

On the Structure of the Peasantry Household Economy

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*1. A Model of Economy as a whole, including the household economy

Japanese economy as a whole has continued to advance with such a rapidity as to make less developed countries envious, whilst a footstool which raised it up to the miraculously high steps was nothing but long deterred industry; for example agriculture, which has been left lying low at the outer area of the capitalist economy; and also was though it needs no stressing that industry in general has been carried out with low level of labour income throughout the whole country. There is no need for us to go back far in time to find out the economic society which remains, as it were, in the Middle Age as well as in the Recent Feudal Age, if we carry ourselves back into the mountain villages or the lone and isolated island.

Of course, the farm-land reform measures which were executed after the second world war in Japan, has greatly contributed to make even the structural unbalance of the historical and economic leadership in rural areas. But, contrary to the general reckoning, at that time it was more important to control the land stock value than to take any measures on the rate of land rent. Although the farm-land reform measures were effective in checking the capitalistic developments in agriculture, the stress was laid chiefly on reforming the farm-land ownership system, the upper limit of which was limited, on an average, to 7.5 acres. But, it seemed that the restriction of a farm-land-scale conflicted with that ownership system, bringing forth the following class-differentiation of the peasantry, occasioned by uneven capital-accumulation. The author, however, doesn't assume that the farm-land reform measures were the cause of such a contradiction, but it is assumed that it may be due to the fact that both the peasantry household economy in agriculture and the cheap labour in the non-agricultural industry were allowed to survive in that stage of capitalism, in which the capitalist economy in Japan which kept the giant family trust, *the Zaibatsu*, has not reached its maturity, or the modern monopolistic capitalism; for it may reasonably be assumed that in the latter case it might raise the level of the wage rate in the industry in accordance with the increase of labour productivity, and also this might be led to the gradually fostered development of the structure of household economy into a family-firm-farm or even firm-farm.

In short, it has been left to be such a household economy consisting not only of peasantry but of small family trades in towns, and this has been kept going about up to 1955 as a footstool at the base in the development of the Japanese family-monopolist-capitalism. In the following sections, we shall, at first, locate the household economy within a whole economic system, and then shall seek the issue of how to keep the system working effectively.

***2. A system including the household economy without a wage rate**

The structure which includes the household economy in the capitalist economy is constituted of those industries having no fixed wage rate within industries as well as those supplied with it. For simplification, we assume that an isolated country is composed of only two kinds of industry, typified in those with and without a fixed wage rate.

Non-capitalistic producers are ruled by a capitalistic emblem in a economic society which is subject to the capitalistic method of production. The law of equalizing profit rates is considered to be working under such a emblem. Hence, the following two equations of production may be established.

$$(x_{11}P_1 + x_{12}P_2 + M_{1,0})(1 + i_1) + L_1w_1 = X_1P_1 + M_{1,t} \dots \dots \dots (2-1) \text{ Industry with a fixed wage rate}$$

$$(x_{21}P_1 + x_{22}P_2 + M_{2,0} + F_{2,0})(1 + i_2) = X_2P_2 + M_{2,t} + F_{2,t} \dots \dots (2-2) \text{ Industry without a fixed wage rate}$$

x_{ij} = The quantity of a commodity from the j -th sector to the i -th one

P_i = The price of output in the i -th sector

X_i = Output of the i -th sector

$M_{i,0}$ = The stock value of fixed real capital in the i -th sector at the beginning of a period

$M_{i,t}$ = The above value at a term end

$F_{2,0}$ = The family assets value at the beginning of a period⁽¹⁾

$F_{2,t}$ = The above one at a term end

i_i = The rate of profit in the i -th sector

L_i = The quantity of hired labour in the i -th sector

w_i = A fixed wage rate in the i -th sector

These equations are modified from Marxian model of the two sectors or Professor Sraffa's one. The distinctive feature of our model lies in involving the family assets as well as the real fixed capital stock which are deducted from Marxian one for simplification, while in the Sraffa's model only the fixed capital is included.⁽²⁾ The fixed capital $M_{i,0}$, at the beginning of a period, combined at the left hand of equations is left to be remained at the end of a period of production as joint-products in the right-hand of each one, after the depreciation. Furthermore, the family assets are added like in case of fixed capital at either side of each equation in the sector of household economy.

The rates of profit through all industries are deduced from the above equation, as mentioned below.

$$i_1 = \frac{X_1P_1 + M_{1,t} - (x_{11}P_1 + x_{12}P_2 + M_{1,0}) - L_1w_1}{x_{11}P_1 + x_{12}P_2 + M_{1,0}} \dots \dots \dots (2-3)$$

$$i_2 = \frac{X_2P_2 + M_{2,t} + F_{2,t} - (x_{21}P_1 + x_{22}P_2 + M_{2,0} + F_{2,0})}{x_{21}P_1 + x_{22}P_2 + M_{2,0} + F_{2,0}} \dots \dots \dots (2-4)$$

The numerator of the equation (2-3) means profit, not including the working cost, depreciation of fixed capital as well as wagebills from gross production, while the denom-

(1) S. Maruta: "Over-occupied agriculture in Japan," *The Memoirs of Agriculture*, Kagoshima University, Vol. III, No. 2, 1958. pp. 89.

(2) K. Marx: *Das Kapital*, Bd. 21. P. Sraffa: *Production of Commodities by Means of Commodities*, 1960, Chap. 2 and 10.

inator means the real capital stock value at the beginning of a period. A numerator of the equation (2-4) is the amount got by subtracting the depreciation of both fixed capital and family assets as well as circulating capital, from gross product. In the denominator we add the family assets to the real capital.

Provided that we stand, for net production, Y, for real capital, K, including both the circulating capital and the fixed one, the following relation will be deduced from the equations (2-3) and (2-4).

$$Y_i = X_i P_i - (x_{ii} P_i + x_{ij} P_j + \overline{M_{i,0} - M_{i,t}} + \overline{F_{i,0} - F_{i,t}})$$

$$K_i = x_{ii} P_i + x_{ij} P_j + M_{i,0} \quad i, j = 1, 2$$

Then

$$i_1 = \frac{Y_1 - L_1 w_1}{K_1} \dots\dots\dots(2-5)$$

$$i_2 = \frac{Y_2 - (F_{2,0} - F_{2,t})}{K_2 + F_{2,0}} \dots\dots\dots(2-6)$$

Here if we assume that the law of equalization of the rate of profit is valid,

$$i_1 = i_2$$

Namely

$$\frac{Y_1 - L_1 w_1}{K_1} = \frac{Y_2 - (F_{2,0} - F_{2,t})}{K_2 + F_{2,0}} \dots\dots\dots(2-7)$$

Here, the difference between the value of the family assets at the beginning of a period and the one at the ending ($F_{2,0} - F_{2,t}$) is the depreciation for family assets, in other words a factor-cost for the reproduction of it, that is to say, an income out of it, this may be fixed as follows, namely,

$$F_{2,0} - F_{2,t} = d_2$$

Then

$$\frac{Y_1 - L_1 w_1}{K_1} = \frac{Y_2 - d_2}{K_2 + F_{2,0}}$$

$$\left(1 - \frac{L_1 w_1}{Y_1}\right) \frac{Y_1}{K_1} = \left(1 - \frac{d_2}{Y_2}\right) \frac{Y_2}{K_2 + F_{2,0}}$$

Now the rate of a relative share to labour or family assets is to be stood for by r_i .

$$(1 - r_1) \frac{Y_1}{K_1} = (1 - r_2) \frac{Y_2}{K_2 + F_{2,0}} \dots\dots\dots(2-8)$$

If capital-output ratios between both industries are almost equal, then it is to be admitted as an empirical fact,

$$\frac{K_1}{Y_1} \doteq \frac{K_2}{Y_2}$$

$$\therefore \frac{K_1}{Y_1} < \frac{K_2 + F_{2,0}}{Y_2}$$

Accordingly we deduce the following conclusion in order to make the equation (2-7)

keeping.

$$(1-r_1) < (1-r_2)$$

$$\therefore r_1 > r_2$$

Thus a relative share to family assets is necessarily lower than the one to labour in a capitalistic sector, as far as we have household economy in the family sector.

***3. A system including the agricultural household economy**

Peasantry work with a bit of farm land as well as their own family assets, whether they may be owner cultivators or not. Now, if the value of cultivated land is represented by B, an equation for the production of peasantry farming is as follows.

$$(x_{21}P_1 + x_{22}P_2 + M_{2.0} + F_{2.0} + B_{2.0})(1+i'_2) = X_2P_2 + M_{2.t} + F_{2.t} + B_{2.t}$$

$$\therefore i'_2 = \frac{X_2P_2 - (x_{21}P_1 + x_{22}P_2 + M_{2.0} - M_{2.t} + F_{2.0} - F_{2.t} + B_{2.0} - B_{2.t})}{x_{21}P_1 + x_{22}P_2 + M_{2.0} + F_{2.0} + B_{2.0}} \dots\dots(3-1)$$

In that case, as the land itself is indestructible, the value at an ending term remains the same as at the beginning of a certain period, that is to say, $B_{2.0} = B_{2.t}$. Thus in a numerator of a profit rate, the value of land B is cancelled, whilst B is reserved in a denominator. Representing the above equation by simpler symbols,

$$i'_2 = \frac{Y_2 - (F_{2.0} - F_{2.t})}{K_2 + F_{2.0} + B_{2.0}} \dots\dots\dots(3-2)$$

Provided that the law of equalization of the rate of profit is valid,

$$\frac{Y_1 - L_1w_1}{K_1} = \frac{Y_2 - d_2}{K_2 + F_{2.0} + B_{2.0}} \dots\dots\dots(3-3)$$

Here $d_2 = F_{2.0} - F_{2.t}$

$$(1-r_1) \frac{Y_1}{K_1} = (1-r_2) \frac{Y_2}{K_2 + F_{2.0} + B_{2.0}} \dots\dots\dots(3-4)$$

Assuming $\frac{K_1}{Y_1} \doteq \frac{K_2}{Y_2}$, we can accept the following relation.

$$\frac{Y_1}{K_1} \gg \frac{Y_2}{K_2 + F_{2.0} + B_{2.0}} \dots\dots\dots(3-5)$$

$$\therefore 1-r_1 \ll 1-r_2 \quad \text{from relations (3-4) and (3-5).}$$

$$\therefore r_1 \gg r_2 \dots\dots\dots(3-6)$$

Thus a rate of a relative share to the family assets in peasantry household economy will be fixed to be keenly lower than it will be the one to labour in the sector of the capitalistic industry.

The preceding reasonings, combined together, may well enable us to conclude that even the family assets added to a bit of land-ownership-system will not be able to prevent, letting the relative share to family assets be lower than the one which is to be obtained under the capitalist economy.

***4. Statistical Test of our Model**

Before the examination of the law of profit-rate-equalization can be carried out, it is necessary for us to compute each profit-rate in both sectors. The net production or the value added, wage-bills and real capital stock value in the capitalistic sector, can be obtained from the statistics made by the Bank of Japan of *the Corporation Enterprise Survey*. The profit rate obtained in 1957 is as follows.

$$i_1 = \frac{Y_1 - L_1 w_1}{K_1} = \frac{390 - 200}{820} = .23 = (2-5) \dots\dots\dots(4-1)$$

Next, the rate of profit in the non-capitalistic sector can be obtained from the statistics made by the Ministry of the Agriculture and Forestry of the *Agricultural Household Economy*, while the evaluation of a cultivated field is done on the statistics made about the stock value and its rent from the Hypothec Bank of Japan. The stock value of the family assets was calculated through the method of mine devised in former times.⁽³⁾ A depreciation account of the family assets is estimated to be at one thirtieth of it, the period of a family cycle being assumed to be about thirty years. We are going to try four ways in fixing a profit rate; first a denominator of which is real capital itself, secondly it is the one got by the addition of the land-value and thirdly, it is the one got by adding further the stock value of family assets.

$$i_2'' = \frac{Y_2 - d_2}{K_2} = \frac{260 - 60}{640} = .31 \dots\dots\dots(4-2)$$

$$i_2''' = \frac{Y_2 - d_2}{K_2 + B_{2.0}} = \frac{260 - 60}{640 + 520} = .17 \dots\dots\dots(4-3)$$

$$i_2 = \frac{Y_2 - d_2}{K_2 + F_{2.0}} = \frac{260 - 60}{640 + 1800} = .08 = (2-6) \dots\dots\dots(4-4)$$

$$i_2' = \frac{Y_2 - d_2}{K_2 + B_{2.0} + F_{2.0}} = \frac{260 - 60}{640 + 520 + 1800} = .07 = (3-2) \dots\dots\dots(4-5)$$

Accordingly,

$$i_2'' > i_2''' > i_2 > i_2' \dots\dots\dots(4-6)$$

Thus, we can find out that a profit rate of household production without a fixed wage rate by means of real capital itself is highest, while that of both real capital and a cultivated land added together is somewhat lower than the one in the capitalistic sector. Lastly a rate of profit in agricultural household economy by means of real capital, cultivated land and family assets added together is keenly lower than that in the capitalistic sector.

Thus it becomes necessary for us to change our assumption that every rate of profit among industries tends to be equal, in other words, it must be revised on the following point that at least a profit rate in household production will become significantly lower in comparison with a standard level. Besides this, it may happen that in the case when family assets are added in production, the relative share to the family assets may be made

(3) S. Maruta : *op. cit.*, pp. 89ff.

even lower, but, as a profit rate may also be lowered compared with a standard level no definite result may be expected, namely

$$\frac{Y_1 - L_1 w_1}{K_1} \gg \frac{Y_2 - d_2}{K_2 + B_{2.0} + F_{2.0}} \quad \dots\dots\dots(4-7)$$

$$(1 - r_1) \frac{Y_1}{K_1} \gg (1 - r_2) \frac{Y_2}{K_2 + B_{2.0} + F_{2.0}}$$

$$\frac{K_1}{Y_1} \ll \frac{K_2 + B_{2.0} + F_{2.0}}{Y_2}$$

$$1 - r_1 \gg 1 - r_2$$

$$r_1 \ll r_2 \quad \dots\dots\dots(4-8)$$

Generally we have got the result that marginal productivity of family labour is zero or non-significant from zero in Japanese agriculture about before 1955 and also in the peasant economies of underdeveloped countries.⁽⁴⁾ This would mean that it has fixed no specified zero, but indefinite zero in the very agricultural household economy. Thus we may well be allowed to regard it nonsense to require a relative share to family labour, which is a mixed income having the characteristics of it were profit or a quasi-rent.

*5. The Structural change of agricultural household economy

Marginal productivity of family labour in household production without a fixed wage rate designated non-significant difference from zero in 1953 at Kagoshima Prefecture in Japan. But after five years since then, it rose to a very significant value, 180 yen per day, which is equal to the wage rate in the confectionary manufacturing, though that was a minimum wage among all industries, at that time.

It seems to me that family assets, being the heart of agricultural household economy, began, gradually, to break up and grow up into an independent labour force; its character of being an overhead cost has been changing into an opportunity cost, which is to be led to the laying down of farming holidays, a monthly salary system for family members, particularly to the releasing of wives and girls from cultivating labour to devote their hours to house-work, backed up by the use of an agricultural power machinery, especially by power-cultivators.

Provided that, such a situation would be switched back properly into the system of a profit rate, it will be resulted that family assets at a denominator of a profit rate in agricultural household economy would decrease to turn into an independent labour in a numerator. When the degree of breaking up is to be illustrated by a symbol α , this might be endogenously occasioned mainly through mechanization, while exogenously through the increase of employment from a non-agricultural sector. In practice, machinery causes complicated human work to be disjointed into linear and circular motion to be converted

(4) S. Maruta: *op. cit.*, pp. 75 ff.; "The Structural and Dynamic Analysis of Small Peasant Economy under Capitalism," *Bulletin of the Faculty of Agriculture*, Kagoshima Univ., No. 12, pp. 183 ff.; "Over-occupation and -investment in a low income area in Japan," *Memoirs of Agriculture*, Vol. II, No. 1, 1956.

into a homogeneous amount of energy fixed in the frame of time, whilst since the machinery is to be produced in a field of manufacturing industry with a wage rate, the value per hour worked might be led out of the replacement cost, which would be completely broken up to working hours and a wage rate in every industry in advance of the machinery-manufacturing, that is to say that, the moment to lead peasantry work of family assets into a wage rate is the progress of mechanization.

Now, we use the ratio of an hour of machine-power added to the one agricultural man labour as a measure of the degree of mechanization. If this is to be multiplied by a ratio π which converts a power hour into the labour hour, we may obtain a powermachinery-labour-ratio in labour units in terms of a flow-concept, and from it could be derived a measure for a degree of mechanization; as follows.

$$\gamma = \frac{H_m}{L_h} \dots\dots\dots(5-1)$$

$$\pi \cdot \gamma = \frac{L_m}{L_h} = \frac{(L_m w)/w}{L_h} \dots\dots\dots(5-2)$$

$$\alpha = \frac{\pi \cdot \gamma}{1 + \pi \cdot \gamma} = \frac{L_m}{L_h + L_m} \dots\dots\dots(5-3)$$

- H_m : Power hour in use
- L_h : Working hour
- L_m : Power-use-hour converted to working hour
- w : A wage rate

Thus the more power machinery is substituted for man labour, the more family assets will break up and change into the independent labour force.

$$i = \frac{Y_2 - \alpha(L_h + L_m)w}{K_2 + B_{2.0} + (1 - \alpha)F_{2.0}} = \frac{Y_2 - L_m w}{K_2 + B_{2.0} + (1 - \alpha)F_{2.0}} \dots\dots\dots(5-4)$$

For simplification, we assume that a complete breaking-up of family assets were realized; it would happen that only real capital and cultivated land would be left in the denominator of a profit rate. Thus the effect of equalization of profit rates may be ascertained as follows.

$$\frac{Y_1 - L_1 w_1}{K_1} = \frac{Y_2 - L_m w_2}{K_2 + B_{2.0}} \dots\dots\dots(5-5)$$

$$\frac{K_1}{Y_1} \doteq \frac{K_2}{Y_2}$$

$$\therefore \frac{K_1}{Y_1} < \frac{K_2 + B_{2.0}}{Y_2}$$

$$(1 - r_1) \frac{Y_1}{K_1} = (1 - r_2) \frac{Y_2}{K_2 + B_{2.0}}$$

$$\therefore 1 - r_1 < 1 - r_2$$

$$\therefore r_1 > r_2 \dots\dots\dots(5-6)$$

***6. Conclusion**

As peasantry household economy is mechanized consequent on the accumulation of peasantry capital, a relative share into the independent peasantry *labour* will arise, prior to its breaking-up, not only as an emblem but in actuality. That relative share in it, however, will still be lower than that of the capitalistic industry, as long as the private ownership system of land is allowed to exist: the equalization of a relative share in labour between agriculture and non-agriculture might only be derived from the collapse of both household economy and the private ownership system of land.