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Survey Article

Saving Studies in Economic Development

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The purpose of the present paper is to review the conventional studies on the saving behavior in the developing economies. Theoretical and empirical studies on the saving behavior have not been so actively done on the developing countries as on the developed ones. Collected evidences on the saving behavior in the developing countries are scarce in the following three aspects.

- (1) The sources of saving: The economic behavior of households and individuals in each of rural, urban traditional and modern sectors in the developing countries has not been so intensively observed, mainly because of the less-developed institutional system of official statistics.
- (2) Patterns of financial assets holding: The savings are usually held in different types of financial and physical assets until they are invested. The information is almost null on how people allocate their savings among the types of financial and physical assets in the developing economies.
- (3) Channels of investment: The channels through which the financial assets are converted into investment are neither evident in the developing countries by the same reason.

As the first mile stone of saving studies in the developing countries, we have reviewed Kuznets' observation which pointed out the positive correlation between income level and saving ratio among different levels of development. Kuznets' proposition has invited controversies among development economists.

We have tried to classify the studies which have been included in, and relevant to the controversies into the following disciplines; namely, (1) absolute income hypothesis, (2) permanent income hypothesis, (3) life-cycle hypothesis, and (4) stock adjustment hypothesis. Our survey has covered almost 100 articles, which observed savings across more than 30 developing and 15 developed countries. The average and marginal propensities to save esti-

mated on these countries are summarized on table-22.

Our conclusions on the saving behavior and propensities to save in the developing countries are as follows. i) Saving ratio (average propensity to save) observed seems to increase positively correlating with income level over time in most of the developing countries. ii) With the cross-section data across countries, mostly with the Yearbook of National Accounts Statistics of the U.N., the positive relationship between saving ratio and per capita national income has been recognized with certain significance, but not strictly. iii) The difference of the saving ratio, especially among the developing countries, is explained not only by income but also by other factors, such as growth rate of income, dependency rate or rate of workforce, situation of assets holdings, levels and changes of price, and interest rate. iv) In most cases, saving ratio are lower in less developed countries than in the developed ones, but with some of significant exception like recent tendency in the Republic of Korea.

Non-Walrasian Exchange Process and Optimal Resource Allocation I

by Masao Fukuoka

In a traditional Walrasian general equilibrium model, individual agents trade with the market, not directly with each other. This makes it difficult to analyze the role of money within this class of equilibrium models.

The present paper attempts to reformulate the general equilibrium theory in such a way that it could generate coordinated outcomes even when there exists no Walrasian price adjustment mechanism. We are concerned not with the market but with the acts of individual exchange. Such acts consist of disequilibrium trading as long as successive allocations are Pareto-improving, so that all traders have non-decreasing utility through trading periods.

We consider an n trader, m commodity economy, where there are Q different groups G^1, G^2, \dots, G^Q , each containing exactly k ($< m$) members. As a result of forming G^1 , no member of G^1 is worse off, and if a reallocation is made, at least one member becomes better off. This Edgeworthian process continues with G^2, \dots, G^Q meeting in succession,

after which the round repeats *ad infinitum*.

The main concern of this paper is to provide an improved version of the following two theorems, which were originally put forward in recent time by Graham, Jennergren, Peterson and Weintraub.

(1) Let preference are continuous and strictly convex. Let the class of desired commodities be nonempty, and let it also be possible to reduce the amount of at least one desired commodity to have a non-minimal level of preference. Then the Edgeworthian reallocation process converges to a k -way optimal allocation.

(2) Let the same assumptions be satisfied except that of strict convex preferences. Let preferences be simply convex. Then, if an allocation is n -way optimal, it is overall Pareto optimal.

The Structure of Economic Development (III)

—A Statistical Determination of Economic Fundamental Structure—

by Iwao Ozaki

In this study, we attempt to show empirically that a kind of unchangeable "structure" which had emerged as a result of the adoption of a set of modern technology has been reserved through the period of 1965 to 1975 in the Japanese economy. As is well known, during this period, the Japanese economy achieved a high rate of growth and it appeared that it experienced a large amount of structural change. Nevertheless, if we decompose its structure into the more fundamental and internal factors, that is "the unit structure" which will be defined later, we can observe a very stable configuration in this unit structure, which remains unchanged over time. We call briefly this immutable structural relations "invariant" while the changeable "variant".

Along this line, first, we shall define the concept of the "unit structure" and secondly proceed to the statistical confirmation of the existence of "invariant" appeared in the framework of the unit structure.

In section 4, the definition of "unit structure" is given as follows. Assuming that an

economy is divided into n sectors, the system will be described as follows.

$$(i) \quad AX + F = X$$

where A is input-output coefficient matrix, F is final demand vector and X is gross output vector. If A is non-singular matrix, we obtain next equations.

$$(ii) \quad X = (I - A)^{-1} F \equiv BF$$

where $B = [b_{ij}] = [B_1, B_2, \dots, B_j, \dots, B_n]$; Leontief's inverse matrix,

$B_j = (b_{1j}, b_{2j}, \dots, b_{ij}, \dots, b_{nj})'$; the j th column vector, and

$F = (f_1, f_2, \dots, f_i, \dots, f_n)'$; the final demand vector.

We call the next equations system the "unit system" of the j th sector.

$$(iii) \quad A \cdot \hat{B}_j \cdot e + f_j^* = B_j$$

where

$$\hat{B}_j = \begin{pmatrix} b_{1j} & & 0 \\ & b_{2j} & \\ & & \dots \\ 0 & & & b_{nj} \end{pmatrix}, \quad f_j^* = \begin{pmatrix} 0 \\ 0 \\ \vdots \\ f_j = 100 \\ 0 \\ \vdots \\ 0 \end{pmatrix}, \quad e = \begin{pmatrix} 1 \\ 1 \\ \vdots \\ 1 \end{pmatrix}$$

In this case, we define the next composite matrix

$$(iv) \quad U_{(j)} = [u'_{ij}] \equiv A \cdot \hat{B}_j$$

are the "unit structure" peculiar to the j th sector.

Turning to the statistical test for the stability of these "unit structures", each of which is defined for each sector (commodity), we used the three point Japanese Input-Output Tables, 1965-1970-1975, published by the Japanese Government. These tables are recompiled as mutually compatible and represented in terms of the 1975 constant price.

The results of the test showed that (i) a fundamental configuration appeared in each unit structure remains unchanged over time while (ii) the numerical value observed in each cell of unit structure changes systematically among the different periods. The former corresponds to "invariant" and the latter to "variant". The above findings, that is the reservation of "invariant" in the process of economic changes, will strongly support the existence of a solid inter-sectoral relationship based on a given production technology system.

Occupation Policy and "Treaty of Peace" Policy during the Period from Autumn 1949 to the Korean War

by Kiyoko Imura

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(cf. this journal, Vol. 72, No. 2, 1979 April)

Occupation Policy and "Treaty of Peace" Policy during the Period from Autumn 1949 to the Korean War

Introduction

Introductory Section "From Autumn 1949 to the Korean War"

Section 1 The Development of Occupation Policy and "Treaty of Peace" Policy

Section 2 U.S. Economic Policy towards Japan

From autumn 1949 to the end of 1950, postwar world history changed dramatically. Following the two great incidents of autumn 1949—successful experiment with the atomic bomb by the U.S.S.R. and the establishment of the People's Republic of China—, the Korean War broke out in June 1950. Following these events, the United States moved rapidly to establish the Asian anti-communist military system in which Japan was intended to play a key role.

Thus, the U.S.A.'s chief interest in Japan in this period was military and political, and the central issues were the strengthening of measures to suppress communist power, the creating of the self-defense forces and the signing of "Treaty of Peace With Japan" and "Security Treaty Between Japan And U.S.A."

Economic policy was dictated by these military and political policies. Consequently, although it was clear that the basic policy was to strengthen Japan's capitalist system in order to establish an anti-communist military system in Asia, the concrete substance of

this policy was not necessarily made clear.

This article aims to clarify overall U.S. policy towards Japan during the important period from autumn 1949 to the Korean War, and is by way of an introduction to later articles which I consider the creation of the new and powerful heavy and chemical industries and the beginning of high economic growth in Japan.

La conception des besoins chez le jeune Marx (1)

—La dialectique entre les besoins individuels et les besoins sociaux—

par Akihiro Matoba

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Les besoins, dont nous traitons ici, sont limités au leur propre contenu et sont exclus les «Souhaits» et les «Désirs». La conception des besoins chez le jeune Marx repose sur les relations entre «besoins individuels» et les «besoins sociaux», ce qui signifie les relations sociales entre les individus participant à la production et la reproduction. En ce sens, on peut dire que le jeune Marx s'inspire de la conception de Hegel, mais actuellement, il y a une grande différence entre eux. Cependant que Hegel comprenait que les relations entre les «besoins

individuels» et les «besoins sociaux» étaient harmonieux, Marx propose que ces relations soient opposés sous le régime capitaliste.

En ce cas, les «besoins individuels» signifient des besoins nécessaires pour développer la personnalité de l'individu et les «besoins sociaux» signifient des besoins comme la pression sociale, c'est à dire, les besoins capitalistes, matériels. Sous le système capitaliste, deux sortes de besoins ne résultent que de la contradiction, d'un côté, les «besoins individuels» de le prolétariat s'opposent aux besoins capitalistes, d'un autre côté, les «besoins individuels» s'opposent aux matériels. On nomme la première opposition la lutte des classes et la deuxième, il vaut mieux la nommer besoins de «la révolution quotidienne». En somme, on peut constater que la caractère des besoins chez le jeune Marx est la dialectique entre ceux qui sont «individuels» et ceux qui sont «sociaux».

The Formation and Development of Concept of Household in Pre-War Japan

by Masamichi Uno

Relations between households and families are often complex, for they substantially affect one another.

Therefore, although the analytical distinction between households and families made by several scholars in Japan, the concept of household is still left in a confused state.

However, prior to refining the concept of household, it may be useful to analyze the whole process of its formation during the pre-war period of Japan.

In this paper, I have tried to consider the concepts of household and family in terms of their interconnection.

The Risk Structure of Corporate Borrowing Cost

by Keiichi Omura

This paper involves two models concerned with determining capital assets prices. The one is the option pricing model (OPM), that was submitted by F. Black and M. Scholes in 1972 and then developed by R. Merton. The other is the continuous-time version of the Sharpe-Lintner-Mossin type capital asset pricing model (CAPM).

In Japan, this "option" security is not still introduced, so we cannot use directly the Black-Scholes OPM. But it has already been suggested by Black-Scholes that OPM can be used for the price determination of corporate liabilities. Suppose a firm has two classes of claims, that is, a single, homogeneous class of common stocks and that of discount debts. If, on the maturity date, the value of the firm exceeds the face value of the discount debt, the stock holders will pay off the face value of the debt to buy back the firm from the debt holders. On the other hand, if the value of the firm is less than the face value of the debt, the stock will be valueless. Therefore, we can consider the common stock as a "call option" contingent on the value of the firm. As the total value of the firm equals, by the above assumption, the value of the common stock plus that of the discount debt, the latter can be also considered as a option.

On the other hand, the traditional CAPM has involved only common stocks of various firms as the risky assets and treated the corporate borrowings as non-risky assets. But, the corporate borrowings are also risky assets, for all the private firms have the bankruptcy risk. From this point of view, we expand the traditional CAPM in this paper.

However, when we are examining this expanded CAPM by using the actual financial data, it is difficult to obtain the market price and the variance of the debt value for each firm. Because the borrowing market in Japan is much more imperfect than the stock market. To get over this difficulty, this paper uses Black-Scholes OPM formula to obtain the relation between the systematic risk of the stocks β_s^i and that of the corporate borrowings β_D^i for each firm. As a result, we can represent the risk-return equilibrium of the corporate bor-

rowings as following.

$$\begin{aligned} E(R_D) &= r + \beta_D^i [E(R_M) - r] \\ &= r + \frac{N(-d_1)}{N(d_1)} \cdot \frac{S}{D} \cdot \beta_S^i [E(R_M) - r] \end{aligned}$$

Where $N(d_1)$ is the probability of exercising the option and S/D is equity/debt ratio.

As β_S^i coefficients have been already computed by some stock reserch institutions, we can examine indirectly the risk structure of interest rates on corporate debts by using means of the above equation.

Econometric Studies of Male-Female Labor Demand in Prewar Japan

by Fumiko Mikami

In the past ten years the studies of testing the possibility of substitution among types of labor and between them and capital have been developed in the United States and in Japan. It is generally agreed that, when there are different types of labor inputs, the aggregate production function may not be appropriate. While most of these studies assume that types of labor and capital are independent in the production function, there is suggested an alternative hypothesis that substitution among types of labor may be associated with the employment of capital equipment. The male-female labor demand model of semi-factor-limitational type is one of the specification of this kind, which is written as

$$\begin{aligned} L &= f\left(\frac{L_m}{L_f}, Q\right) & \frac{\partial L}{\partial Q} > 0 \\ K &= g\left(\frac{L_m}{L_f}, Q\right) & \frac{\partial K}{\partial Q} > 0 \end{aligned}$$

where Q is a level of output, L is labor input, K is capital, L_m is male labor and L_f is femal labor. This model has been applied to the case of postwar Japan to support the above hypothesis.

In this paper we further test the validity of this model by using the time-series data of prewar Japan, and show the possibility that female-male labor ratio (L_f/L_m) could have a

negative effect on capital input, holding Q constant, in some industries. In other words, the substitution of female labor for male labor may not always require the increase of capital equipment.

The Development of Trade Unions' Superannuation Benefit in England (2)

by Kazuko Najima

In the previous paper (part one), we tried to describe the beginning and spread of the superannuation benefit by trade unions in England.

Part two shows the amount of the superannuation benefit paid to each old trade union member in the late 19th century, and analyzes to what extent it covered his living expenses after retirement, by comparing with some cases of actual living expenses of old workers in those days. Last, from this analysis, it may be given as a conclusion that the superannuation benefit covered most part of fundamental living expenses.

So, at that time, old trade union members more and more expected the superannuation benefit as one of the main resources after retirement, and regarded it as necessary for their living expenses.

But, with the increase in members receiving the superannuation benefit, most trade unions were obliged to face their financial affairs by the superannuation benefit. One of the reasons was that, unlike other trade union benefits, the superannuation benefit was paid for life. So the cost of the superannuation benefit progressively increased year by year. For that reason, trade union members came to demand public old age pensions to solve this problem. In this way, trade union movement took the first step to establish public old age pensions.