

The Equity-Efficiency Tradeoff under Capitalism and Market Socialism

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INTRODUCTION

Up to the present time, the bulk of the literature on market socialism has been concerned with either the Langian or cooperative variants of the concept. See, for example, the discussions of Bergson (1967), Milenkovitch (1984), Zimbalist and Sherman (1984, Chapter 14), Gregory and Stuart (1985, pp. 133–143), Elliott (1985, Chapter 15). However, it could be that a third variant of market socialism, designated herein “pragmatic” market socialism, provides a more practicable model for which a stronger economic case may be made.¹ The basic institutions and operations of a potential pragmatic market socialist economy would be almost identical to those of the contemporary capitalist economy. Profit-maximizing firms and utility-maximizing households would continue to interact in competitive economic markets, and the prices generated in these markets would guide microeconomic decision-making by autonomous economic agents. There would, however, be two fundamental differences.

First, the profit maximization motive in executives of large, publicly-owned corporations would be enforced not by boards of directors elected by private stockholders, but by agents of a national government ownership agency called the Bureau of Public Ownership (BPO). This agency itself would be allowed to retain a maximum of five percent of the property return received by it to cover its administrative and incentive bonus expenses; the rest would be distributed to the labor force in the form of a social dividend payment individually proportional to earned wages and salaries. Second, private households would not be allowed to receive property return in any form on financial assets. Instead, individual households would lay claim to the aggregate pool of property return by means of labor income: each household’s social dividend income would be a fixed proportion of its labor income.

A pragmatic market socialist economy in an advanced industrialized nation such as the U.S. or U.K. would achieve a considerable equalization in the distribution of property return among households. It is arguable that the highly unequal distribution of unearned property return under contemporary capitalism constitutes a serious socio-economic defect, a defect that might be remedied, without seriously offsetting disadvantages, by pragmatic market socialism.

The economic arguments against this proposition fall mostly into two general categories: 1) that property income, while not earned by the conventional labor which earns wage and salary income, is nevertheless earned; 2) that the distribution of property income under contemporary capitalism is not excessively unequal.² These protean questions will not be directly tackled in this paper. The author has written extensively on the earned versus unearned question in light of the pragmatic market socialist proposal (see Yunker: 1974; 1976; 1979b, pp. 167–187; 1987a; 1988a; 1990); and also on the distributional question (see Yunker: 1977; 1982; 1984).

It has long been the author’s judgment that the substantially more equal distribution of unearned property return in the form of social dividend income to be expected under pragmatic market socialism is by far the single most important argument for the proposal. However, there are also some non-negligible arguments that pragmatic market socialism might be preferable to capitalism on efficiency grounds as well as equity grounds. First, it may be argued (Yunker, 1979a) that the tight cohesion of a small but sternly activist BPO would enforce a stronger profit motive on corporation

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executives than that to which they have become accustomed under contemporary capitalism, with its separation of ownership and control. Second, it may be argued (Yunker, 1986a) that a pragmatic market socialist economy would be more likely to support a higher rate of business physical capital investment than the contemporary capitalist economy.

The present paper presents a theoretical formulation and quantitative assessment of a third efficiency argument for pragmatic market socialism: that the equity-efficiency tradeoff would be significantly more favorable under pragmatic market socialism than it is currently under capitalism. The extensive literature on the equity-efficiency tradeoff is concerned with the adverse effect on labor and output of social redistribution of labor income (Okun, 1975; Danziger et al, 1981; Browning and Johnson, 1984; Ballard et al, 1985a, 1985b). Income taxation of middle to high income households reduces their effective wage and thereby (presuming an upward-sloping supply curve of labor) decreases their provision of labor. At the same time, the transfer of this tax revenue to low income households as an unearned subsidy decreases their provision of labor. Thus labor is lost at all income levels, and output is correspondingly reduced.

The efficiency argument for pragmatic market socialism under discussion here utilizes these familiar propositions from the equity-efficiency literature. The pragmatic market socialist proposal envisions the transformation of a flow of unearned capital property income into a social dividend wage supplement. If unearned income is a deterrent to labor, and if there exists an upward-sloping supply curve of labor with respect to the effective wage, this transformation should increase labor and consequently output.

The paper is organized as follows. The following section presents a simple general equilibrium model of the economy designed to allow convenient numerical determination of the equity-efficiency tradeoff, as well as the socially optimal level of taxation/redistribution. One version of the model represents the current capitalist economy, the second version a potential pragmatic market socialist economy. The two versions differ only in the distribution of property return. The description of the model and its numerical implementation given below is fairly concise, since these matters are already covered in considerable detail, for the capitalist version of the model, in related papers by the author (Yunker: 1987b, 1989). In the present paper the focus will be on the differing equity-efficiency tradeoffs implied by the model as between capitalism and market socialism.

The third section presents numerical estimates of the equity-efficiency tradeoff, based on the second section model, for the capitalist economy and the pragmatic market socialist economy. At the optimal tax-transfer position (which is almost identical for both economies), the pragmatic market socialist economy displays 13.87 percent more output than the capitalist economy, and a Gini coefficient for consumption 23.28 percent less than that of the capitalist economy. The social welfare gain from this improvement in both efficiency and equity is estimated to be 2.55 percent on the basis of the Benthamite, or sum of utilities, social welfare function.

The fourth and final section of the paper briefly enumerates and evaluates several important objections which might be lodged against these results.

A SIMPLE GENERAL EQUILIBRIUM MODEL

Table 1 presents a comparison of the capitalist and market socialist versions of a simple general equilibrium model. Of the 12 equations in each of the two versions, 7 are identical: equations (1)–(4), and (8)–(10). Equation (1) is a Cobb–Douglas production function giving aggregate output Q as a function of the capital stock K and the labor (ℓ_i) of each of n households. In the empirical implementation of the model, there are 10 “households” identified as income deciles of the United States population. Equations (2)–(3) represent the distribution of labor income according to the conventional theory of marginal product factor pricing. According to this theory, the output elasticity of household i labor (δ_i) may be estimated by the share of household i labor income in national income. Estimates of δ_i are shown in Table 2.

TABLE 1
Comparison of Capitalist Model with Market Socialist Model

| Parameters | | |
|---|---|--|
| Parameters common to capitalism and market socialism: | | |
| K | capital stock | α utility elasticity of consump |
| ϵ | output elasticity of capital | β utility elasticity of leisure |
| δ_i | household i output elas of labor | τ tax rate |
| Parameters specific to capitalism | | |
| k_i | proportion of capital stock owned by household i | ϕ proportion of property return retained by BPO |
| Endogenous Variables | | |
| Endogenous variables common to capitalism and market socialism: | | |
| Q | aggregate output | t_i household i net burden |
| w_i | household i market wage | c_i household i consumption |
| y_i^w | household i labor income | u_i household i utility |
| P | property return | w_i' household i effective wage |
| y_i | household i total income | ℓ_i household i labor supply |
| c_m | guaranteed minimum consumption | |
| Endog var specific to capitalism: | | |
| f_i | household i property income | Endog var specific to socialism: |
| | | d_i household social dividend |
| Structural Form Equations | | |
| (#) | Capitalism | Market Socialism |
| (1) | $Q = K^\epsilon \prod_{i=1}^n \ell_i^{\delta_i}$ | $Q = K^\epsilon \prod_{i=1}^n \ell_i^{\delta_i}$ |
| (2) | $w_i = \delta_i Q \ell_i^{-1}$ | $w_i = \delta_i Q \ell_i^{-1}$ |
| (3) | $y_i^w = w_i \ell_i$ | $y_i^w = w_i \ell_i$ |
| (4) | $P = Q - \sum y_i^w$ | $P = Q - \sum y_i^w$ |
| (5) | $f_i = k_i P$ | $d_i = (\delta_i / \sum \delta_i)(1 - \phi)P$ |
| (6) | $y_i = y_i^w + f_i$ | $y_i = y_i^w + d_i$ |
| (7) | $c_m = \tau Q/n$ | $c_m = \tau(1 - \phi(1 - \sum \delta_i))Q/n$ |
| (8) | $t_i = \tau y_i - c_m$ | $t_i = \tau y_i - c_m$ |
| (9) | $c_i = y_i - t_i$ | $c_i = y_i - t_i$ |
| (10) | $u_i = c_i^\alpha (1 - \ell_i)^\beta$ | $u_i = c_i^\alpha (1 - \ell_i)^\beta$ |
| (11) | $w_i' = w_i$ | $w_i' = ((1 - \phi(1 - \sum \delta_i)) / \sum \delta_i) w_i$ |
| (12) | $\ell_i = \frac{\alpha}{\alpha + \beta} - \frac{\beta}{\alpha + \beta} \frac{(1 - \tau)f_i + c_m}{(1 - \tau)w_i'}$ | $\ell_i = \frac{\alpha}{\alpha + \beta} - \frac{\beta}{\alpha + \beta} \frac{c_m}{(1 - \tau)w_i'}$ |
| Reduced Form Labor Supply | | |
| | $\ell_i = \frac{\alpha(1 - \tau)\delta_i}{(1 - \tau)[(\alpha + \beta)\delta_i + \beta k_i(1 - \sum \delta_i)] + (\beta\tau/n)}$ | $\ell_i = \frac{\alpha(1 - \tau)(\delta_i / \sum \delta_i)}{(1 - \tau)(\alpha + \beta)(\delta_i / \sum \delta_i) + (\beta\tau/n)}$ |

Property return P is then defined in equation (4) as a residual: national output Q less labor income payments. The critical difference between capitalism and market socialism is in the distribution of property return. Equation (5) in the capitalist model shows property return distributed in proportion to each household's ownership of capital wealth. An empirical estimate of the capital ownership parameters, k_i , is shown in Table 2. This estimate is based on the well-known Projector–Weiss report on the 1963 Federal Reserve Board survey of wealth ownership in the United States.³

Equation (5) in the market socialist model shows property return distributed in proportion to each household's labor income. More precisely, under market socialism only the proportion $(1 - \phi)$ is distributed, since the proportion ϕ of property return is retained by the Bureau of Public Ownership to

TABLE 2

Estimates of k_i and δ_i for 10 Deciles of U.S. Households, 1963

| By Data Source Brackets: | | By Interpolated Deciles: | | Estimated k_i |
|--------------------------|---------------------------|--------------------------|---------------------------|----------------------|
| Cum. Percent Households | Cum. Percent Cap. Wealth | Cum. Percent Households | Cum. Percent Cap. Wealth | |
| A. Capital Wealth | | | | |
| 100.00 | 100.00 | 100.00 | 100.00000 | .885733 |
| 99.82 | 70.27 | 90.00 | 11.42661 | .079512 |
| 98.62 | 37.97 | 80.00 | 3.47538 | .021958 |
| 96.89 | 25.76 | 70.00 | 1.27958 | .009220 |
| 93.26 | 15.24 | 60.00 | .35754 | .002384 |
| 84.28 | 5.11 | 50.00 | .11917 | .001113 |
| 75.82 | 1.99 | 40.00 | .00784 | .000040 |
| 63.04 | .43 | 30.00 | .00384 | .000038 |
| 45.42 | .01 | 20.00 | .00000 | .000000 |
| 20.27 | 0 | 10.00 | .00000 | .000000 |
| By Data Source Brackets: | | By Interpolated Deciles: | | Estimated δ_i |
| Cum. Percent Households | Cum. Percent Labor Income | Cum. Percent Households | Cum. Percent Labor Income | |
| B. Labor Income | | | | |
| 100.00 | 100.00 | 100.00 | 100.00000 | .176205 |
| 99.65 | 98.51 | 90.00 | 77.97431 | .136733 |
| 98.78 | 95.88 | 80.00 | 60.88263 | .124650 |
| 95.33 | 87.77 | 70.00 | 45.30138 | .093125 |
| 84.60 | 68.05 | 60.00 | 33.66067 | .089740 |
| 69.03 | 43.79 | 50.00 | 22.44323 | .061495 |
| 47.92 | 20.11 | 40.00 | 14.75637 | .054077 |
| 28.20 | 6.78 | 30.00 | 7.99673 | .025506 |
| | | 20.00 | 4.80851 | .019234 |
| | | 10.00 | 2.40426 | .019234 |

Source: Calculations based on data in Projector and Weiss (1966): Tables A10, A33, A36; and in Internal Revenue Service Statistics of Income 1963: Individual Income Tax Returns, Table 2.

cover its administrative and incentive expenses. Household i total income is defined in equation (6). Under capitalism, total income is labor income plus property income; under market socialism, total income is labor income plus social dividend income.

The numerical value for ϕ used in the benchmark case below ($\phi = 0.05$) is based on the assumption that an activist Bureau of Public Ownership would retain approximately 5 percent of property return, as suggested in the author's previous writing on pragmatic market socialism. The effect of hypothetical variation in this social cost component is examined in the concluding section of the paper.

The structural form household labor supply function, equation (12), is derived from the maximization of the Cobb-Douglas utility function in consumption and leisure, equation (10), subject to the household budget constraint, equation (9). The benchmark results shown below in Tables 3 and 4 are based on utility function parameter values of $\alpha = 0.25$ and $\beta = 0.75$. Although these are somewhat hypothetical values, the sensitivity analysis shown below in Table 5 suggests that the α and β values do not have a strong impact on the qualitative conclusions to be drawn from this experiment.

Equation (8) shows the "net burden" function which enters as a constraint into the household utility maximization problem. Although this has the same form as the standard "negative income tax"

function in the literature, it has a somewhat different interpretation as used herein. The symbol c_m normally represents "guaranteed minimum income," a monetary subsidy which would be paid to a hypothetical household with zero income. In this model c_m represents "guaranteed minimum consumption," which may or may not include monetary subsidies paid by the government to low income households, but which in any event does include the equivalent monetary value of public goods purchased by the government and made available equally to all citizens. From the social budget constraint $Q = \sum y_i = \sum c_i$, the value of c_m is determined as a function of the tax rate τ . Thus the tax rate τ in this model is the single policy variable whose variation generates the equity-efficiency tradeoff. Equation (7), which represents the social budget constraint, varies between the capitalist and market socialist versions because the socialist version does not account for the property return retained by the Bureau of Public Ownership: this amount is simply withdrawn from circulation and considered as a deadweight loss.

By means of making the appropriate substitutions into the structural form household labor supply functions from the other structural form equations, it is possible to solve explicitly for household labor supply as a function of the parameters alone. The reduced form labor supply functions are shown at the bottom of Table 1. The availability of the reduced form labor supply equations greatly facilitates the computation of the model. Also it is an elementary manipulation to show from these equations that household labor supply must be higher under market socialism than it is under capitalism.

Clearly the model is very simple and highly aggregated. However, in the model's favor is that some of the numerical results produced for the capitalist variant are basically consistent with results obtained from larger models currently under investigation in the literature (Browning and Johnson, Ballard et al). Perhaps the single most interesting result obtained from the capitalist version of the model is that it estimates the Benthamite optimal tax rate to be 0.39, which happens to be very close to the actual aggregate average rate currently prevailing in the United States. This may suggest that the theory of social welfare maximization, always heretofore considered a purely hypothetical construct from the realm of normative economics, might actually possess positive content.⁴

NUMERICAL ESTIMATES OF THE EQUITY-EFFICIENT TRADEOFF

The fundamental social decision variable in the model is the tax rate τ . The two reduced form labor supply equations were computed over a range of τ values from 0.0 (representing no social redistribution) up to 0.95, in increments of 0.05, for parameter values of $\alpha = .25$, $\beta = .75$, and k_i and δ_i as seen in Table 2. The remainder of the endogenous variables were then computed using equations (1)-(10) in Table 1. The K^c term in the production function, equation (1), was arbitrarily, but without loss of generality, set equal to 1. For all tax rates, the Gini coefficient for total income is the same value: .4610 for the capitalist economy and .3595 for the socialist economy. This is also the Gini coefficient for consumption under the no social redistribution situation ($\tau = 0$). For $\tau > 0$, the consumption Gini coefficient is a diminishing function of τ . Table 3 presents a side-by-side comparison of the results for the capitalist economy and the socialist economy for a τ range from 0.0 to 0.95, for three key indicators: total output/income ($Q = \sum y_i$), the Gini coefficient for consumption c_i , and social welfare ($SW = \sum u_i$).

The basic result indicated by Table 3 is that the pragmatic market socialist economy out-performs the capitalist economy for every tax rate with respect to all three indicators. Under pragmatic market socialism, output (efficiency) is uniformly higher, consumption equality (equity) is uniformly higher and, as a result, social welfare is uniformly higher. Figure 1 illustrates the equity-efficiency tradeoff as between the pragmatic market socialist economy and the capitalist economy. The vertical axis represents output and the horizontal axis the level of equality. As the Gini coefficient (G) is an increasing function of inequality, and has an upper limit of 1, the level of equality may be measured by $1 - G$: this is the value measured along the horizontal axis in Figure 1. The graph shows all combinations of Q and $1 - G$ for values of τ between 0.0 and 0.95. The tradeoff for the market socialist economy is decidedly steeper: intuitively this is because in contrast to capitalism, all household income under socialism would be earned income, and hence its redistribution would have a greater disincentive

TABLE 3

The Equity-Efficiency Tradeoff under Capitalism and Market Socialism

| Tax Rate (τ) | Income (Σy_i) | | Consumption Gini Coef. | | Social Welfare (SW) | |
|------------------------|-------------------------|-----------|------------------------|-----------|---------------------|-----------|
| | Capitalism | Socialism | Capitalism | Socialism | Capitalism | Socialism |
| .000 | .29386 | .32658 | .4610 | .3595 | 3.15944 | 3.26903 |
| .050 | .28355 | .31675 | .4379 | .3416 | 3.20841 | 3.30866 |
| .100 | .27333 | .30682 | .4149 | .3236 | 3.24800 | 3.34182 |
| .150 | .26314 | .29673 | .3918 | .3056 | 3.27983 | 3.36929 |
| .200 | .25290 | .28642 | .3688 | .2876 | 3.30492 | 3.39155 |
| .250 | .24253 | .27584 | .3457 | .2697 | 3.32390 | 3.40890 |
| .300 | .23200 | .26493 | .3227 | .2517 | 3.33709 | 3.42144 |
| .350 | .22123 | .25363 | .2996 | .2337 | 3.34462 | 3.42914 |
| .400* | .21017 | .24187 | .2766 | .2157 | 3.34641* | 3.43179* |
| .450 | .19875 | .22959 | .2535 | .1977 | 3.34217 | 3.42901 |
| .500 | .18691 | .21670 | .2305 | .1798 | 3.33140 | 3.42022 |
| .550 | .17457 | .20309 | .2074 | .1618 | 3.31331 | 3.40456 |
| .600 | .16162 | .18867 | .1844 | .1438 | 3.28676 | 3.38079 |
| .650 | .14795 | .17327 | .1613 | .1258 | 3.25008 | 3.34713 |
| .700 | .13342 | .15672 | .1383 | .1079 | 3.20077 | 3.30094 |
| .750 | .11782 | .13878 | .1152 | .0899 | 3.13497 | 3.23815 |
| .800 | .10089 | .11913 | .0922 | .0719 | 3.04634 | 3.15205 |
| .850 | .08222 | .09727 | .0691 | .0539 | 2.92338 | 3.03050 |
| .900 | .06114 | .07242 | .0461 | .0360 | 2.74153 | 2.84769 |
| .950 | .03622 | .04292 | .0230 | .0180 | 2.42905 | 2.52835 |

Note: $\alpha = .25$, $\beta = .75$. k_i and δ_i as shown in Table 2. $\phi = 0.05$ for market socialism.

effect upon labor. However, while the tradeoff is steeper under market socialism, the tradeoff function itself lies significantly above the capitalist economy tradeoff function.

In Table 3, the highest social welfare value under capitalism and socialism is denoted by an asterisk. It so happens that the τ value which produces the highest social welfare value for both economies is $\tau = .400$. A numerical search procedure was applied to determine whether $\tau = .400$ actually is socially optimal. The procedure indicated that $\tau = .400$ is indeed the optimal value for the pragmatic market socialist economy. However, for the capitalist economy, maximum social welfare is achieved when the tax rate is marginally lower: $\tau = .390$.

Table 4 presents a full solution (i.e., for all 10 households) for six key endogenous variables, as between the socially optimal situation under capitalism and the socially optimal situation under socialism. The six endogenous variables comprise: 1) labor supply (ℓ_i); 2) labor income ($w_i \ell_i$); 3) total income (y_i); 4) net burden (t_i); 5) consumption (c_i); 6) utility (u_i). Labor supply and labor income are uniformly higher under socialism for all deciles, while total income is higher under socialism for all but the highest decile. Similarly, consumption and utility are higher under socialism for all but the highest decile. The function relating net burden of social redistribution to income is shifted backwards under socialism relative to capitalism. Total income under capitalism is .21241, while under socialism it is .24187 (13.87 percent higher). The Gini coefficient for consumption under capitalism is .2812, while under socialism it is .2157 (23.28 percent lower). Social welfare under capitalism is 3.34653, while under socialism it is 3.43179 (2.55 percent higher).

Finally, Table 5 shows the insensitivity of the qualitative results from the model to variations in the values of α and β , the utility function parameters. Results on output, consumption Gini, and social welfare, are shown for (α, β) combinations ranging from (.10, .90) to (.90, .10). In parentheses under

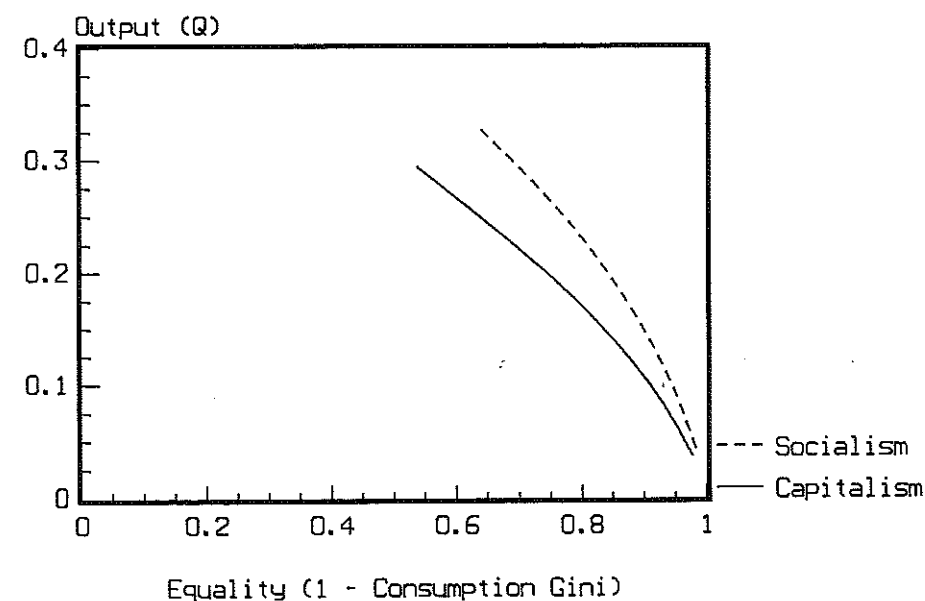


Figure 1. The Equity-Efficiency Tradeoff under Capitalism and Market Socialism.

each pair of figures is the percentage improvement under socialism vis-a-vis capitalism. The relative gain under socialism with respect to output decreases as α increases, that with respect to the consumption Gini remains unchanged, and that with respect to social welfare rises and then declines. The maximum gain in social welfare as between capitalism and market socialism occurs when the utility parameters are equal at $\alpha = \beta = 0.50$.

SUMMARY AND EVALUATION

According to numerical estimates derived from the general equilibrium model described in this paper, a potential pragmatic market socialist economy could achieve an improvement over the capitalist economy in terms both of equity and efficiency. This is quite a striking implication, because it is of course a widespread piece of conventional wisdom among contemporary Western economists that the equity gains of "socialism," generally defined, would be offset by serious efficiency losses. According to the model examined here, at the optimal taxation position pragmatic market socialism would achieve 13.87 percent more output than capitalism, while at the same time the Gini coefficient of consumption would be 23.28 percent lower. This gain in both efficiency and equity is estimated to represent a 2.55 percent gain in social welfare.

There are of course numerous provisos and qualifications that may be appended at this point, all of which to some extent weaken the force of this conclusion. Some would be stressed by "left-wing" critics of the pragmatic market socialist proposal: individuals who might object to the payment of social dividend in proportion to labor income; and others would be stressed by "right-wing" critics: individuals who might object, in the first place, to the transformation of capital property income into social dividend income. Some of these will now be briefly considered, starting with those from the "left."

It may be argued that it would be both ideologically and economically superior to distribute social dividend income equally rather than in proportion to labor income. To begin with, the ideological basis for converting property income into social dividend income resides in the judgment that property return is "earned" in an economic sense by inanimate capital objects and not by human beings. Therefore no particular worker has any greater or lesser claim to this income than any other.

TABLE 4

Comparison of Capitalist and Market Socialist Economies at their Respective Optimal Tax Rates

| Decile (i) | Labor (ℓ_i) | | Labor Income ($w_i \ell_i$) | | Total Income (y_i) | |
|---------------|----------------------|-----------|-------------------------------|-----------|------------------------|-----------|
| | Capitalism | Socialism | Capitalism | Socialism | Capitalism | Socialism |
| 1 | .12339 | .20375 | .03743 | .04305 | .07505 | .05327 |
| 2 | .17386 | .19342 | .02904 | .03341 | .03242 | .04134 |
| 3 | .17717 | .18927 | .02648 | .03045 | .02741 | .03769 |
| 4 | .16342 | .17488 | .01978 | .02275 | .02017 | .02816 |
| 5 | .16252 | .17292 | .01906 | .02192 | .01916 | .02713 |
| 6 | .14025 | .15147 | .01306 | .01502 | .01311 | .01859 |
| 7 | .13250 | .14370 | .01149 | .01321 | .01149 | .01635 |
| 8 | .08680 | .09734 | .00542 | .00623 | .00542 | .00771 |
| 9 | .07157 | .08118 | .00409 | .00470 | .00409 | .00582 |
| 10 | .07157 | .08118 | .00409 | .00470 | .00409 | .00582 |
| | | | | | .21241 | .24187 |
| | | | | | (13.87%) | |
| Decile (i) | Net Burden (t_i) | | Consumption (c_i) | | Utility (u_i) | |
| | Capitalism | Socialism | Capitalism | Socialism | Capitalism | Socialism |
| 1 | 0.02099 | 0.01163 | .05407 | .04164 | .43686 | .38077 |
| 2 | 0.00436 | 0.00686 | .02806 | .03448 | .35466 | .36675 |
| 3 | 0.00241 | 0.00540 | .02500 | .03229 | .34355 | .36217 |
| 4 | -0.00042 | 0.00159 | .02059 | .02657 | .33135 | .34952 |
| 5 | -0.00081 | 0.00118 | .01997 | .02595 | .32911 | .34810 |
| 6 | -0.00317 | -0.00224 | .01628 | .02083 | .31893 | .33587 |
| 7 | -0.00380 | -0.00313 | .01529 | .01948 | .31609 | .33258 |
| 8 | -0.00617 | -0.00659 | .01159 | .01430 | .30651 | .32025 |
| 9 | -0.00669 | -0.00735 | .01078 | .01316 | .30474 | .31788 |
| 10 | -0.00669 | -0.00735 | .01078 | .01316 | .30474 | .31788 |
| | | | (.2812) | (.2157) | 3.34653 | 3.43179 |
| | | | (-23.28%) | | (2.55%) | |

Notes: $\alpha = .25$, $\beta = .75$, k_i and δ_i as shown in Table 2. $\tau = 0.390$ for capitalism. $\tau = 0.400$ for market socialism. $\phi = 0.05$ for market socialism.

There are at least two economic arguments in favor of equal distribution. First, it has been a standard principle in welfare economics from at least the time of Edgeworth that insofar as truly exogenous ("unearned") income is concerned, given diminishing marginal utility of consumption and identical utility functions (conditions embodied in the model examined herein), equal distribution of such income will maximize the value of a Benthamite social welfare function. Second, there is the consideration that the payment of a social dividend wage supplement will drive a wedge between the marginal disutility of labor to the individual and the marginal productivity of labor to society, with the consequence that labor will be over-provided in a social welfare sense. This possibility is considered, for example, in Dwight Israelson's theoretical paper on the worker-controlled firm (1980), which contrasts the "communal" principle of distribution of firm revenues among the membership (equal shares to all), with the "collective" principle (payment in proportion to labor hours provided).

Some illumination on these objections is shed by Table 6, which compares values of capitalist output (Q), consumption Gini coefficient (G), and social welfare (SW), with their corresponding values for market socialism under two different social dividend distribution principles: equal distribution, and

TABLE 5

Sensitivity of the Relative Performance of Capitalism and Market Socialism to Variations in the Utility Function Parameter Values

| α β | Income (Σy_i) | | Consumption Gini Coef. | | Social Welfare (SW) | |
|---------------------|-------------------------|-----------|------------------------|-----------|---------------------|-----------|
| | Capitalism | Socialism | Capitalism | Socialism | Capitalism | Socialism |
| .10 | .09473 | .11098 | .2766 | .2157 | 5.93900 | 6.01001 |
| .90 | (17.15%) | | (-22.00%) | | (1.20%) | |
| .20 | .17200 | .19918 | .2766 | .2157 | 3.99199 | 4.07829 |
| .80 | (15.80%) | | (-22.00%) | | (2.16%) | |
| .30 | .24872 | .28439 | .2766 | .2157 | 2.83886 | 2.92045 |
| .70 | (14.34%) | | (-22.00%) | | (2.87%) | |
| .40 | .32825 | .37012 | .2766 | .2157 | 2.10909 | 2.17884 |
| .60 | (12.76%) | | (-22.00%) | | (3.31%) | |
| .50 | .41277 | .45828 | .2766 | .2157 | 1.63001 | 1.68607 |
| .50 | (11.03%) | | (-22.00%) | | (3.44%) | |
| .60 | .50430 | .55034 | .2766 | .2157 | 1.30999 | 1.35259 |
| .40 | (9.13%) | | (-22.00%) | | (3.25%) | |
| .70 | .60515 | .64770 | .2766 | .2157 | 1.09792 | 1.12787 |
| .30 | (7.03%) | | (-22.00%) | | (2.73%) | |
| .80 | .71826 | .75197 | .2766 | .2157 | 0.96674 | 0.98467 |
| .20 | (4.69%) | | (-22.00%) | | (1.85%) | |
| .90 | .84777 | .86513 | .2766 | .2157 | 0.91038 | 0.91603 |
| .10 | (2.05%) | | (-22.00%) | | (0.62%) | |

Note: $\tau = 0.400$; $\phi = 0.05$.

distribution in proportion to labor income (the pragmatic market socialist principle). The comparison is over a range of tax rate (τ) values from 0.00 to 0.95, by increments of 0.05, for the case of $\alpha = .25$ and $\beta = .75$. It is observed that market socialism, under either principle of social dividend distribution, out-performs capitalism on the basis of all three criteria—except for equal distribution having a lower Q for τ rates up to 0.20. As between distribution of social dividend equally or in proportion to labor income, the former principle is superior on grounds of equality throughout the τ range, while the latter is superior on grounds of output.

With respect to the Benthamite social welfare measure, equal distribution is superior to distribution in proportion to labor income for τ values up to 0.30, while for higher τ values, the pragmatic market socialist distribution principle is superior. More precisely, the SW values for the two principles of social dividend distribution are approximately equal for $\tau = 0.334$. So the question of which principle of distribution is socially superior depends on the value of the tax rate τ . Moreover, the results in Table 6 suggest that if the tax rate is used properly as an instrument of social policy, which distribution principle is utilized becomes irrelevant. Note that the highest social welfare under equal distribution is 3.43175, obtained when the tax rate $\tau = 0.25$. Under distribution in proportion to labor income, the highest social welfare is almost exactly the same, 3.43179, when $\tau = 0.40$. In fact, all three criteria (output Q, consumption Gini G, and social welfare SW) are very nearly the same under distribution in proportion to labor income when $\tau = 0.40$, as they are for equal distribution when $\tau = 0.25$.

Thus, to the extent that the proposed pragmatic market socialist social dividend distribution principle "over-stimulates" labor supply, that tendency may conceivably be neutralized by appropriate tax policy. With respect to the other economic objection against this principle, the Edgeworthian

TABLE 6

The Equity-Efficiency Tradeoff under Capitalism and Two Social Dividend Distribution Principles under Market Socialism

| Tax Rate (τ) | Market Socialism | | | | | | | | |
|---------------------|------------------|-------|----------|--------------------|-------|----------|--------------------|-------|----------|
| | Capitalism | | | Equal Distribution | | | Labor Income Dist. | | |
| | Q | G | SW | Q | G | SW | Q | G | SW |
| .000 | .2939 | .4610 | 3.15944 | .2881 | .2905 | 3.38829 | .3266 | .3595 | 3.26903 |
| .050 | .2835 | .4379 | 3.20841 | .2796 | .2760 | 3.40332 | .3168 | .3416 | 3.30866 |
| .100 | .2733 | .4149 | 3.24800 | .2709 | .2615 | 3.41520 | .3068 | .3236 | 3.34182 |
| .150 | .2631 | .3918 | 3.27983 | .2620 | .2470 | 3.42394 | .2967 | .3056 | 3.36929 |
| .200 | .2529 | .3688 | 3.30492 | .2528 | .2324 | 3.42950 | .2864 | .2876 | 3.39155 |
| .250* | .2425 | .3457 | 3.32390 | .2433 | .2179 | 3.43175* | .2758 | .2697 | 3.40890 |
| .300 | .2320 | .3227 | 3.33709 | .2335 | .2034 | 3.43050 | .2649 | .2517 | 3.42144 |
| .350 | .2212 | .2996 | 3.34462 | .2233 | .1889 | 3.42546 | .2536 | .2337 | 3.42914 |
| .400* | .2102 | .2766 | 3.34641* | .2127 | .1743 | 3.41625 | .2419 | .2157 | 3.43179* |
| .450 | .1988 | .2535 | 3.34217 | .2015 | .1598 | 3.40234 | .2296 | .1977 | 3.42901 |
| .500 | .1869 | .2305 | 3.33140 | .1899 | .1453 | 3.38304 | .2167 | .1798 | 3.42022 |
| .550 | .1746 | .2074 | 3.31331 | .1776 | .1307 | 3.35742 | .2031 | .1618 | 3.40456 |
| .600 | .1616 | .1844 | 3.28676 | .1646 | .1162 | 3.32417 | .1887 | .1438 | 3.38079 |
| .650 | .1480 | .1613 | 3.25008 | .1507 | .1017 | 3.28151 | .1733 | .1258 | 3.34713 |
| .700 | .1334 | .1383 | 3.20077 | .1359 | .0872 | 3.22681 | .1567 | .1079 | 3.30094 |
| .750 | .1178 | .1152 | 3.13497 | .1200 | .0726 | 3.15610 | .1388 | .0899 | 3.23815 |
| .800 | .1009 | .0922 | 3.04634 | .1026 | .0581 | 3.06290 | .1191 | .0719 | 3.15205 |
| .850 | .0822 | .0691 | 2.92338 | .0834 | .0436 | 2.93552 | .0973 | .0583 | 3.03050 |
| .900 | .0611 | .0461 | 2.74153 | .0618 | .0291 | 2.74929 | .0724 | .0360 | 2.84769 |
| .950 | .0362 | .0230 | 2.42905 | .0364 | .0145 | 2.43230 | .0429 | .0180 | 2.52835 |

Notes: Same as Table 3.

inference of the social optimality of completely equal distribution of unearned income only becomes the dominant consideration in distributional matters if all income is indeed unearned, a situation which holds true neither in the real world nor in the model examined herein.

While it seems unlikely that a really compelling case against social dividend distribution in proportion to labor income (as opposed to equal distribution) may be derived from theoretical welfare economics, there are some fairly obvious practical considerations in support of this principle. Pragmatic market socialism represents an effort to design a socialist economy whose potential characteristics would be deemed reasonably attractive not merely by economists but also by members of the general public in the advanced capitalist nations. In the minds of a great many people, "socialism" is perceived as embodying an extravagantly egalitarian ethic which is inadequately concerned with matters of incentives and providing people with a "fair and adequate return" for their personal efforts. The proposed pragmatic market socialist social dividend distribution principle might provide an effective antidote to this negative attitude on socialism. A related point is that empirical work (Yunker, 1982) suggests that, under equal distribution of social dividend income, only about 87 percent of the U.S. population would receive more income as a social dividend, on an annual basis, than they currently receive as property income. But under social dividend distribution in proportion to labor income, some 94 percent of the population would be benefited by social dividend distribution of property return.

Critics from both the "right" and the "left" might be inclined to dispute the results presented herein on grounds that they are obtained from a drastically over-simplified and unacceptably unrealistic model. As to the realism of the model, that of course must be left to the judgment of the reader. As does

any economic model which aspires to generate numerical results, this model embodies a host of restrictive assumptions. A few of these are as follows: 1) the fundamental Walrasian general equilibrium paradigm, which among other things postulates perfect competition and the absence of external effects in production and consumption⁵; 2) a Cobb-Douglas aggregate production function; 3) marginal product pricing of labor; 4) a Cobb-Douglas household utility function; 5) constancy of the utility function parameters over all households; 6) a linear taxation schedule; 7) a static certainty framework.⁶

While these limitations of the model clearly constitute liabilities of the analysis, most economists have reconciled themselves to the use of models which might fairly be described as "drastically simplified" to try to illuminate important issues and controversies. Moreover, the very limited purpose of the present research should be kept in mind: it is merely to "demonstrate the possibility," as opposed to "establish the fact," that the equity-efficiency tradeoff might be higher under pragmatic market socialism than it is currently under contemporary capitalism.

While it is clear that other models and other parameter estimates would produce different numerical estimates of the advantages of pragmatic market socialism, it would seem that quite a drastic departure from this model would be necessary to actually reverse the basic qualitative result that pragmatic market socialism out-performs capitalism in both equity and efficiency terms. This qualitative result, in the final analysis, is based on only two fundamental assumptions: 1) unearned income reduces labor supply; 2) effective wage increases labor supply. These two assumptions, while not provable from the underlying utility maximization model, are nevertheless ubiquitous in contemporary economic thinking, and they are particularly prevalent in the extensive equity-efficiency literature. Indeed, one potential objection to this paper is simply that the results are "too obvious." There are at least two responses to this particular objection. First, the basic proposition of the paper only becomes obvious after one has thought about it, and to this date not many economists have done so. Secondly, the paper goes beyond a qualitative statement of the proposition to a quantitative estimate of it, something which certainly has not been done to this date.

The more forceful objection to the results from this research resides not so much in significant inconsistencies between the model utilized and conventional contemporary economic thinking, but rather in the position that the static efficiency gains from increased labor under pragmatic market socialism would be offset by static and dynamic efficiency losses from decreased capital management effort.⁷ One final table is offered which may shed some indirect illumination on the issue of the trade-off between gains from increased labor under pragmatic market socialism and losses from decreased capital management effort.

Table 7 shows the results from a sensitivity analysis with respect to the parameter ϕ , which represents the proportion of property return retained by the Bureau of Public Ownership (BPO). The BPO would be the agency under pragmatic market socialism charged with the responsibility for maintaining an adequate profit maximization incentive among the corporate executives responsible for day to day administration of the publicly owned business enterprises. In other words, the BPO is to perform the same function currently performed by private capital owners. One possible specification of the potential incentives problem of socialism is that the BPO could not possibly perform as effectively as private owners in this capacity because its personnel would be receiving only a small fraction of the financial incentive currently being paid to the private capital owners under capitalism to perform this function.

The value of ϕ used for the calculation of the results reported above was 0.05, corresponding to the benchmark 5 percent BPO retention cited in the author's prior writing on pragmatic market socialism. It might be that 5 percent retention would result in a serious and intolerable efficiency shortfall. We might then inquire if there were any retention percentage, short of 100 percent, which would enable the BPO to achieve the same level of profit motivation currently witnessed in the private capital ownership economy. From Table 7, we observe that the BPO retention coefficient would have to rise to 55 percent before the deadweight loss of BPO retention would outweigh the positive effect of social dividend distribution of property return on the equity-efficiency tradeoff. For retention coefficients of less than 55 percent, computed social welfare is higher under socialism than under capitalism, although the

TABLE 7
Sensitivity of the Relative Performance of Capitalism and Market Socialism to Variations in the Retention Coefficient

| ϕ | Income (Σy_i) | | Consumption Gini Coef. | | Social Welfare (SW) | |
|--------|-------------------------|-----------|------------------------|-----------|---------------------|-----------|
| | Capitalism | Socialism | Capitalism | Socialism | Capitalism | Socialism |
| 0.05 | .21017 (15.08%) | .24187 | .2766 (-22.00%) | .2157 | 3.34641 (2.55%) | 3.43179 |
| 0.15 | .21017 (12.76%) | .23698 | .2766 (-22.00%) | .2157 | 3.34641 (2.03%) | 3.41433 |
| 0.25 | .21017 (10.44%) | .23210 | .2766 (-22.00%) | .2157 | 3.34641 (1.50%) | 3.39659 |
| 0.35 | .21017 (8.11%) | .22721 | .2766 (-22.00%) | .2157 | 3.34641 (0.96%) | 3.37857 |
| 0.45 | .21017 (5.79%) | .22233 | .2766 (-22.00%) | .2157 | 3.34641 (0.41%) | 3.36026 |
| 0.55 | .21017 (3.46%) | .21744 | .2766 (-22.00%) | .2157 | 3.34641 (0.14%) | 3.34164 |
| 0.65 | .21017 (1.14%) | .21255 | .2766 (-22.00%) | .2157 | 3.34641 (-0.71%) | 3.32271 |
| 0.75 | .21017 (-1.19%) | .20767 | .2766 (-22.00%) | .2157 | 3.34641 (-1.28%) | 3.30344 |
| 0.85 | .21017 (-3.15%) | .20278 | .2766 (-22.00%) | .2157 | 3.34641 (-1.87%) | 3.28384 |
| 0.95 | .21017 (-5.84%) | .19789 | .2766 (-22.00%) | .2157 | 3.34641 (-2.47%) | 3.26387 |

Notes: $\tau = 0.400$, $\alpha = .25$, $\beta = .75$.

differential decreases steadily as the BPO retention coefficient increases. The implication is that a very substantial retention coefficient would be required to negate the favorable effects of pragmatic market socialism suggested by the model.

It is conceded that this evidence does not directly confront the proposition advanced in capitalist apologetics that 100 percent of property income under capitalism is earned income, constituting a fully legitimate recompense for the saving and capital management services provided to society by capital owners, and hence any redistribution or socialization of this income whatsoever is bound to have an adverse efficiency effect. The diametrically opposed proposition, of course, is simply that a pragmatic market socialist economy (with a modest BPO retention coefficient on the order of 5 percent) would maintain at least as high a level of effective capital management effort and total saving (including both private and public components) as does the contemporary capitalist economy, at the same time that it would achieve a much more equal distribution of property return through the social dividend distribution principle. If this latter proposition is valid, then property income is unearned, in the sense that altering the present distribution principle for property return to the social dividend principle advocated by pragmatic market socialism would not cause a long-term aggregate social welfare loss.

In any event, the question of the effect of the pragmatic market socialist social dividend distribution principle for property return on capital management effort and saving is completely separate from the question dealt with herein. In this paper, we have been concerned with the effect of this principle on "ordinary labor." A favorable effect of pragmatic market socialism on ordinary labor may or may not be

offset by unfavorable effects on saving and/or capital management effort. It is common practice in economic policy analysis to break problems down into separate components, to analyze each component individually, and then (at some later date) to add up the separate implications. This, for example, is the approach of Danziger et al (1981) in surveying the large literature on the effects of income transfer programs. The indications from this research should therefore be weighed together with indications from other research concerned directly with saving and capital management effort.

Aside from its contribution to the question of immediate interest, the equity-efficiency tradeoff, it is my hope that this paper might draw the attention of some economists to the pragmatic market socialist proposal itself. It has long been the author's judgment that a powerful argument can be made for socialism in this form, and that the profound skepticism concerning socialism on the part of a great many contemporary economists might be significantly abated were they sufficiently aware of the pragmatic market socialist alternative.

NOTES

1. For those interested in further reading on pragmatic market socialism, the references to this paper include most of the author's published work on the subject. Good starting points include the 1988b *CES* article ("New Perspective") which provides a concise overview of this work, and the 1975 *Annals* article ("Survey") which endeavors to situate the pragmatic market socialist concept within the wider context of market socialism. The 1979b book is a non-technical and relatively popular treatise. The other contributions are more specialized and are cited herein at the appropriate locations.
2. There is also the political argument against socialism that it is incompatible with genuine democracy. For a consideration of this argument in light of the pragmatic market socialist proposal, see Yunker (1986b).
3. The Projector-Weiss data utilized herein are of course becoming rather dated. But to the author's knowledge, there is no more recent data available on the distribution of *capital* wealth in the United States. Published data on wealth since Projector-Weiss has invariably pertained to *total* wealth, which lumps together such wealth categories as personal real estate on the one hand and stocks and bonds on the other.
4. The author's 1987b working paper ("Estimates of the Equity-Efficiency Tradeoff") contains a substantial discussion of the model validity question with respect to the capitalist version of the general equilibrium model utilized herein, as well as extensive comments on issues relating to numerical estimates of model parameters. The derived article published in 1989 ("Some Empirical Evidence") is quite a bit more abbreviated than the working paper on these matters, but it does contain somewhat more model exposition than offered herein.
5. Traditional socialists to a large extent base their critiques of capitalism on various alleged "breakdowns" of the Walrasian conditions in the real world. The present author, obviously, is trying to develop an innovative, "non-traditional" approach to socialism. In my opinion, it is insufficiently appreciated within the profession of economics that a serious socialist critique of capitalism need not necessarily be dependent on the propositions that imperfect competition and/or external effects dominate the real economic world.
6. Several recent contributors to the socialist calculation controversy literature have argued that the static market socialist plan of Oskar Lange did not respond successfully to the dynamic, entrepreneurial objections to socialism advanced by such Austrian luminaries as Ludwig von Mises and Friedrich von Hayek: Vaughn (1980), Murrell (1983), Lavoie (1985). It so happens that I advanced the same argument in my first published contribution on pragmatic market socialism (Yunker, 1974, p. 199); however, I went on in that same article to argue that the pragmatic market socialist concept provides a more effective response to these objections than the Langian plan. For a recent re-consideration of the issue of pragmatic market socialism in light of Austrian economic thinking, see Yunker (1990).
7. Note that this applies only to the capital management argument—not the saving argument. Saving is a different issue not dealt with herein.

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