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# The Prospect of Soviet Economic Policy

by Hiroshi Kato

The purpose of the present study is to make prediction of the Soviet Economy.

- A) Hypothesis 1. Period of analysis, 1962-1970, we assume  $R_{i,60}$  and  $R_{a,60}$ .
  - 2. Output of arms,  $O_m$  grew by 8% (average annual rates of growth) during 1964-1970.
  - 3. O grew by 9% (average annual rate of growth) during 1962-1970.
  - 4. Total labor force grew by average annual rate of growth, 1.6% during 1960-1970. In this present model, L excludes soldiers and household employee from total labor force.

We assume that total of soldiers and household employees are approximately constant at 6.8-7.0 (million persons).

5. We assume that area of cultivation will reach 237.0 (million hectar by 1970.)

Results of estimation (actual figure in 1955 as 100)

왕의 등이 전혀 아름은 생각이 있는 경기를 받는다. 기속, 당기는 아들을 하는 사람들이 말했다면 .	0,	$N_c$	$O_c/N_c$
1960 actual	134.4	128.8	109
estimated from the model	137.8	120.1	115
1966 extrapolated from the model	192.7	171.1	113
1968 extrapolated from the model	213.9	185.4	115
1970 extrapolated from the model	237.2	201.0	118
Evaluation			

According to the simple extrapolation, it seems to be difficult to expect large increase in urban real wages.

#### B) Hypothesis

We assume rate of growth of output of arms after 1964 to be zero and as for the others it is assumed to be the same as in case of simple extrapolation.

Result of estimation (actual figure in 1955 as 100)

	0.	N <sub>c</sub>	O./N.
1966	192.9	158.2	122
1968	214.2	162.8	132
1970	237.8	167.8	142

Evaluation

Compared to the case of simple extrapolation, effect of assuming zero growth rate of output of arms on urban real wages is large.

## C) Hypothesis

We assume investment policy that raises the importance of investment in manufacture and agriculture by cutting investment in tertiary industry and housing to certain extent. Thus such distribution of investment is continued during 1962 to 1970 which is  $R_{i,55}$  and  $R_{a,55}$ . As for others, it is the same as in case of simple extrapolation.

Result of	estimation	0,	N <sub>o</sub>	$O_c/N_c$
1966		197.5	169.5	117
1968		221.1	183.5	120
1970		246.8	198.7	124

Compared to the case of simple extrapolation, rise in  $R_i$  and  $R_a$  seems to have favorable influence on urban real wages. However, it is doubtful if the actual present situation will permit the decrease in investment in tertiary industry or housing.

### D) Hypothesis

Evaluation

In 1961, investment in chemical industry was 11.6 hundred million rubles (assumed) and took 3.2% of the total amount of investment which includes investment in concentrated planning non-concentrated planning, and voluntary investment by colhose. If we estimate the investment in chemical industry until 1970, based on this estimation, relative weight of industrial investment, investment in chemical industry will increase substantially by 1970 even when we assume that total amount of investment will grow at average annual rate of 9%. (If we assume that relative weight of investment in other sectors of industry will not decline.) We assume that this rise in relative weight of industrial investment,  $R_i$  are made possible by the decline in relative weight of agricultural investment. Other assumptions are similar to the case of simple extrapolation.

Result of estimation	0.	$N_{\bullet}$	$O_c/N_c$
1966	189.8	169.1	112

1968	204.9	179.1	114
1970	217.8	188.5	116

#### Evaluation

This estimation is based on the special assumption that drive in investment in chemical industry affects  $R_a$  only. Its effect on urban real wages is worse than in case of simple extrapolation. Assumption of simple extrapolation  $R_{i,60}$  and  $R_{a,60}$  can be considered alternatively that drive in investment in chemical industry sacrifices relative importance of investment in various industrial sectors and treated within  $R_i$ . However, it seems difficult to sacrifice investment in other industrial sectors and it is also difficult to surpress investment in tertiary industry or housing. There may be cases where investment in agriculture will be sacrificed. In this case, if there is a basic change in production function, drive for investment in chemical industry will give adverse effect on urban real wages as in the case of present analysis. But the extent was not as much as it was feared.

Growth model of the Soviet Union (1935-61)

Exogenous variables 7

 $O_{m,t}$ —Output of arms

Oi. Flow of capital goods to final demand sector

 $R_{i,t}$ ,  $R_{i,t-1}$ —Relative weight of investment in manufacture and mining in total investment.

 $R_{a,i-1}$ —Relative weight of investment in agriculture in total investment

 $L_{t-1}$ —Total labor force

 $S_{a,t-1/2}$ —Land (area of cultivation)

 $T_{i-1}$ —Hour (year)

Endogenous variables (14)

O'p,t—Output of mining raw materials and intermidiary producer's goods

Oc. t-Output of consumer's goods

O. Output of mining and manufacture

Ki, - Amount of capital equipment in mining and manufacture

 $K_{a,t-1/2}$ —Amount of capital equipment in agriculture (amount at the end to the year t-1)

 $\Delta K_{i,t}$ —Changes in  $K_{i,t}$  change from the previous year

 $\Delta K_{a,t-1/2}$ —Changes in  $K_a$  from t-1 1/2 to t-1/2 changes from the previous years, estimated at the end of each year.

Oa, t-Amount of agricultural output

M.—Supply of agricultural raw materials to consumer's goods industry (purchased by the government)

N<sub>i,t</sub>-Employment in mining and manufacture

No.t-Employment in non-agriculture

 $L_{a,t-1}$ —Total labor force in agriculture

 $N_{a,t-1/2}$ —Actual employment in agriculture (converted into full time employment in agriculture)

 $Q_{t-1}$ —Ratio between  $L_{a,t-1}$  and  $N_{a,t-1/2}$   $(L_{a,t-1}/N_{a,t-1/2})$  (Predetermined endogenous variables) (three)

$$K_{i,t-1}$$
 $K_{a,t-1^{1}/2}$ 
 $L_{a,t-1}$ 
 $N_{a,t-1/2}$ 
 $O_{,t-1}$ 
 $N_{i,t-1}$ 
 $N_{o,t-1}$ 
One of these

### (Behavioral equation)

① 
$$\log O'_{p,t} = 0.9064 (0.361 \log O_{i,t} + 0.365 \log O_{o,t} + 0.274 \log O_{m,t}) + 0.1980$$

$$\hat{S}$$
=0.03248  $\hat{R}$ =0.9879

(2) 
$$\Delta K_{i,t} = 0.0967 (O_{i,t} \times R_{i,t}) + 0.4659$$

$$\hat{S}=1.704$$
  $\hat{R}=0.9253$ 

③ 
$$\Delta K_{a,t-1/2} = 0.1088 (O_{i,t-1} \times R_{a,t-1}) - 0.0276$$

$$\hat{S}$$
=2.059  $\hat{R}$ =0.9267

(0.289 
$$\log K_{i,t} + 0.711 \log N_{i,t} = 0.7399 \log O_t + 0.5197$$
  
 $\hat{S} = 0.00962$   $\hat{R} = 0.9982$ 

5) 
$$\log O_{a,t} = 1.2550 (0.30 \log S_{a,t-1/2})$$

+0.41 log 
$$N_{a,t-1/2}$$
+0.29 log  $K_{a,t-1/2}$ ) -0.4547  
 $\hat{S}$ =0.02184  $\hat{R}$ =0.9814

6 
$$\log N_{o,t} = 1.1088 \log N_{i,t} = 0.2048$$

$$\hat{S}$$
=0.01327  $\hat{R}$ =0.9939

① 
$$\log M_t = 0.7258 (2 \log O_{a,t} - \log L_{a,t-1}) + 0.5827$$

$$\hat{S}$$
=0.01782  $\hat{R}$ =0.9944

$$\log O_{c,t} = 0.8459 \log M_t + 0.2829$$

$$\hat{S}$$
=0.01473  $\hat{R}$ =0.9955

① 
$$\log Q_{t-1} = -0.2309 \log T_{t-1} + 0.3866$$

### (Definition equation.)

- $0 \log O_{\iota} = 0.162 \log O_{m,\iota} + 0.216 \log O_{\iota,\iota} + 0.214 \log O_{\iota,\iota} + 0.408 \log O'_{p,\iota}$
- ①  $\log N_{a,t-1/2} = \log L_{a,t-1} \log Q_{t-1}$
- ②  $L_{t-1}=0.464 N_{c,t-1}+0.536 L_{a,t-1}$

# Robert Owen and William Godwin (I)

by Atsushi Shirai

Owen's principle of formation of human characters is not original with him, but it follows the school of English empiricism. His thought was influenced by Bentham, Ricardo, Godwin, French encyclopedists, Rousseau and Christian theologians. In this paper I took up the relation with Godwin in particular, and wished to contribute to the understanding of Owen.

His principle of formation of characters is under the influence of Bentham, and as a rational and modern administrator he managed the New Lanark Factory, expressing clearly that he aimed at the money profit for his object. Therefore in this step he had a sympathy with labourers from the position of progressive capitalist. Essentially it can be thought that he tained labourers to establish the rational order of capitalism. From this we can't help doubting his capitalistic character.

In spite of this character, however, we must notice that "A New View of Society" has several keen indications which later critisized against capitalism and formed communistic ideas. I find their buds in his circumstance theory, criticism against egoism and his view of education.

His circumstance theory, though they had some mistakes, found the causes of the miserable state of society in its circumstances and contributed very much to turn peaple's eyes into the contradiction of social system and to give the bright prospect in future. First, he sympathized with poor people, and pointed out as its causes ignorance and scarcity of the productive employment, and criticized the economical aspect of society on the ground of the

brief of high developing productivity. They are not enough of course to criticize against capitalism, but the premises to discuss later the alienation of labour, unemployment by machine, and poverty in abundance are all regarded as appeared in this book.

Next, these social criticism preceded against law, punishment and religion, and thus the fundamental principles to support the present social order were denied. But here their characters relate to class were not analyzed, so he rested in the English constitution system, and stayed in the limit of utopians who hoped that people would be enlightened with good wills of upper class.

Thirdly, he denied the man who acted by the principle of commerce, and denied not only commerce, but egoism in general. He criticized the blind profit-persuing, not for the sole purpose of labour keeping, but for everyman's happiness, general happiness, and thus he already had the tendency for cooperative society. This points made remarkable difference from the classical economists, who premised egoism and apreciated it as the mains motive of production.

Finally, though Owen's view on education was capitalistic, for its purpose to keep excellent labourers and to neutralize class-struggle, he regarded education as a very important tool for social reform. K. Marx apreciated Owen's idea of combining productive labour and education as a way to form "vollseitig entwickelter Mensch," as a bud of education in future. Thus, his view of education, made a ground to create a socialistic idea with his criticism of society, and of egoism.

# A Process of Forming the Concepts of Maximizing Group Welfare (1)

by Tamotsu Matsuura

In contrast to the clearness of concept of maximizing individual welfare, definition of concept of maximizing group welfare is quite ambiguous. One will not deny that this makes the scientific foundation of welfare economics which is based on this concept weak.

The purpose of this study is to make clear how the concept of maximiz-

ing group welfare was formed by studying the works of Pantaleoni, Pareto and Barone who belong to Lausanne School and how concept took the form which is familiar to us today. And we also investigate what sorts of problem emerged in the process of this formation of such concepts. Finally we try to compare and clarify the difference between such concepts and the composition of concepts in Cambridge School as an alternative process of such formation of concept. It is fortunate if we can point out the fundamental limitation of concept of maximizing group welfare.

First let us take Pantaleoni. Schumpeter had mentioned this problem in his book, "History of Economic Analysis" (1954) and pointed out that one of the great achievements by Pantaleoni for the progress of economics is his success in forming concept of maximizing group welfare to certain extent. However Schumpeter did not make clear on what points Pantaleoni succeeded in forming the concept. Therefore we would like to study the works of Pantaleoni on the problem of concept of maximizing group welfare and evaluate his achievements in the history of political economy.

In Pantaleoni's composition of concepts, he bases this concept on maximization of individual welfare in Edgeworth's Mathematical Psychics and tries to expand it to the concept of maximizing group welfare. He criticizes Bentham's crude principle of maximizing group welfare which is "The greatest happiness of the greatest number" and tries to obtain the new concept.

However his effort meets the limitation which is the impossibility of comparing individual utility. Pantaleoni who believed in the presence of psycological marginal utility, clearly knew this limitation nevertheless he could not overcome this limitation. Thus one had to wait for Pareto to establish new concept of maximizing group welfare after he had abandoned marginal utility theory.