

Copyright Notice

This document is protected by copyright. It is the digitalized form of the printed document:

Donald A. R. George.
Wage-Earner's Investment Funds in the Long Run.
Economic Analysis and Worker's Management, 1, XIX, (1985), 13-28.

The document has been created on May 16, 2011 by

Klaus Hagendorf, Paris.
<http://eurodos.free.fr/mime>

Copyright owner:

INSTITUTE OF ECONOMIC SCIENCES
Administration/Headquarters
Zmaj Jovina 12
11000 Beograd
Republic of Serbia
Tel. +381 11 2623-055, 2622-357
Fax: +381 11 2181-471
email: office@ien.bg.ac.rs
Internet: <http://www.ien.bg.ac.rs>

Copyright © 1985 Institute of Economic Sciences, Belgrade. All Rights Reserved.

je najveći izvor disperzije zarada, dok je racioniranje kapitala najveći pojedinačni izvor stvarnih dohodaka u bilo kom periodu. Tako bi izgledalo da su posle prava na slobodno sticanje dohotka od postojećih fiksnih fondova uvedenog za svako preduzeće 1965. godine, isplate nadnica bile, u najvećoj meri, pod uticajem inicijalnog nivoa kapitalizacije preduzeća. Međutim, s obzirom da se stok kapitala prilagodava mnogo sporije nego takve varijable kao što su dohoci, produktivnost i cene, nije iznenađujuće što su na disperziju dohodaka primarno uticale ove druge varijable. Intuicija jugoslovenskih eksperata da su se arbitrarni sporazumi o kontroli i vrednovanju kapitala morali odraziti na raspodelu dohodaka — bila je u osnovi tačna, ali ti isti eksperti bili su skloni da potcene način na koji se alokacijska neefikasnost može preneti na radničke dohotke i raspodelu dohodaka u samoupravnom sistemu.

WAGE-EARNERS' INVESTMENT FUNDS IN THE LONG RUN

Donald A. R. GEORGE*

ABSTRACT

The proposal, advanced by Keynes in »How to Pay for the War« (1940), for a wage-earners' investment fund has been revived by several West European Governments (Denmark, Sweden, Holland, West Germany) during the 1970's and 1980's. The paper briefly considers the various proposals and develops a Pasinetti-type model of capital accumulation and growth with which to analyse the development of such a fund over time. The implications of the model concerning changes in the distribution of income and wealth are discussed.

I. INTRODUCTION

In »How to Pay for the War« (1940) Keynes advanced a proposal for reducing consumer demand in line with required wartime production patterns. Forced savings out of wages, he argued, would be more equitable than either taxation or inflation financing (see Maital, 1972). Keynes seemed to see wider repercussions of his proposal, suggesting that, »the accumulation of working class wealth under working class control (could induce) an advance towards economic equality greater than any which we have made in recent times«. (Keynes, 1940).

Keynes' suggestions were adopted temporarily and to a much lesser extent than he had originally proposed. During the 1970s, however, various West European governments have advanced similar proposals, none of which have yet been adopted. (Denmark (1973, 1979), West Germany (1974), Holland (1976), and Sweden (1974, 1983)). All these proposals embody the idea of an economy-wide wage-earners' investment fund. Such a fund would accumulate a given fraction of the wage bill or profit

* Department of Economics, University of Edinburgh.

¹ The research on which this paper is based is part of project financed by The Nuffield Foundation and the British Academy. The project involved a period visiting the Institute of Organisation and Industrial Sociology, Copenhagen, for whose hospitality I am most grateful. I am also indebted to Dr. P. G. Hare for helpful comments on an earlier draft of this paper. Any remaining errors or omissions are entirely my own.

Since the completion of this article the Swedish Government has implemented its 1983 plan for a wage-earners' investment fund.

bill on behalf of wage-earners' and would issue non-negotiable fund certificates to them. At a specified time these certificates could be redeemed at a price which would include the share of that certificate in the original fund contribution, plus all relevant capital gains and dividends. The fund's managers would be permitted to purchase or sell any shares they wished, though they may be required to retain a certain pre-determined stake in the companies which had made the original contribution. The fund could be administered by the government, trades unions, independent managers or a combination of these. Such a scheme would serve the dual purpose of giving labour a share in the profits accruing to shareholders and of stimulating codetermination, via the various rights inherent in share-ownership.²

The proposals so far advanced require either: (i) a proportion of the wage-bill should be accumulated or: (ii) a proportion of the profits-bill should be accumulated. Following Brems (1975, a, b, c) the former arrangement will be referred to as an *investment wage*, the latter as *profit-sharing*.

The Danish 1973 proposal (Danish Government, 1973) was advanced by the Social Democratic Party and the Danish LO.³ It is an investment wage scheme in which the contribution fraction would rise from 1/2% to 5% in steps of 1/2% per year. The redemption period would be seven years (though the trades unions wanted a five year redemption period). Two thirds of each contribution would be made in equity, to be retained as such,⁴ while the remainder (the so-called «free resources») would be in cash. This cash component could be invested at the discretion of the fund's management council, consisting of 36 members appointed by employee organisations and 24 members appointed by the Minister of Labour.

The fund would not be permitted to hold more than 50% of the equity of any single enterprise.

This proposal was rejected by the Danish Parliament and a revised version was advanced in 1979/80. It would introduce a profit-sharing arrangement with a maximum contribution fraction of 10%.

The Dutch (1976) proposal was for a profit-sharing scheme with a maximum contribution fraction of 20%. Contributions would, for the most part, take the form of equity. Part of each fund certificate would be redeemable after a 7–10 year period and part on retirement.

The West German (1974) scheme differs from those described above in that it would institute a system of multifirm funds, not confined to a particular industry or region, amongst which individuals would have freedom of choice. The scheme would be a profit-sharing system with a maximum contribution fraction of 10%.

Wage-earners' funds were the major issue in the 1982 Swedish general election and it is likely that a proposal for such a fund will come

² This type of arrangement is known as «Lønmodtagernes Medejendomsret» in Danish: usually translated as «Wage-earners' co-ownership».

³ Landsorganisationen — The Danish «TUC».

⁴ Analogous arrangements would be made for non-jointstock companies.

before the Swedish Parliament during 1983. (See Meidner (1978) for a survey of the Swedish debate.)

It should be noted that all these proposals are *economy-wide* and not confined to a single enterprise. Compulsory enterprise-level profit sharing schemes have existed in France since 1967 for firms with over 100 employees (French Government 1975, 1978). West German enterprise-level schemes have been stimulated by means of tax concessions since 1961 and now approximately two-thirds of West German wage-earners are participating. A variety of different schemes have been promoted in the United States, again by means of tax concessions, though they involve far fewer workers than in West Germany (Joint Economic Committee, 1976).

Opponents of the central fund idea have suggested that enterprise-level schemes are to be preferred. They need not involve any element of compulsion (though in the French case they do) and they would perhaps give individual wage-earners a greater interest in the success of their particular enterprises. However, a central fund would have the advantage of pooling risks and would probably be less costly to administer. Under central fund proposals all wage-earners would receive, each year, a certificate of equal value, regardless of the size of original contributions. Such an arrangement would presumably have implications for the personal distribution of income which would not apply to enterprise level schemes.

A major object of the paper is to investigate how a wage-earners' investment fund is likely to grow or decline over time and its likely impact on the distribution of income. Estimates for the Danish 1973 proposal (Danish Government, 1973) suggest that after eight years the fund would own 10% of total share capital and after 15 years, 35%. (It should be noted that this scheme reaches its maximum contribution fraction after 10 years and begins to pay redemptions after seven years). The paper also investigates the effects of varying two important «policy parameters», the contribution fraction and the redemption period. Part II of the paper is concerned with constructing a simple Pasi-netti-type model within which these questions can be analysed. Part III deals with an investment-wage scheme and Part IV with a profit-sharing scheme. Part V concludes.

II. A SIMPLE MODEL

Central funds of the type described above are analysed by Brems (1975 a, b, c) in the framework of a simple neoclassical, steady-state growth model. (See also Kristofferson (1981) for a theoretical discussion of wage-earners' funds). The structure of Brems' model enables the steady state level of the fund to be determined but does not permit the development of the fund *through time* to be analysed. To circumvent this, and other, disadvantages of the neoclassical approach,

⁵ Excepting the possibility of certificates being redeemed at retirement or death.

this paper adopts a simple Pasinetti-type model (Pasinetti 1962, 1974) of capital accumulation and growth. The model reflects a world in which adequate investment is carried out to fully employ a labour force growing exogenously at a constant rate (n). Any technical progress is Harrod-neutral and can therefore be subsumed in growth of the labour force. The capital stock (K) is owned either by business corporations (K_c) or, through share ownership, by the wage-earners' investment fund (K_w). No consumption occurs out of business income and, following Pasinetti, the distribution of income is assumed to adjust so as to ensure macroeconomic equilibrium. We abstract from depreciation of the capital stock. One could permit depreciation and a small degree of consumption out of business income without substantially altering the conclusions of the analysis.

National income (Y) either takes the form of wages (W) or profits (P):

$$Y = W + P = wL + iK \quad \begin{matrix} (w = \text{real wage rate} \\ i = \text{real profit rate}) \end{matrix} \quad (1)$$

Technology is of the fixed proportions variety:

$$Y = \min(aK, bL) \quad (2)$$

In the Pasinetti-world described above, labour, capital and output all grow at the exponential rate n and the capital/labour ratio remains

constant at $\frac{b}{a}$ ($= \rho$). Thus

$$\begin{aligned} aK &= wL + iK \\ \Rightarrow w &= (a - i) \cdot \rho \end{aligned} \quad (3)$$

Equation (3) is a factor-price-frontier and it is clear that macroeconomic equilibrium is ensured by movements along this frontier. In addition, fund managers are assumed to make the same rate of return (i) on their part of the capital stock as business corporations do on theirs.

It will be assumed that workers have a constant average propensity to consume (c_w) which is the same for wage income as for redemption income. It can easily be seen that this assumption will ensure that the workers' share in national income is unaffected by the presence of central fund arrangements. Let Y_w , Y_f and Y_c be the incomes of workers, the fund and capitalists respectively. (Income shares will be denoted: $Y_w = Y_w/Y$, $Y_f = Y_f/Y$, $Y_c = Y_c/Y$). Then macroeconomic equilibrium requires

$$\begin{aligned} \text{investment} &= \text{savings} \\ \Rightarrow nK &= Y - c_w Y_w \\ &= aK - c_w Y_w \end{aligned}$$

$$\Rightarrow (a - n)K = c_w Y_w$$

$$\Rightarrow \frac{(a - n)}{a \cdot c_w} = y_w$$

Thus the workers' share in national income is determined by parameters independent of the central fund. The analysis of the fund's and the capitalists' shares in national income is more complex and is dealt with in the following two sections.

In most proposals actually advanced, the contribution fraction would increase linearly over the first few years (say T years) of the fund's life to a maximum (α^*). It will be assumed throughout the paper, that all redemptions occur after T years and are the fully accumulated value of original contributions. Thus it is not until time $T + T$ that fund contributions and redemptions are based on the same contribution fraction (see fig. (1)). This paper deals with the development of the fund in the long run, that is at times after $T + T$. (Note that in the Danish 1973 proposals $T = 10$ and $\alpha^* = 5\%$. The minimum period over which fund certificates could be held was seven years, so assuming all certificates are cashed in as soon as possible, $T = 7$)

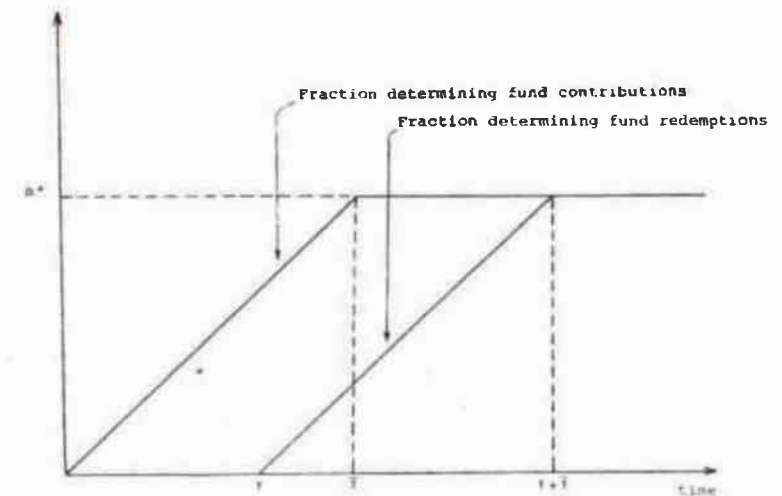


Fig. 1

III. AN INVESTMENT-WAGE SCHEME

It will be assumed that a fixed proportion (γ) of the wage bill is contributed to the fund every year. National income accounting under this type of scheme appears as follows:

$$\left. \begin{aligned} Y_w &= W + R - B \\ Y_f &= B - R + P_f \\ Y_c &= P_c \end{aligned} \right\} \Rightarrow Y = W + P_f + P_c = W + P \quad (4)$$

(R = fund redemptions, B = fund contributions, P_f = profits paid to fund, P_c = profits retained by business corporations.) Assume that a constant proportion (C_w) of workers' income, net of fund contributions, is consumed. The macroeconomic equilibrium condition requires that income shall be distributed in such a way as to generate enough savings to exactly offset the given level of investment. In the long run, redemptions will be accumulated at the current profit rate and the macroeconomic equilibrium condition can be written as follows:

$$\begin{aligned} \text{investment} &= \text{saving} \\ \Rightarrow nk &= Y - C_w Y_w \\ &= Y - C_w (W + R - B) \end{aligned}$$

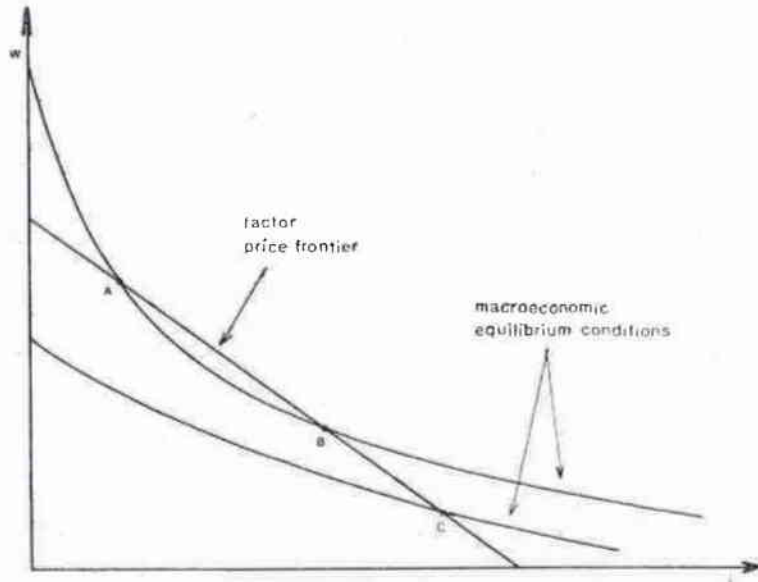


Fig. 2.

$$\begin{aligned} &= aK - C_w (wL + \gamma wL e^{(1-n)t} - \gamma wL) \\ \Rightarrow w &= \frac{(a-n)\rho}{C_w(1-\gamma+\gamma e^{(1-n)t})} \quad (5) \end{aligned}$$

In the absence of the investment wage scheme ($\gamma = 0$) the real wage rate is therefore given by:

$$w^* = \frac{(a-n)\rho}{C_w} \quad (6)$$

Equation (5) must be combined with the factor price frontier (equation (3)) to locate equilibria of the system. Figure 2 shows that there may be two equilibria or a single equilibrium, depending on the values of the parameters. Equilibrium values of i and w will henceforth be labeled i_e and w_e .

Consideration must now be given to the question of stability. The stability mechanism involved here is the one suggested by Kaldor (1955-6) and Pasinetti (1962, 1974). Consider a small increase in the wage rate at an equilibrium such as B (or C) in figure 2. By redistributing income towards labour, aggregate demand is increased, with supply fixed. This raises prices, lowering the real wage rate and improving profit margins, thereby forcing the system back towards its equilibrium. By a

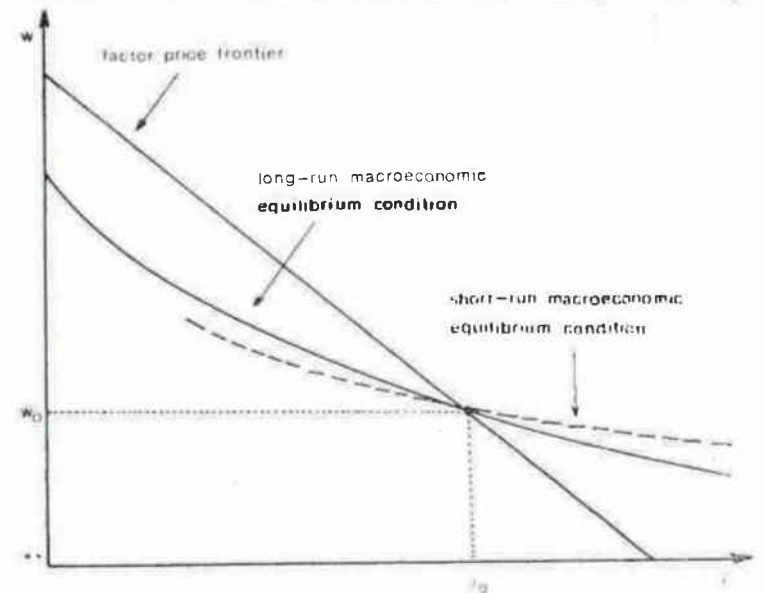


Fig. 3.

similar argument an equilibrium such as point A can be shown to be unstable. Thus the system has exactly one stable equilibrium. In the short run, it should be noted, the macroeconomic equilibrium locus will be shallower than for the long run (see figure 3), because a lower profit rate has less impact on redemptions in the short run than in the long run.

Consideration will now be given to the way in which the share of the fund in the total capital stock varies over time. Define $k_r = K_r/K$, the share of the wage-earners' fund in the total capital stock.

We have:

$$\begin{aligned} \dot{K}_r &= B - R + P_r \\ &= B - R + i_r K_r \\ &= \gamma w_o L - \gamma w_o e^{(i_o - n)T} L + i_o K_r \\ &=> \dot{k}_r = \frac{\gamma w_o}{\rho} (1 - e^{(i_o - n)T}) + (i_o - n) k_r \end{aligned} \quad (7)$$

$$\text{Clearly } k_r^* = \frac{\gamma w_o (1 - e^{(i_o - n)T})}{\rho (n - i_o)} \quad (8)$$

is a zero of equation (7).

Moreover w_o and i_o satisfy equation (5) which can therefore be used to eliminate w_o from equation (8) giving:

$$k_r^* = \gamma \left(1 + \frac{a - n}{n - i_o} \right) (1 - e^{(i_o - n)T}) \quad (9)$$

It is clear from equation (7) that if $i_o < n$ then:

$$k_r \rightarrow k_r^* \text{ as } t \rightarrow \infty$$

but if $i_o > n$ then:

$$\begin{cases} k_r \rightarrow 1 \text{ as } t \rightarrow \infty \text{ if } k_r > k_r^* \text{ at time } T + \bar{T} \\ k_r \rightarrow 0 \text{ as } t \rightarrow \infty \text{ if } k_r < k_r^* \text{ at time } T + \bar{T} \end{cases}$$

Thus for low rates of profit ($i_o < n$) the share of the fund in the capital stock tends towards an equilibrium value. For high rates of profit ($i_o > n$) instability manifests itself. If the share of the fund in the total capital stock is above a certain threshold value at time $T + \bar{T}$, the fund

will eventually own the entire capital stock. If the share of the fund is below that threshold at time $T + \bar{T}$, the fund will eventually shrink to zero.

In the stable case, where k_r converges to k_r^* , it would be interesting to know how k_r^* is related to the «policy parameters», γ and T . From equation (5) it is clear that, when $i_o - n < 0$ raising γ or T shifts the macroeconomic equilibrium locus upwards, raising the equilibrium wage rate and lowering the equilibrium profit rate, that is:

$$i_o - n < 0 => \frac{di_o}{d\gamma} > 0, \quad \frac{di_o}{dT} < 0 \quad (10)$$

Equation (9) is reproduced below:

$$k_r^* = \gamma \left(1 + \frac{a - n}{n - i_o} \right) (1 - e^{(i_o - n)T}) \quad (11)$$

$$\text{Now } \frac{dk_r^*}{d\gamma} = \frac{\partial k_r^*}{\partial \gamma} + \frac{\partial k_r^*}{\partial i_o} \frac{di_o}{d\gamma}$$

Evidently $\frac{\partial k_r^*}{\partial \gamma} > 0$, by inspection of (11), so it remains to deter-

mine the sign of $\frac{\partial k_r^*}{\partial i_o}$. Equation (11) gives:

$$\begin{aligned} \frac{\partial k_r^*}{\partial i_o} &= \gamma \left\{ \left[\frac{n - a}{(n - i_o)^2} \right] (1 - e^{(i_o - n)T}) - \right. \\ &\quad \left. \left[1 + \frac{a - n}{n - i_o} \right] T \cdot e^{(i_o - n)T} \right\} \end{aligned} \quad (12)$$

$$\text{Hence, by inspection, } \frac{\partial k_r^*}{\partial i_o} < 0 \quad (13)$$

Thus:

$$i_o - n < 0 => \frac{dk_r^*}{d\gamma} > 0 \quad (14)$$

Similarly:

$$\frac{dk_r^*}{dT} = \frac{\partial k_r^*}{\partial T} + \frac{\partial k_r^*}{\partial i_0} \frac{di_0}{dT}$$

and

$$\frac{\partial k_r^*}{\partial T} > 0, \text{ by inspection. So combining (10) and (13) we have:}$$

$$(i_0 - n) < 0 = > \frac{dk_r^*}{dT} > 0 \quad (15)$$

Thus, in the stable case, k_r^* is the higher the greater is the contribution and the longer is the redemption period.

It was shown above that the workers' share of national income, with or without the central fund arrangements, would be given by:

$$y_w = \frac{a - n}{a \cdot c_w} \quad (16)$$

Attention is now turned to the fund's and the capitalists' shares. We have:

$$\begin{aligned} Y_f &= B - R + P_f \\ &= \gamma w_0 L - \gamma w_0 e^{(i_0 - n)T} L + i_0 K_f \\ &=> y_f = Y_f/Y = \frac{\gamma w_0}{b} (1 - e^{(i_0 - n)T}) + \frac{i_0 k_f}{a} \end{aligned} \quad (17)$$

Moreover:

$$\begin{aligned} y_c &= P_c = i_0 K_c \\ &=> y_c = \frac{i_0}{a} (1 - k_f) \end{aligned} \quad (18)$$

Thus the development of income shares over time depends on the development of k_f . As k_f increases, the fund improves its income share at the expense of the capitalists.

IV. A PROFIT-SHARING SCHEME

It is assumed that a fixed proportion (β) of the profitbill is contributed annually to the fund. Redemption occurs as in the investment-wage scheme described above. National income accounting under a profit sharing scheme appears as follows:

$$\left. \begin{aligned} Y_w &= W + R \\ Y_f &= B - R + P_f \\ Y_c &= P_c - B \end{aligned} \right\} \Rightarrow Y = W + P_c + P_f \quad (19)$$

$$\begin{aligned} \Rightarrow \text{investment} &= \text{savings} \\ nK &= Y - c_w Y_w \\ &= Y - c_w (W + R) \\ &= aK - c_w (wL + \beta iK e^{(i-n)T}) \\ &= \frac{(a - n - c_w \beta i e^{(i-n)T}) \rho}{c_w} \end{aligned} \quad (20)$$

Note again that in the absence of the scheme ($\beta = 0$) the wage rate is given by

$$w^* = \frac{(a - n) \rho}{c_w} \quad (21)$$

The possible equilibria are illustrated in figure 4 and again the Kaldor-Pasinetti stability mechanism ensure a single stable equilibrium.

Turning now to the development of the fund over time, we have

$$\begin{aligned} \dot{K}_f &= B - R + i K_f \\ &= \beta i K - \beta i K e^{(i-n)T} + i K_f \\ \Rightarrow \dot{k}_f &= \beta i (1 - e^{(i-n)T}) + (i - n) k_f \end{aligned} \quad (22)$$

From (22) the development of the fund through time can be seen to follow a pattern similar to that obtaining under the investment wage scheme. Evidently:

$$k_f^{**} = \beta \left(\frac{n}{n - n_i} - 1 \right) (1 - e^{(i-n)T}) \quad (23)$$

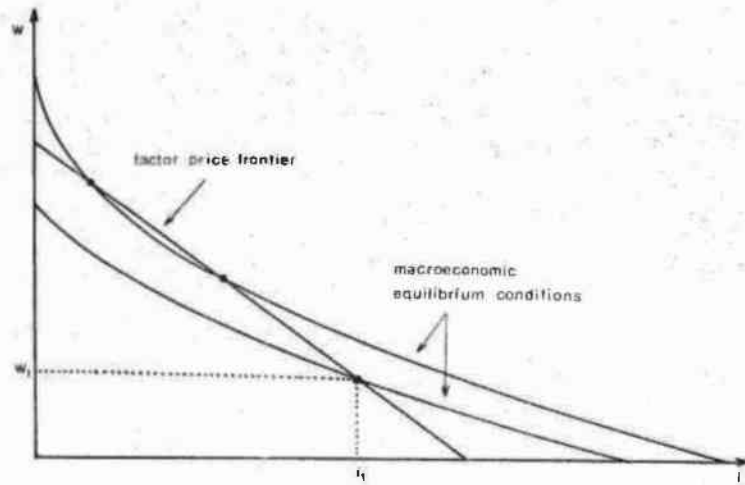


Fig. 4

is a zero of (22). If $i_1 < n$ then $k_r \rightarrow k_r^{**}$. If $i_1 > n$ then $k_r \rightarrow 0$ if $k_r < k_r^{**}$ initially, and $k_r \rightarrow 1$ if $k_r > k_r^{**}$ initially. Again, at low rates of profit ($i_1 < n$) the share of the wage earners' fund in the total capital stock settles at an equilibrium value. For high rates of profit ($i_1 > n$) the instability property described above manifests itself and again the ultimate development of the fund would depend critically on its progress during the first few years of its life.

Consideration is now given to the effects of altering β and T in the stable case where $k_r \rightarrow k_r^{**}$. From equation (20) it is clear that, when $(i_1 - n) < 0$ raising β shifts the macroeconomic equilibrium locus downwards, raising the equilibrium profit rate and lowering the equilibrium wage rate. Raising T has the opposite effect. That is:

$$i_1 - n < 0 \Rightarrow \frac{di_1}{d\beta} > 0, \frac{di_1}{dT} < 0 \tag{24}$$

Equation (23) is reproduced below:

$$k_r^{**} = \beta \left(\frac{n}{n - i_1} - 1 \right) \cdot (1 - e^{(i_1 - n)T}) \tag{25}$$

Now:

$$\frac{dk_r^{**}}{d\beta} = \frac{\partial k_r^{**}}{\partial \beta} + \frac{\partial k_r^{**}}{\partial i_1} \frac{di_1}{d\beta}$$

Evidently $\frac{\partial k_r^{**}}{\partial \beta} > 0$ by inspection of (25) so it remains to de-

termine the sign of $\frac{\partial k_r^{**}}{\partial i_1}$

Equation (25) gives:

$$\frac{\partial k_r^{**}}{\partial i_1} = \beta \left(\frac{-n}{(n - i_1)^2} (1 - e^{(i_1 - n)T}) + \left(\frac{n}{n - i_1} - 1 \right) \cdot (-Te^{(i_1 - n)T}) \right)$$

Hence, by inspection:

$$\frac{\partial k_r^{**}}{\partial i_1} < 0 \tag{26}$$

Thus, the sign of $\frac{dk_r^{**}}{d\beta}$ is indeterminate

Similarly:

$$\frac{dk_r^{**}}{dT} = \frac{\partial k_r^{**}}{\partial T} + \frac{\partial k_r^{**}}{\partial i_1} \frac{di_1}{dT}$$

and $\frac{\partial k_r^{**}}{\partial T} > 0$, by inspection of (25). Thus from (24) and (26) we

have

$$\frac{dk_r^{**}}{dT} > 0 \tag{27}$$

Thus k_r^{**} is the higher, the longer is the redemption period. However, the effect of raising the contribution fraction is indeterminate.

Turning now to income shares, we have:

$$\begin{aligned}
 Y_r &= B - R + P_r \\
 &= \beta i_r K - \beta i_r K e^{(i_r - n)T} + i_r K_r \\
 \Rightarrow y_r &= \frac{\beta i_r (1 - e^{(i_r - n)T})}{a} + \frac{i_r k_r}{a} \quad (28)
 \end{aligned}$$

Capitalists' income is given by

$$\begin{aligned}
 Y_c &= P_c - B \\
 &= i_r K_c - \beta i_r K \\
 \Rightarrow y_c &= \frac{i_r}{a} (k_c - \beta) \quad (29)
 \end{aligned}$$

Thus the fund's share of national income rises with its share of the capital stock, at the expense of the capitalists. Note that capitalists' share of national income would be driven to zero if k_c were forced down to equal β .

V SUMMARY

Keynes' (1940) proposal for a wage-earners' investment fund has been resurrected during the 1970's and 1980's by various European governments. Such a scheme could take the form of an investment-wage or of profit-sharing. Both types of scheme entail a central investment fund and must be clearly distinguished from the enterprise-level type of arrangement often proposed as an alternative.

Analysis of the proposals within the framework of a Pasinetti-type model suggests:

(i) With low profit rates ($i_r, i_r < n$) the share (k_r) of the fund in the total capital stock would tend to a value which is greater, the longer is the redemption period. Under an investment wage, a higher contribution fraction entails a higher value for equilibrium k_r .

(ii) With high profit rates ($i_r, i_r > n$) there exists a threshold value for k_r . The ultimate development of the fund depends critically on its early life. If, during the initial period it comes to own a share of the total capital stock in excess of this threshold it will eventually own the whole capital stock, unless prevented by legislation from doing so. (The Danish 1973 proposal, for example, suggested an upper limit of 50% for k_r). Otherwise, it will eventually decline to zero.

(iii) Neither an investment-wage nor a profit-sharing scheme would influence labour's share in national income. In both cases, however,

when the fund's share of the capital stock increases, the fund's share of national income increases at the expense of the capitalists.

Received 25. 07. 1984.

Revised 10. 12. 1984.

REFERENCES

- BREMS, H. (1975, a) A Wage Earner's Investment Fund — Forms and Economic Effects. Stockholm.
- BREMS, H. (1975, b) »Profit Sharing and a Wage Earner's Investment Fund under Steady-State Growth«, *Kyklos*, vol. 28, pp. 94—116.
- BREMS, H. (1975, c) »An Investment Wage and a Wage Earner's Investment Fund under Steady-State Growth« *Swedish Journal of Economics*, Vol. 77 pp. 13—30.
- DANISH GOVERNMENT ARBEJDSMINISTERIET (KØBENHAVN) (1973) »Forslag til lov om lønmodtagernes medejendomsret« (Lovforslag nr. 168) Copenhagen.
- DET ØKONOMISKE RÅD, FORMANDSKABET (1972) »Økonomisk demokrati i samfundsøkonomisk belysning« Copenhagen.
- DUTCH GOVERNMENT (1978 a) »Wet op de vermogensaanwasdeling« (Proposal No. 15007).
- DUTCH GOVERNMENT (1978 b) »Interimwet belasting op vermogensaanwas en collectieve vermogensaanwasdeling« (Proposal No. 15316).
- FRENCH GOVERNMENT (1975) (La documentation française) »Rapport du comité d'étude pour la réforme de l'entreprise («The Sudreau report») Paris.
- FRENCH GOVERNMENT (1978) (La documentation française) »Rapport sur l'épague les fonds propres des entreprises et les régimes d'actionariat et de participation« («The Delouvrier report») Paris.
- JOINT ECONOMIC COMMITTEE (Congress of the U.S) (1976) »Broadening the Ownership of New Capital: ESOP'S and Other Alternatives« Washington DC.
- KALDOR, N. (1955-6) »Alternative Theories of Distribution« *Review of Economic Studies* (1955-6).
- KEYNES, J. M. (1940) How to Pay for the War. London 1940.
- KRISTOFFERSSON, A. (1981) Löntagarna och Kapitaltillväxten 7 SOU (1981: 79), Stockholm.
- LØNMODTAGERNES MEDEJENDOMSRET (1978) Rapport fra udvalget om lønmodtagernes medejendomsret. Copenhagen.
- MAITAL, S. (1972) »Inflation, Taxation and Equity: How to pay for the War Revisited« *Economic Journal* 82, pp. 158—169.
- MEIDNER, R. (1978) Employee Investment Funds: An Approach to Collective Capital Formation. George Allan and Unwin, London.
- OECD (1970) »Workers Negotiated Savings Plans for Capital Formation« OECD Paris.
- PASINETTI, L. L. (1984) Growth and Income Distribution. Cambridge University Press.

- PASINETTI, L. L. (1962) »Rate of Profit and Income Distribution in Relation to the Rate of Economic Growth«. *Review of Economic Studies*.
- ROBINSON, D. (1983) »Income Policy and Capital Sharing in Europe«. New York.
- STAHLBERG, A.—C. (1980) »Effects of the Swedish supplementary pension system on personal and aggregate household saving«. *Scandinavian Journal of Economics*.
- VANEK, J. (1965) Workers' Profit Participation, Unemployment and the Keynesian Equilibrium. *Weltwirtschaftliches Archiv*. Vol. 94.
- WEST GERMAN GOVERNMENT (Der Bundesminister für Arbeit und Sozialordnung) (1977) »Einkommens — und Vermögens — Verteilung 1977«. Bonn.

ECONOMIC ANALYSIS AND WORKERS' MANAGEMENT, 1, XIX (1985), 29—63

THE RELATIONSHIP BETWEEN THE LEVEL OF DEVELOPMENT AND THE RATE OF GROWTH: SOME EMPIRICAL EVIDENCE

Sanja CRNKOVIĆ-POZAIĆ*

DUGOROČNI INVESTICIONI FONDOVI RADNIKA

Donald A. R. GEORGE

R e z i m e

Predlog Kejnso, koji datira iz 1940. godine u vezi investicionog fonda radnih ljudi, ponovo je pobudio interes mnogih evropskih vlada u toku sedamdesetih i osamdesetih godina ovog veka. Takva shema mogla bi da poprimi oblik investicione plate ili podele dobiti. Obe vrste sheme uključuju centralni investicioni fond, koji se jasno mora razlikovati od tipa aranžmana na nivou preduzeća što se često predlaže kao alternativa.

Analiza predloga u okviru modela-tipa Pasineti ukazuje na sledeće:

(i) Sa niskim stopama dobiti ($i, i < n$) deo (k_r) fonda u ukupnom akcionarskom kapitalu teži ka vrednosti koja je veća što je duži period iskupljenja. Sto se tiče sheme investicionih plata veći doprinosni razlomak uključuje višu vrednost za ekvilibrium k_r .

(ii) Sa visokim stopama dobiti ($i, i > n$) postoji prag vrednosti za k_r . Krajnji razvoj fonda presudno zavisi od njegove početne faze. Ako se u početku desi da fond poseduje deo ukupnog akcionarskog kapitala veći od ovog praga, onda će konačno posedovati čitav akcionarski kapital, sem ukoliko to onemogućava zakonodavstvo. (Danski predlog iz 1973. godine, na primer, nagovestio je gornju granicu od 50% za k_r .) U suprotnom slučaju, on će konačno opasti na nulu.

(iii) Ni shema investicione plate ni shema podele dobiti ne bi uticale na udeo rada u nacionalnom dohotku. U oba slučaja, međutim, kada se deo fonda akcionarskog kapitala poveća, deo fonda nacionalnog dohotka se poveća na teret kapitalista.

The primary objective of this paper is to test the hypothesis that countries have varying rates of growth in the course of their development. This hypothesis has its origins in the writings of W. W. Rostow (1960) who proposed a scenario of development which includes five distinctive stages of development. Each stage is characterized, apart from other factors, by different rates of growth. In the first two stages, these rates are very low, reflecting the stagnant nature of these economies. From the point of view of technological development these countries rank very low, with accompanying low levels of labour productivity, as well as a very undifferentiated division of labour based entirely on traditionally determined roles.

The creation of pre-conditions for take-off in the second stage of development is the necessary, albeit the most weakly argued, overture to the stage where rates of growth become buoyant upwards and break away from the prevalent secular trend. This stage, the take-off, forms the nucleus of Rostow's theory and we propose to test its validity using conventional statistical and econometric tools.

Apart from seeing how present developing countries measure up to this theory of high growth rates, we intend to test Rostow's further contention that on reaching a certain level of development countries pass into the stage of maturity and consequently into the stage of high mass consumption, which is in turn characterized by lower rates of growth. We shall not dwell needlessly on the merits of this theory. It has been widely criticized, with most of the criticism focusing on the lack of an acceptable mechanism which propels countries through the various stages. The theory appears to be highly eurocentric: it attempts to transplant a unique experience all over the globe with no regard to the circumstances in which this development is taking place today, which are very different from those prevailing in 17th century Europe.

However, notwithstanding the »merits« of the theory there are at least two reasons why its validity has to be tested. Firstly, the concept of stages of development has found its way into the way of thinking

* Institute of Economics, Zagreb