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Aleksandra POŠARAC

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EXPLANATIONS OF EARNINGS IN YUGOSLAVIA: THE CAPITAL AND LABOUR SCHOOLS COMPARED[1]

*Saul ESTRIN**
*Jan SVEJNAR***

1. INTRODUCTION

The primary aim of this paper is to test alternative explanations of earning in Yugoslav firms, with reduced form wage equations being estimated in the absence and presence of capital rationing. The two capital supply regimes are distinguished so that we can discern between the competing contentions in the Yugoslav literature that earnings differentials are the result of disturbances and imperfections which are transmitted by the system of self-management per se or are a direct consequence of capital rationing by the authorities. In estimating the wage equations on Yugoslav data, we can therefore offer preliminary evidence on whether income dispersion is a systemic problem in a labour-managed economy because of the weakness of labour market forces or is merely a consequence of capital rationing by the authorities.

Although the growing theoretical literature on labour-managed firms [see Vanek (1970), Ireland and Law (1982)] has strong implications about the determination of earnings, empirical studies of earnings rely on relatively ad hoc formulations of the estimating equations [see Wachtel (1972), Vanek and Jovičić (1975), Estrin, Svejnar and Mow (1983)]. This is a particularly serious deficiency in the Yugoslav context where inter-firm wage differentials are sufficiently large to suggest that income determination could be a fundamental policy issue [see Estrin (1981) and (1983)].

Most labour-management models assume that workers' earnings are endogenous. From this perspective, any factors which cause profit differences under capitalism must generate inter-firm wage inequalities under labour-management because the workers appropriate the residual

* Department of Economics, London School of Economics.
** Department of Economics, Cornell University and Core, Université Catholique de Louvain.

[1] This paper is one in a series on Yugoslav wage determination. See also Estrin, Svejnar and Mow (1983) for a critical treatment of the traditional empirical literature in this field and Estrin and Svejnar (1983) for the theoretical modelling underlying our econometrics on this area.

surplus as earnings. This is essentially the argument of a group of economists within and outside Yugoslavia, henceforth called the »labour school«, who view inter-firm differences in demand and cost conditions as the primary source of Yugoslav income differentials.[2] Against them, the bulk of institutionalists and policy makers in Yugoslavia regard capital rationing as the main cause of the problem. This »capital school« stresses the scarcity of capital in Yugoslavia and the inefficiency of its rationing with the price being fixed well below the market clearing rate.[3] The enterprise capital stock, itself the consequence of previous planning decisions, is seen as generating implicit rentals (comprising the difference between the capital's marginal product and cost) which are distributed to the workers as incomes. Policy conclusions highlight the distinction between the two schools: labour school analysts are concerned with competitive pressures, enterprise entry and exit and anti-trust policies while members of the capital school stress capital pricing and allocation according to scarcity.

2. EXPLANATIONS OF EARNINGS

In this section we examine the factors influencing the determination of incomes in Yugoslavia. Our assumptions approximately conform to those underlying the labour and capital schools, and capital rationing can be incorporated into the general estimating equation as a special institutional feature which allows us to nest the two hypotheses in a single estimating equation.

Commencing with the standard model of enterprise choice under labour-management, let PQ denote revenue, rK capital cost and H other fixed costs, the firm is assumed to maximize income per worker,

$$y = \frac{PQ - rK - H}{L} \tag{1}$$

with respect to the choice variables L and K, while output price P, capital payments r and fixed costs H are assumed to be exogenous. The maximization leads to the reduced form input demand equations:

[2] Economists in this broad tradition include Ward (1958), Meade (1972), Wachtel (1972) and particularly Estrin (1979). The results are quite general in that they also obtain from other objectives than maximizing the income per worker [see Svejnar, (1982)]. This approach is predicated on the assumption workers cannot bid entry to high earning co-operatives at lower rates of pay, which is illegal in Yugoslavia, and that the reallocation of resources between users by enterprise entry and exit after changes in parameters is minimal. As Estrin (1983) establishes, there was very little corporate mobility over the period.

[3] Principal proponents of this approach include Milenkovitch (1971), Vanek (1973), World Bank (1975), Vanek and Jovičić (1975), and Staellerts (1981). It should be stressed that we use the terms labour and capital schools as convenient descriptive rather than normative titles.

$$L^d = L^d(P, r, H)$$
$$K^d = K^d(P, r, H) \tag{2}$$

which are homogeneous of degree zero in P, r and H. Labour income is a choice variable, and therefore cannot enter the input demand functions conventionally but (1) and (2) can be combined to express y as an indirect function of the exogenous variables,

$$y = \frac{PQ\,[L^d(P, r, H), K^d(P, r, H)] - rK^d(P, r, H) - H}{L^d(P, r, H)} = y(p, r, H). \tag{3}$$

Excess supply of labour in the social sector guarantees that Yugoslav employment is indeed demand determined. Therefore, traditional labour management theory implies that incomes are a function of prices, capital costs, fixed cost and measures of efficiency implicit in the production function. From this standpoint appropriate policies to reduce Yugoslav income differentials include measures to improve labour mobility and enterprise entry and exit in order to reduce price variance and cost differences among labour-managed firms.

The capital school theorists offer an alternative explanation of Yugoslav income differentials based on the notion that workers appropriate an implicit rental from the capital allocated to their firms by planners. In the best known formalization of this view, Vanek and Jovicic (1975) hypothesize that

$$y = \alpha + \beta\frac{K}{L} \tag{4}$$

where α and β are parameters. Equation (4) can be interpreted as a behavioural relationship between incomes, the marginal product of labour (α) and the imputed capital rental per head, $\frac{\beta K}{L}$, the latter comprising the difference between the marginal product of capital (β) and its cost (commonly assumed to be zero in this framework). The short-term policy implications of this model are clear; provided that the marginal product of labour and capital do not vary across firms, the entire dispersion in Yugoslav incomes can be eliminated by charging for capital at its scarcity price, β. In the longer term, one would seek to eliminate the problem altogether by the appropriate reallocation of capital.

Two streams of applied work on Yugoslav wage determination have been developed in the literature, based on various specifications of equations (3) and (4), respectively [see Wachtel (1973), Rivera-Batiz (1980), and Staelerts (1982)]. Each appears to be internally consistent and to offer valid representations of the process generating wages in Yugoslavia. However, the explanations offered are mutually inconsistent, one being derived from a capital market clearing assumption and the

other from capital rationing. As a result, they cannot be compared empirically since the hypotheses involved are not nested.

Our approach therefore is to use a general estimating framework, into which both the labour and capital school views can be embedded as special cases. Starting with the capital school equation (4), the labour school would object that, even if incomes were affected by capital rationing, dispersion in demand and cost factors under labour—management would generate differences in the labour marginal products, α, and would be reflected in the determination of optimal employment, L^d. Hence one must drop the constant term, α, and employ the labour demand equation (2) derived from the enterprise optimization problem in determining the desired capital-labour ration. If the capital stock is rationed at $\overline{K}$,

$$K^d = \overline{K} \tag{5}$$

substituting (2) and (5) into equation (4) yields the general specification

$$y = Y(p, r, H, \overline{K}). \tag{6}$$

Both the labour and capital schools are nested in equation (6) according to the significance of the coefficients on $\overline{K}$ and on p, H and r, respectively. The two explanations can therefore be tested in a common framework.

Following Lewis (1963) and Svejnar (1981), we use a logarithmic approximation to the income equation (6):

$$ln\, y_{it} = d_{oi} + d_1 ln\, P_{it} + d_2 ln\, X_{it} + d_3 ln\, r_{it} + d_4 ln\, \overline{K}_{it}. \tag{7}$$

The variables X_{it} are a vector capturing inter-industry differences in technological and cost conditions implicit in the Y function of equation (6).

The logarithmic approximation embeds the views of the two schools as follows. Using the standard capital school assumption of fixed coefficients (Leontief-type) technology [e. g. Vanek and Jovičić (1975)], the capital school view in logarithmic form can be expressed as

$$ln\, y_{it} = d'_{oi} + d'_4 ln\, \overline{K}_{it}. \tag{7'}$$

Equation (7') is nested in equation (7) according to the joint significance of coefficients d_1, d_2 and d_3.[4] Similarly, re-solving the optimization problem in logarithmic form on the assumption of capital market clearing yields a labour school equation

$$ln\, y_{it} = d''_{oi} + d''_1 ln\, P_{it} + d''_2 ln\, X_{it} + d''_3 ln\, r_{it} \tag{7''}$$

[4] See Estrin and Svejnar (1983) for a model generalizing this argument.

which is also a special case of equation (7). We cannot reject the labour school hypothesis if $d_4 = 0$ and d_1, d_2 and d_3 are jointly significant. To test the capital school view we estimate equations (7) and (7') and use an F-test to determine the joint significance of d_1, d_2 and d_3 in equation (7). To test the labour school view we employ a t-test on the significance of d_4 in equation (7).

3. EMPIRICAL RESULTS

The earnings equations (7) and (7') are estimated on annual data for 19 Yugoslav industries and the period 1965—1972, the era of maximal self management.[5] The data are derived from Statistički Godišnjak Jugoslavie, with the price series being derived from the series of nominal and real output, normalized back to 1956, and the centrally determined interest rate standing as proxy for r. The X_{it} vector is intended to capture inter-industry dispersion in technological and cost conditions, including H, and in this study it is proxied by minimum efficient scale, denoted AVsize, and labour productivity, denoted $\frac{Q}{L}$. AVsize is included to take account of the relatively restrictive technical conditions for production under labour—management which necessitated the inclusion of H in the original optimization problem [see Svejnar (1982) and Ireland and Law (1982)]. It is measured by average firm size in the industry.

The role of technical efficiency in profit functions and therefore income functions under labour—management is clear but the fact that labour productivity is an endogenous variable in both the labour and capital school views is a potential source of simultaneous equation bias. To deal with this problem, we employ the form of instrumental variable estimation proposed by Brundy and Jorgenson (1971) and also followed by Estrin (1979) in his estimation of labour school wage equations. Specifically, the approach entails estimating a labour productivity equation derived from the relevant model and entering the residuals into the earnings equation to eliminate the simultaneity between productivity and the other determints of earnings in the earnings equation. For example, for the general formulation of equation (7), the procedure involves estimating

$$ln\left(\frac{Q}{L}\right) = b_{oi} + b_1 ln\, P_{it} + b_2 ln\, r_{it} + b_3 ln\, AVsize + b_4 ln\, \overline{K}_{it} + \mu_{it} \tag{8}$$

and placing the residuals in the earnings equation instead of labour productivity,

[5] This choice of period is justified in Estrin (1983).

$$ln\, y_{it} = d_{oi} + d_1 ln\, P_{it} + d_2 ln\, r_{it} + d_3 ln\, AVsize + d_4 \mu_{it} + \\ + d_5 ln\, \overline{K_{it}} + \zeta_{it}, \qquad (9)$$

there ζ_{it} is the error in the earnings equation. The procedure gives unbiased estimates of the earnings though not the labour productivity equation provided the errors in the former (ζ_{it}) are uncorrelated with the errors in the latter (μ_{it}).

With only 8 observations per industry, it is impossible to employ the most efficient estimation procedure for this problem, Zellner's (1962) seemingly unrelated regressions framework, which would generate industry specific wage equations. To approximate this, we employ ordinary least squares with industry specific dummies separately on each of the two equations — productivity and wages. In order to approximate the covariance model for this cross section time series data set, we include a second degree time polynomial in the wage equations. This can be viewed as proxing for the increasingly egalitarian trend in the earnings dispersion over the period [see Estrin (1981)].

In Table 1 we report the estimate of equation (7) [formulated as (9)] on the Yugoslav data set. The regression displays a very good overall fit with an $\overline{R}^2 = 0.92$ and all the estimated coefficients being significant and displaying the predicted signs. Incomes vary positively with the product price, productive efficiency and average firm size, and the effect of the interest rate is negative. The time variables are significant and indicate that, ceteris paribus, earnings were growing at a decreasing rate between 1965 and 1972, almost certainly the consequence of government policy.[6] The nineteen industry specific intercepts which are not reported in the table reveal that considerable differences exist among the individual industries. The overall significance of the equation at the 90% level offers support for the relevance of this model in explaining Yugoslav wage determination.

As we stressed at the outset, the main aim of this paper is hypothesis testing to establish the empirical validity of the labour and capital schools. The significance of the coefficient on the capital stock leads us to reject a strict labour school hypothesis which would claim that incomes are not affected by capital rationing (i. e. contrary to this view we find $d_5 > 0$). Similarly, an F-test on the joint significance of the coefficients on price, interest rate and the technological variables finds these coefficients jointly significant (i. e. we do not find $d_1 = d_2 = d_3 = 0$). The test thus leads us to reject the capital school hypothesis which places exclusive emphasis on the rationed stock of capital as a determinant of incomes. We therefore find support for a more general formulation of wage determination in which both labour and capital school views are relevant.

The natural next question concerns the relative quantitative importance of the two explanations. We therefore calculate the fraction of total earnings that can be attributed to capital rationing with the

[6] Estrin (1983) reports that Yugoslav income differentials increased from around 1965—1968 and then began to narrow. This was attributed to increasing enterprise entry and the effectiveness of government incomes policies.

proportion being reported in the first column of Table 2. The proportion is calculated as $\hat{d}_5 \ln \hat{K}/\ln \hat{y}$ and, ignoring the covariance of d_5 with other coefficients [see Chaswick and Mincer (1972)], it gives an approximation of the true effect of capital on income.[7] On average, the size of the capital rationing effect is very large, accounting for 30% to 59% of sectoral incomes over the period. However, the inter-industry variation in this effect around its mean of 48.3% is rather small, with only one observation exceeding 55% and two observations falling below 41%.

It is particularly striking that these estimates actually exceed those of Vanek and Jovičić (1975), the founders of the capital school approach.

Using only cross-section data and imposing a narrow interpretation of the capital school hypothesis [see Estrin, Svejnar and Mow (1983)]; they calculate the capital rationing effect to vary between 5% and 45% of observed earnings in each sector. Hence using a less restrictive version of the capital school view we find both a role for labour school factors and a relatively greater impact of capital rationing on Yugoslav incomes. Finally, it is interesting to note that there is no significant relationship between the proportion of earnings explained by the capital rationing effect in each sector and the absolute level of incomes, displayed in column (2) of Table 2.[8]

4. CONCLUSIONS

In this paper, we estimate an econometric model of wage determination in Yugoslavia into which the competing hypotheses of the »labour« and »capital« schools are nested. The results accord closely to a common sense interpretation of the post-reform period. Contrary to the predictions of many Yugoslav policy-makers and to the empirical foundings of, for example, Vanek and Jovičić (1975), we establish that Yugoslav earnings are to some extent influenced by the factors suggested in traditional labour-management models: dispersion in corporate profitability caused by differences in demand and cost conditions and passed on to worker earnings via the institutional arrangements inherent in self-management. This suggests that, as Ward (1958) and Meade (1972) have implied, disturbances in the system under labour-management are reflected in labour incomes, and that labour and product market immobilities in Yugoslavia were sufficiently marked to prevent the eradication of the resulting labour marginal product differences over the period. This finding supports the policy prescription of actions to stimulate labour mobility and enterprise entry and exit.

But we also find empirical support for view held widely both within and outside Yugoslavia that income dispersion is caused by the wor-

[7] Actual incomes are employed for the calculations in Table 2, but predicted incomes give identical results to the second decimal place.

[8] The Pearson and Spearman correlation coefficients for the two columns in Table 3 are — 0.0004 and 0.707, respectively. Using the entire 152 observations rather than industry means, the two correlation coefficents are — 0.051 and — 0.08, respectively.

kers' appropriation of monopoly capital rentals derived from the free or cheap use of fixed assets. It is clear that, for example, Wachtel (1973) and Estrin (1979) were incorrect in choosing to ignore the implications of Yugoslav capital rationing and pricing policies for income determination between 1965 and 1972. One must therefore also accept the relevance of policies based on pricing capital at its scarcity value ultimately eliminating from it dispersion in capital rentals by reallocating fixed assets to equalize capital marginal products across uses.

Our econometrics provide evidence in favour of both the capital and labour school contentions. The dispute therefore reduces to the empirical issue of their relative importance in explaining observed wage differentials over the period. In fact, the sum of the effects from labour and product market immobilities was the greatest source of earnings dispersion, but capital rationing proved to be the largest single source of actual incomes at any time. Thus it would seem that after the right to earn income freely from the existing fixed assets was devolved to each firm in 1965, wage payments were mainly influenced by the firms' initial level of capitalization. However, since the capital stock adjusts much more slowly than variables such as incomes, productivity and prices, it is not surprising that incomes dispersion was primarily determined by the latter variables. The intuition of Yugoslav experts that the arbitrary arrangements for the control and pricing of capital were bound to have ramifications for income distribution was basically correct, but the same authorities have also tended to underestimate the way that allocative inefficiencies could be rapidly transmitted into workers incomes and the distribution of incomes under self-management.

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TABLE 1

Instrumental Variables Estimates of Earnings Equation (7)

ln P	0.1559
	(0.0275)
ln r	—0.1107
	(0.0463)
ln $(\hat{Q/L})$	0.1892
	(0.0537)
ln (AVsize)	0.0887
	(0.0219)
ln K	0.0576
	(0.0557)
t	0.0662
	(0.0080)
t^2	—0.0063
	(0.0009)

Industry-specific Intercepts	YES
$\overline{R^2}$	0.92
N	152

Values in parentheses are standard errors. Variable ln $(\hat{Q/L})$ is based on Brundy and Jorgenson (1971) instrumental variable method.

TABLE 2

Proportion of the Income Attributable to Capital Rationing: Calculations Based on Estimates of Table 1

	(1) $\frac{d_t \ln \hat{K}_t}{\ln y_t}$	(2) $\ln y_t$
1. Electrical generation & distribution	0.59	4.478
2. Coal and Coke	0.51	4.445
3. Petroleum	0.50	4.423
4. Ferrous metallurgy	0.52	0.490
5. Monferrous minerals	0.51	4.507
6. Nonmetallic minerals	0.45	4.475
7. Metals & metal manufacturing	0.55	4.476
8. Shipbuilding	0.43	4.478
9. Electrical machinery		
10. Chemicals	0.52	4.491
11. Construction materials	0.48	4.421
12. Wood & wood products	0.49	4.442
13. Paper & paper products	0.48	4.480
14. Textiles & clothing	0.52	4.492
15. Leather & leather products	0.41	4.471
16. Rubber	0.39	4.513
17. Food processing	0.52	4.473
18. Printing & publishing	0.43	4.465
19. Tobacco	0.40	4.452
AVERAGE	0.483	4.471

Calculations based on predicted incomes ($d_t \ln K/\ln y_t$) were identical to the second decimal point to those based on actual incomes. The reported values for each industry represents an arithmetic average of the annual values between 1965 and 1972.

REFERENCES

Brandy, J. and Jorgenson, D. (1971), »Efficient Estimation of Simultaneous Equations by Instrumental Variables«, *The Review of Economics and Statistics*, 53 (3), 207—224.

Chiswick, B. and Mincer, J. (1972), »Time Series Changes in Personal Income Inequality in the United States from 1939, with Projections to 1985«, *Journal of Political Economy*, 80 (3), Part II, 534—566.

Dirlam, J. B. and Plummer, J. C. (1973), *An Introduction to the Yugoslav Economy*, Merril.

Estrin, S. (1979), »An Explanation of Earnings Variation in the Yugoslav Self-Managed Economy«, *Economic Analysis and Workers' Management*, 13, 175—199.

Estrin, S. (1981), »Income Dispersion in a Self-Managed Economy«, *Economica*, *48*, 181—194.

Estrin, S. (1983), *Self-Management: Economic Theory and Yugoslav Practice*, Cambridge, Cambridge University Press.

Estrin, S., Svejnar, J., Mow. C. (1983), »Market Imperfections, Labour-Management and Earnings Differentials in a Developing Country: Theory and Evidence from Yugoslavia«, University of Southamption Discussion Paper No. 8317.

Estrin, S. and Svejnar, J. (1983), »Wage Determinationn under Labour-Management: Theory and Evidence from Yugoslavia«, forthcoming, Warwick University Department of Economics Discussion Paper No. 243.

Ireland, N. J. and Law, P. J. (1982), *Economic Analysis of Labour-Managed Enterprises*, London, Croom Helm.

Lewis, G. (1963), *Unionism and Relative Wages in the United States*, Chicago, University of Chicago Press.

Meade, J. E. (1972), »The Theory of Labour-Managed Firms and of Profit-Sharing«, *Economic Journal 81*, 402—428.

Milenkowich, D. C. (1971), *Plan and Market in Yugoslav Economic Thought*, New Haven, Yale University Press.

Rivera-Batiz, F. L. (1980), »The Capital Market in Yugoslavia: A Theoretical and Empirical Note«, *Quarterly Journal of Economics*, *44*, 179—184.

Staellerts, R. (1981), »The Effects of Capital Intensity on Income in Yugoslav Industry«, *Economic Analysis and Workers' Management*, *15*, 501—516.

Svejnar, J. (1981), »Relative Wage Effects of Unions, Dictatorship and Co-determination: Econometric Evidence from Germany«, *Review of Economics and Statistics*, *63* (2), 188—197.

Svejnar, J. (1982), »On the Theory of a Participatory Firm«, *Journal of Economic Theory*, 27 (2), 313—330.

Vanek, J. (1970), *The General Theory of Labour-Managed Market Economies*, Ithaca, Cornell University Press.

Vanek, J. (1973), »The Yugoslav Economy Viewed Through the Theory of Labour-Management«, *World Development*, *1* (9), 39—56.

Vanek, J. and Jovičić, M. (1975), »The Capital Market and Income Distribution in Yugoslavia«, *Quarterly Journal of Economics*, *89*, 432—443.

Wachtel, H. (1972), »Workers' Management and Inter-Industry Wage Differentials in Yugoslavia«, *Journal of Political Economy*, *80* (3), 540—560.

Ward, B. (1958), »The Firm in Illyria: Market Syndicalism«, *American Economic Review*, *68*, 566—689.

World Bank (1975), *Yugoslavia: Development with Decentralization*, Baltimore, John Hopkins University Press.

Zellner, A. (1962), »An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bais«, *Journal of American Statistical Association*, 57, 348—368.

RAZMATRANJE LIČNIH DOHODAKA U JUGOSLAVIJI: KOMPARACIJA KAPITALNOG I RADNOG PRISTUPA

Saul ESTRIN
Jan SVEJNAR

Rezime

U ovome članku ocenjuje se ekonometrijski model određivanja plata u Jugoslaviji, u koji su ugrađene konkurentske hipoteze »radne« i »kapitalne« škole mišljenja. Rezultati su u skladu za zdravorazumskom interpretacijom posterformskog perioda. Za razliku od predviđanja mnogih tvoraca politike u Jugoslaviji i za razliku od empirijskih nalaza, na primer I. Vaneka i M. Jovičić (1975), mi dokazujemo da su jugoslovenske zarade, u određenoj meri, pod uticajem faktora predloženih u tradicionalnim modelima radničkog upravlajnja: disperzije korporativne profitabilnosti prouzrokovane razlikama u tražnji i troškovima i prenete na zarade radnika institucionalnim aranžmanima inherentnim samoupravljanju. Ovo, pak, znači da se, kao što su to Ward (1958) i Meade (1972) pokazali, poremećaji u sistemu pod radničkim upravljanjem odražavanju na dohotke radnika i da je imobilnost na tržištima rada i proizvoda bila dovoljna da onemogući iskorenjivanje rezultujućih razlika u graničnim proizvodima rada u toku perioda. Taj nalaz ide u prilog politike kojom se stimuliše mobilnost rada, kao i slobodan ulaz i izlaz u preduzeću.

Ali, mi takođe nalazimo emperijsku potvrdu za široko rasprostranjen stav u Jugoslaviji i van nje, prema kome je disperzija dohodaka prouzrokovana radničkim prisvajanjem monopolskih kapitalnih rentala izvedenih iz slobodne ili jeftine upotrebe fiksnih fondova. Jasno je, na primer, da Wachtel (1973) i Estrin (1979) nisu bili u pravu kada su zanemarili implikacije jugoslovenske politike racioniranja i vrednovanja kapitala za određivanje dohodaka između 1965. i 1972. godine. Stoga se mora prihvatiti i relevantnost politike zasnovane na vrednovanju kapitala, u skladu sa njegovom retkošću, i na njegovom konačnom isključivanju iz disperzije kapitalnih rentala realociranjem fiksnih fondova tako da se izjednače granični proizvodi kapitala prema upotrebama.

Naš pristup dokazuje stavove pobornika i »kapitalne« i »radne« škole mišljenja: Stoga se spor svodi na empirijski ishod njihovog relativnog značaja u objašnjavanju opserviranih razlika u zaradama u toku perioda. U stvari, suma efekata imobilnosti na tržištima rada i kapitala bila

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 prilagođava 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.

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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.

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