reform does not alter the land-man ratio in a given country; it only more evenly distributes the same total area of farmland among the same farm population. Thus, the previous large farms are reduced in size and small ones enlarged, leaving the land-man ratio and the average size of farms more or less unchanged. If the scale economy of farm production in any given country is linear, the losses on the farms which have been reduced in size in the process of land reform are likely to be offset by the gains on the farms which have been enlarged. If the changes in the two opposite directions

have asymmetrical influences, there then must be some net result appearing in the residual term. Like the effect on production incentives, scale economies or diseconomies should function without any delay. The impact should be once and for all, unless there are further changes in the land-man ratio due to a rapid population growth in the subsequent years.

To detect the above three elements, we have compiled the results of aggregate input analyses for the farm sectors in the three countries during and after their land reforms, respectively. The methods used in deriving the aggregate input productivities are fairly comparable. In Table 1, year 1 refers to the year when land reform was completed in the nation; other years are the ensuing years.

It is apparent from Table 1 that there was no rise in aggregate input productivity immediately after land reform in any of the three countries. As a matter of fact, productivity declined by various degrees in year 2 in all three cases. This seems to suggest either that land reform had little positive effect on production incentives or that a substantially favorable impact on production incentives was offset by a substantially unfavorable effect from the changes in the operation scale. Now, the question is to ascertain which one is the more plausible suggestion.

All three countries under study are characterized by a large farm population relative to the total area of farmland, so that the average size of farms was probably suboptimal. Land reform has led to further fragmentation of farmland. This is one of the reasons why some economists are skeptical about the advisability of land reform in an overpopulated country. However, while the unfavorable impacts due to

TABLE 1
Productivity Changes of Aggregate Farm Inputs
In Taiwan, Japan, and Mainland China
(Indexes)

Year	Taiwan			Japan			Mainland China		
	Output	Input	Productivity	Output	Input	Productivity	Output	Input	Productivity
1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2	100.4	106.4	94.4	99.2	99.9	99.2	101.7	104.5	97.4
3	100.0	104.4	95.8	109.3	104.0	105.1	103.9	108.8	95.5
4	108.9	109.8	99.2	94.1	107.8	87.3	108.7	112.6	96.5
5	118.5	112.3	105.5	102.7	110.1	93.3	108.3	115.5	93.8
6	125.7	115.2	109.1	125.2	114.9	108.9	112.4	122.8	91.5
7	124.8	114.8	108.7	117.5	117.5	100.0			
8	124.9	120.3	103.8	121.8	117.4	103.7			

Sources: **TAIWAN:** Recomputed from the data given in Yhi-Min Ho, Agricultural Development of Taiwan, 1903-1960 (Vanderbilt University Press, 1966), pp. 65 and 75. Year 1 is 1953.

MAINLAND CHINA: From K. Chao, Agricultural Production in Communist China, 1949-1965, p. 238. Year 1 is 1952.

JAPAN: The Output Index series is the index of crops given in Japan, Statistical Abstracts of Ministry of Agriculture and Forestry, 1959, p. 100. Year 1 is 1950.

The Input Index series is computed on the basis of the following data:

- a) **Labor:** The index of working hours in agriculture, as given by Masaru Kajita, "Land Policy after Land Reform in Japan," The Developing Economics 3 (March 1965): 94.
- b) **Fertilizer:** Computed from the data in Statistical Abstracts, 1959, pp. 9-11. All types of fertilizers have been added up according to their standard nutrients.

Table 1 (cont.)

- c) Land: Due to the change in survey method in 1956, the official data on cultivated land display a sudden and substantial jump between 1955-56. See Statistical Abstracts, 1959, pp. 6-7. Since the area of cultivated land in Japan remained more or less constant before and after the change in survey methods it is reasonable to take land as a constant factor.
- d) Fixed Capital: Computed from the values of farm implements in various years, as given in Statistical Abstracts, 1959, p. 56.
- e) The weights are those of Tohio Shishido:
 - Land 26.1 percent
 - Labor 51.5 percent
 - Capital 8.2 percent
 - Current Inputs 14 percent

See A. M. Tang, "Research and Education in Japanese Agricultural Development, 1880-1938," The Economic Studies Quarterly 13 (May 1963) 93.

fragmentation are undeniable, they can hardly be substantial. In all of the three countries the total farmland before land reform was utilized in an intensive manner in order to absorb the excessively large rural population. There were only a few large farms even before land reform; the landlord with a large land holding usually leased out his land to a number of tenants and the land holding was divided into a number of small farms as operation units. Land reform equalized the size of land holdings, but there was no drastic equalization of the size of operation units, since they did not show a great variation before land reform anyway. Since scale economies refer to the size of operating units, not ownership units, the effects of land reform could not be too strong.

In the absence of a strong offsetting force, the positive impacts of land reform on production incentives could not be substantial either. Otherwise there would not have been negative changes in aggregate input productivity. It seems that the tenancy systems in the three countries did not severely impair farmers' incentives to produce, and the higher income of land recipients after the reform exerted only a marginal boosting effect.

In this connection it is interesting to note the relatively larger reduction in productivity in Taiwan. If this was not caused by unusually unfavorable weather in Taiwan during those two years, the following may be accepted as plausible explanations. First, land reform in Taiwan was preceded by a rent reduction movement. Thus, if there ever existed any positive effect of rising income on production incentives it would have occurred before land reform. Second, as indicated earlier, land

redistribution in Communist China involved no compensation payments at all whereas in the case of Japan the stipulated compensation payments were reduced to negligible sums due to the rapid currency depreciation. Taiwan was the only country where land recipients were required to make full compensation. Naturally, the rise in disposable income of land recipients in Taiwan was less substantial than in China and Japan.

Productivity changes after years 1 and 2 are rather diverse in the three countries. Taiwan shows a continuous rise; mainland China reveals a steady decline; and Japan shows no discernible trend at all. The divergent results seem to suggest that the favorable influence of land reform on technical changes, if any, must be insignificant and that the actual development of productivity is shaped largely by other factors. The more impressive results in Taiwan than those of Japan were probably due to the general backwardness of Taiwan's agriculture, which left more room for farmers to improve their production techniques. This was coupled with the strenuous promotion activities of the Joint Commission on Rural Reconstruction (JCRR) on the island.

The case of Communist China is rather unique. While there may be numerous factors contributing to a rising trend of productivity in an economy, the factors responsible for a chronic decline cannot be too many and should be easily identifiable. The continuous fall in input productivity is not surprising at all in view of the fact that the Chinese land redistribution was immediately followed by the whole process of socialist transformation of agriculture. The damaging effects of socialization on incentives have been demonstrated in all previous instances. They began to loom in China. The results were so severe as

to completely offset the potentially tremendous economies of scale gained by consolidating small farms into large collectives.

4. Effects on Input Quantities

It has also been contended that land reform may induce peasants to devote more inputs to production than they would otherwise have done. That is to say, even without any upward shift of the production function, the agricultural sector can still benefit by traveling along the same curve at a higher speed. Presumably this effect would be most pronounced in the cases of capital inputs and such current inputs as fertilizer. The tenancy system may have retarded farm investment in two possible ways. First, when the level of rent was high tenants were deprived of investable funds. Second, because of the uncertainty of tenure, tenants usually took a short-run position. They not only had no interest in making long-range investments to improve land but also had a tendency to maximize current output at the expense of future output by unduly depleting the fertility of land. These shortcomings tended to be especially severe when landlords were absentee owners who, like their tenants, would have no desire to improve the land quality.

In all the three countries the amount of cultivated land has been almost a constant factor in the past few decades, with only negligible variation from year to year. It can hardly be altered by any change in the tenure system. As for the labor input, both Communist China and Taiwan showed mild increases in the 1950s, whereas it fell slightly in the case of Japan. There are good reasons for us to believe that the quantity of labor input in the farm sector is largely determined by the growth rate of population and the rate at which the industrial sector

can absorb migrant labor from the agricultural sector. At least this is true in the three Asian countries under study. For instance, Japan had an average population growth rate of about 1 percent per year in the 1950s, which was much lower than that in Communist China and Taiwan. The astonishingly high expansion rate of the Japanese industry in that period is a well-known fact.

As shown in Table 2, fixed capital and fertilizer application rose rapidly after land reform in all three countries. Among them, the Japanese case is particularly revealing. Increases there in both fixed capital and fertilizer application exceeded those in the other two countries by large margins. This fact partly reflects both the advanced technique of farming and the better ability of industry to supply those inputs in Japan. One may wonder whether these increases had anything to do with land reform. Although there is no direct evidence, some clues may be found by examining how private farm investment was financed in that country. As can be seen from Table 3, the amount of debt outstanding for the average Japanese farm household rose faster than income, resulting in an increasing debt-income ratio. The fact that the Japanese farmers used more and more outside funds to finance capital formation is a clear indication that there was a rising willingness to invest.

Regular surveys of farm household budgets began much later (1958) in Taiwan. The survey results have manifested a similar upward trend in the debt-income ratio in 1958-67.⁹ However, the implication is not

⁹Chi-tseng Shih, "Changes in Real Assets of Farm Households in Taiwan," in Economic Essays (Economic Research Institute, Academia Sinica, 1971), p. 243.

TABLE 2

**Increases In Farm Inputs In Taiwan, Japan
and Mainland China
(Indexes)**

Year	Fixed Capital			Fertilizer		
	Taiwan	Japan	Mainland China	Taiwan	Japan	Mainland China
1	100.0	100.0	100.0	100.0	100.0	100.0
2	104.1	118.4	105.9	118.0	114.5	111.2
3	105.6	140.3	111.3	120.0	125.0	122.0
4	106.2	161.1	114.7	131.0	149.8	129.4
5	106.2	189.3	117.6	135.0	163.6	137.5
6	107.4	208.8	111.8	140.0	184.3	154.5
7	107.6	233.9		139.0	196.8	

Sources: Same as Table 1, except that the series of reproducible fixed capital of Taiwan is taken from United Nations, Economic Bulletin for Asia and the Far East, p. 58.

TABLE 3

The Debt-Income Ratio of the Japanese
Farm Households
(current yen per household)

Year	Income	Debt Outstanding	Debt-Income Ratio (%)
1950	203,777	9,430	4.63
1951	252,539	11,993	4.75
1952	282,387	17,044	6.04
1953	301,160	25,988	8.63
1954	315,460	35,072	11.12
1955	355,792	37,449	10.53
1956	337,341	44,723	13.26
1957	340,639	45,197	13.27

Source: Statistical Abstracts, 1959, pp. 59 and 60.

so clear in this case, partly because we have no idea whether this trend started immediately after land reform and partly because 1958-67 happened to be a period which witnessed a considerable reduction in the market rates of interest.

The story of Mainland China is quite different. Because peasant farming by individuals after land redistribution was so short-lived there was no time for its long-run effects to materialize. It is doubtful that the collectivized farmers would have strong incentives to invest. Official documents and publications of Peking openly admit that the increases in farm inputs in the 1950s were the results of the government policy to mobilize agricultural resources.¹⁰

5. Effects on Consumption by Farmers

It has been postulated that the propensity to consume is influenced by, among other things, the size of assets held by the spender--what is sometimes described as the wealth effect on consumption. If this is true, one would expect to see certain shifts in the propensities to consume on the part of those farmers who have received land in the process of land reform. Unless these shifts are completely offset by the wealth effect in the opposite direction on the part of former landlords, there tends to be a rise in the aggregate consumption function in the rural sector. For the same reason, land reform may have some impact on the commercialization of food grains.

Landlordism usually served as an extraction mechanism, channeling agricultural surpluses to the urban areas. Tenants were obliged to make

¹⁰See K. Chao, Agricultural Production in Communist China, Chapters 4, 5, and 6.

rent payments either in cash or in kind. In the former case tenants had to sell part of their harvest to the urban population in order to raise cash. In the latter case, landlords collected grain from their tenants and shipped it to urban markets. This extraction mechanism naturally was destroyed by land reform. What results from the elimination of the extraction mechanism, however, depends on two things. First, it depends on whether a replacement mechanism appears after land reform. Second, insofar as farmers had higher disposable income, they would spend their extra income in accordance with the relative income elasticities of various expenditure items.

There are many possible measures that may be taken after land reform to replace the lost extraction mechanism and to maintain the same flow of grain to cities. (1) If the land reform legislation calls for compensation payments from the land recipients over a number of years, either to the original landowners or to the government which had advanced loans to buy the land, the compensation payments would temporarily serve the function of extracting grain from the rural sector. (2) The government may raise agricultural taxes in the hope of forcing farmers to deliver sufficient grain to the urban markets. (3) The forces of market supply and demand may bid up prices of grain relative to industrial products so that farmers may be lured to sell more grain than they would otherwise have done. In this case, the economy would witness a temporary movement of the terms of trade against industrial goods.

The consequence of land redistribution in Communist China in this connection is clear. The Peking government neither required compensation payments from land recipients nor raised agricultural taxes

substantially after land redistribution. As a result, peasants received more disposable income. Owing to the generally low standard of living in the Chinese villages, the income elasticity of food grain was still quite high during that period. There was a strong tendency among peasants immediately after land redistribution to spend their extra income on food consumption. This simply took the form of curtailing grain supplies to the urban markets. In other words, land redistribution without the requirement of compensation payments had induced the rural sector to regress to a subsistence economy. This was aggravated by the reluctance of the Peking government to let the terms of trade between the urban and rural sectors move against industrial goods; it controlled food prices everywhere so that the market forces failed to adjust themselves until more grain was shipped to the urban markets.

The Chinese land redistribution was concluded in 1952. That was also the year when China saw the first bumper crop in many years. Yet the increased grain consumption in the rural sector created such a serious shortage of food in cities that the government had to initiate in 1953 the system of "unified purchase and unified sale" of grains, a program combining compulsory procurement and food rationing. In explaining the need for such a system, Chen Yun, one of the vice premiers, said: "Production of food was increased after the land reform. But, since the living standard of peasants has improved, their food consumption has increased accordingly. They have no urgent need to sell their surplus grains. Consequently, the rate of marketed grains has declined instead of rising."¹¹

¹¹Speech in Hsin Hua Yueh Pao (New China Monthly), no. 8 (1955), p. 52.

The food shortage in the urban areas worsened thereafter. This eventually produced an additional reason for the Chinese government to collectivize agriculture. Managers of collective farms, who had full control over farm output at the local level, could first meet the obligation of compulsory delivery before distributing grains to member households. Besides, it was much easier for the government to deal with a smaller number of collectives than with some 100 million individual households. This motive was clearly indicated by LI Hsien-nien, the then Minister of Finance. "In the Spring of this year (1955) the supply of grain was tight and the procurement work encountered difficulties . . . hence some comrades hoped to accelerate agricultural cooperativization."¹²

In a sense, the compulsory procurement system and collectivized farming have replaced the extraction mechanism of landlordism in China. Even so, the tendency for the rural sector to fall back to a subsistence economy was not entirely stopped. The official data on grain consumption, as presented in Table 4, unmistakably disclose this fact. Obviously, per capita consumption of food grains in the countryside continued to rise at a remarkable rate after 1952 whereas that of the urban population showed a slight decline.

Land reform in Japan resembled the Chinese case in that the compensation to landlords as fixed in 1945 yen had been reduced to negligible sums by the currency depreciation so that land recipients in Japan obtained their land virtually without payment. Interestingly, however, the impacts on consumption were quite different. Since the Japanese

¹²Ta Kung Pao (The Impartial Daily), 8 November 1955.

land reform was conducted at a time when the economy was fairly well developed and the average income in the countryside was considerably above the subsistence level, the income elasticity of food was low for farm households. The extra income after land reform was primarily spent on additional industrial goods. Instead of hurting the urban population, land reform turned out to be conducive to further industrial expansion.

Table 5 demonstrates that as income of Japanese farm households rose between 1950 and 1957 their average propensity to consume rose too. This should not be construed as a marginal propensity to consume greater than unity. Nor does it mean that the real income of farmers declined in those years. The consumer price index in Japan lagged behind the rise in money income in that period. The reasonable explanation is that the consumption function in the Japanese agricultural sector had shifted upward after land reform. The upward pressure of the wealth effect on consumption was eventually offset by the declining marginal propensity to consume as income continued to rise.

More interesting are the detailed consumption data contained in Table 6. Consumption of staple food by farm households actually fell steadily as income rose after land reform, a result diametrically different from the Chinese case. The consumption items that recorded relatively high growths were "Clothing," "Miscellaneous," and "Extraordinary." No doubt these items consisted mainly of industrial products and services supplied by nonagricultural sectors. Land reform thus had the obvious effect of enlarging the rural markets for industrial goods and services.

Because of the substitution of nonstaple food for staple food in

TABLE 4

Per Capita Consumption
of Food Grains in
Mainland China
(in kilograms)

Crop Year	Urban Areas	Rural Areas
1953-54	289.80	218.20
1954-55	279.05	227.25
1955-56	278.35	239.40
1956-57	282.35	258.90

Source: Data Office, "The Basic Situation of Unified Purchase and Unified Sales of Food Grains in China," Tung-chi kung-tso (Statistical Work), no. 19 (1957), pp. 31-32.

TABLE 5

Average Propensity to Consume in
the Japanese Farm Sector, 1950-57
(Current yen per household)

Year	Total Income	Total Consumption Expenditures	Average Propensity to Consume
1950	203,777	174,149	0.85
1951	252,539	216,091	0.86
1952	282,387	253,714	0.90
1953	301,160	284,089	0.94
1954	315,460	302,911	0.96
1955	355,792	312,757	0.88
1956	337,341	320,261	0.95
1957	340,639	318,865	0.94

Source: Statistical Abstracts 1959, p. 59.

TABLE 6

Indexes of Rural Consumption per Household
in Japan
1951-57

Year	General	Staple food	Non-staple food	Clothing	Light and heat	Housing	Miscellaneous	Extraordinary
1951	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1952	111.8	95.8	118.3	139.1	100.3	117.0	112.8	133.8
1953	116.9	94.1	122.3	152.8	96.6	127.5	124.2	150.3
1954	117.5	93.4	124.6	156.0	98.3	125.4	126.6	149.8
1955	120.0	93.0	133.7	158.5	98.1	123.4	131.2	161.3
1956	122.1	92.7	137.7	160.7	97.8	127.5	136.1	157.1
1957	125.6	89.2	140.2	170.2	97.6	125.7	144.9	189.7

Source: Statistical Abstracts, 1959, p. 62. All are based on constant prices.

the rural areas of Japan after land reform, the tight situation of grain supply in the urban areas was greatly relaxed. This enabled the Japanese government to phase out the food rationing system which had been carried over from wartime. Again, this development was drastically different from what occurred in Mainland China immediately after land redistribution.

Taiwan may be regarded as a case between the two extremes represented by Communist China and Japan, so far as the effect of land reform on consumption is concerned. On the one hand, both the high income elasticity of food and the wealth effect seem to have formed a strong pressure on farmers to withhold more grain for self-consumption. On the other hand, the obligatory compensation payments compelled them to sell grain to the urban markets.

One can see from Table 7 that the indexes of per capita consumption in Taiwan have also shown declines for staple food, mild rises for non-staple food, and rapid increases for industrial products.¹³ It must be noted that this table refers to the whole economy of Taiwan rather than the farm sector alone. No similar data are available for the sector itself except for rice. Based on rice alone (see Table 8), which accounted for more than 90 percent of total staple food consumption in Taiwan,¹⁴ per capita consumption of farm households also showed an unmistakable trend of decline.

¹³The fall in cotton fabrics reflects the competition of such synthetic materials as nylon.

¹⁴Rice accounted for 93 percent of staple food consumed by farm households in 1950-51. See United Nations, Economic Bulletin for Asia and the Far East, p. 65.

TABLE 7

Indexes of Per Capita Consumption of
Selected Products in Taiwan
1953-1958

	1953	1954	1955	1956	1957	1958
Rice	100	89	95	93	94	93
Sweet Potato	100	108	99	101	103	109
Vegetables	100	98	97	97	99	100
Pork	100	99	101	104	117	129
Fish	100	112	128	134	138	147
Bean and Peanut Oil	100	87	96	98	101	88
Cigarettes	100	107	116	114	109	112
Wine	100	103	113	109	112	120
Cotton Fabrics	100	107	101	79	81	77
Underwear	100	93	202	226	260	164
Towels	100	115	95	91	88	89
Electric Fan	100	253	350	519	636	626
Radio	100	102	67	193	238	294

Source: United Nations: Economic Bulletin for Asia and the Far East,
p. 68. All are based on constant prices.

TABLE 8

Per Capita Consumption of Rice
by Farmers in Taiwan
1953-58

Year	Agricultural population (1,000 persons)	Rice consumed by farmers (1,000 tons)	Per capita consumption of rice by farmers (kg)
1953	4,382	821	187
1954	4,489	821	183
1955	4,603	818	178
1956	4,699	819	174
1957	4,790	830	173
1958	4,881	846	173

Source: United Nations, Economic Bulletin for Asia and the Far East, p. 60, and Anthony Y. C. Koo, The Role of Land Reform in Economic Development (New York: Praeger, 1968), p. 138.

TABLE 9

Marketable Surplus of Rice

In Taiwan, 1953-58

(1,000 Metric tons)

Total Production (1)	Seed and Feed (2)	Self-Consumed by Farmers (3)	Compulsory Sales to Government (4)	Fertilizer Barter (5)	Free Market Sales (6)	Total Marketable Rice (7)	Marketable Rice as percent of Total Production (8)
1,642	105	821	227	323	166	716	43.6
1,695	107	821	206	393	168	767	45.3
1,615	102	818	176	377	142	695	43.0
1,790	111	819	218	418	224	860	48.0
1,839	113	830	225	420	251	896	48.7
1,894	115	846	213	428	292	933	49.3

Sources: United Nations, Economic Bulletin for Asia and the Far East, p. 60, and Koo, The Role of Land Reform in Economic Development, p. 84.

It is true that even before land reform there existed in Taiwan schemes by which the government could extract rice from peasants for the purpose of stabilizing food prices in cities. One transfer mechanism was compulsory delivery of rice to the government and the other was the barter between rice and commercial fertilizer. Under the latter system the government monopolized production and importation of chemical fertilizer, and distributed it to those farmers who wished to buy. The barter ratio between fertilizer and rice was set by the government in such a way that the deal contained an element of hidden taxes on fertilizer users. The barter was not compulsory, however, in the sense that no one was forced to accept fertilizer from the government.

Land reform did not result in any additional pressure on the procurement program of the government. Total sales of rice by peasants to the government remained roughly constant until 1956 (see Table 9). Furthermore, out of the total sales of rice to the government, the proportion of compulsory delivery gradually decreased, whereas the collection from the rice-fertilizer barter rose. The increased rice surpluses were carried to the free markets by peasants, resulting in a rise in the ratio of total rice marketed from 43.6 percent in 1953 to 49.3 percent in 1958.

6. Conclusions

Based on the above analysis a number of conclusions may be deduced. There is no clearcut indication that land reform is always capable of raising the production function of agriculture. In fact, all three countries under study showed a decline in the productivity of aggregate input immediately after the change in land tenure. Therefore, this institutional change may not properly be classified as disembodied

technical progress. On the other hand, evidence is much stronger to support the claim that land reform has the significant effect of inducing farmers to marshal more inputs, especially modern inputs, in their production. In a sense, the beneficial results of land reform are "embodied" in the increases of inputs. Land reform also exerts considerable influences on consumption by the rural population. Whether these impacts on consumption are favorable or disturbing depends on the general level of income and the stage of growth in the country in which land reform is conducted. For a backward country it may retard the commercialization of farm products unless some powerful extraction mechanism is introduced to replace landlordism. But for a country which is fairly well industrialized, land reform will definitely lead to an expansion of the home market for industrial goods.