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"BUSINESS SAVINGS AND THE MACROECONOMIC  
DISTRIBUTION OF INCOME:"

THE "MONOPOLY CAPITALISM" SAVING FUNCTION

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NUMBER 219

**WARWICK ECONOMIC RESEARCH PAPERS**

DEPARTMENT OF ECONOMICS

UNIVERSITY OF WARWICK  
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December, 1982

I would like to thank K. Cowling for discussion, useful suggestions and criticism; M. Harrison's comments helped in making the exposition clearer. R. Sugden provided the data used. It goes without saying that all errors are mine.

This paper is circulated for discussion purposes only and its contents should be considered preliminary.

## Introduction

The idea that different types of income - classes of income recipients will have different patterns of savings-consumption behaviour, has assumed a prominent position among economic theorists throughout the years.

Recent theorising however, does not support this view. This effectively raises the issue of the nature of the savings function under conditions of monopoly capitalism; and this problem we try to tackle in this paper.

Thus from section I, i, traces the historical evolution of the theory of the savings function; ii examines the nature of choice over consumption-savings patterns, that different classes of people possess. In iii, we try to identify those who have the control of the corporations.

IV examines the implications of our previous theorising on :

- (a) The role of business retentions in a consumption function
- (b) The role and expected behaviour of different types of income in a consumption function.

In v the previous arguments are brought together and the "monopoly capitalism" savings function is proposed. Section IIIi confronts the theory with the data while in ii a justification of our theory in terms of previous existing work is given.

The paper concludes with brief remarks.

## Ii : The Savings Function

The classical saving function of the form  $S = S_p P$ ;  $0 \leq S_p \leq 1$  (I.1)

where  $S$  = savings,  $S_p$  = propensity to save out of profits, and  $P$  = profits, can be taken to be a special form of the "general" saving function  $S = S_w W + S_p P$ ;  $0 \leq S_w \leq S_p \leq 1$  (I.2)  $W$  = wage income,

$S_w$  = Propensity to save out of wage income, from which (I.1) obtains under the classical assumption of zero savings out of wage income.

If we rather posit  $S_w < S_p \leq 1$ , (I.2) becomes the neo-Keynesian saving function. From the latter the Kaldorian (1960) version is based on the retention policies of corporations ensuring that a substantial proportion of profits will be retained at source, the risky character of profits, and finally a presumed skewness of property income in favour of relatively wealthy-high income earning households.

The second is the least promising and it moreover contrasts with Kaldor's own views, at least to the extent that profits are defined to include all types of property income, in which case the relatively safer rent and interest do not coexist comfortably with riskier types of income such as dividends and self employment income.

The first is Kaldor's favourite, and it derives from a "managerial revolution" type of reasoning such as the one proposed by Marris (1968). He can be criticised firstly for the implicit personification it attributes to corporations and to their managers' "metaphysical" independent existence. The second critique derives from the Fisherian<sup>1</sup>

approach to saving behaviour which would posit that intertemporal utility maximizing households, would reduce their personal savings in view of increasing retentions, in their attempt to maintain their preferred wealth-income positions. To its implausibility a significant portion of theorising to follow is devoted.

Pasinetti's<sup>2</sup> version assumes the form  $S = S_w (W + P_w) + S_c P_c;$

$$0 \leq S_w < S_c \leq 1 \quad (I.3)$$

In (I.3)  $P_c$  denotes the profits received by capitalists.

In contrast to Kaldor's version which is based on different propensities to consume out of different types of income, his version is based on differences between income receivers.  $P_w$  is profits accruing to labourers which was initially taken to be a correction of Kaldor's, while it is now generally agreed<sup>3</sup> that it rather represents a different assumption, given that Kaldor had in fact assumed that owing to retention and risk, workers' profits will be saved at the same proportion as the rest of profits. This provides an uneasy compromise between the two versions under the plausible assumption that property income accrues to higher income recipients, while wage income to lower income recipients. The Kaldorian inconsistency, has been attempted to be resolved among others by Lambrinides (1973).

He suggests the abandonment of the Kaldorian version of the classical saving function and its replacement by "the managerial saving function, which considers private saving to be a function, inter alia of the division of after-tax private income, between households, and privately owned corporations" (p. 47, emphasis in the original). The general idea of individuals being unreliable to provide a sufficient amount of

savings for the necessary growth to be effected by capitalist economies, originally attributed to Galbraith<sup>4</sup>, anticipated the Marglinian (1971) theory. The latter will distinguish between corporations on the one hand and households on the other and posit a saving function of the form

$$S = S_C C + S_H H; \quad 0 + S_H \leq S_C \rightarrow 1 \quad (I.4)$$

which implies that all household saving will tend to a "zero plus" amount, the latter being due to the need for some personal savings mainly attributable to lags of adjustment of consumption in view of increasing incomes. Essentially savings will only be made out of corporations. To this we soon come back. An alternative way the Kaldorian and Pasinettian version could be reconciled is due to Bliss (1976). To him the different propensities assumption "would not reside in a "high Propensity to save out of profit" but rather in a high propensity to save out of the high incomes that would accrue to certain large scale receivers of profit, the converse of Kaldors view ..." (p. 138) This seems highly plausible. After all, corporations are controlled by individuals, and it seems that only an analysis of this type of control, along with the identification of those who exert it, is the only means by which the "monopoly capitalism" saving function could be derived. The "generality" of (I.2) and the "fixed propensities" assumption has been severely criticised by neoclassicals. First of all to Bliss the assumption that a given fraction of profit or income is saved, is implausible; "to assume such a ratio constant in advance is to take as given something that ought to be the subject of economic analysis" (p. 126). Dixit (1976) shares the view and it definitely has much to back it up. Surprisingly both disregard the empirical work available, which seems to support the neoKeynesian assertion.

Secondly, the neoKeynesian treatment implies equal average and marginal propensities, which, however as Hache (1979) observes, will only seem to complicate the models, rather than impair their results. The neoclassical theory now, in its original Fisherian<sup>1</sup> form, takes savings to be determined by the independent decisions of all households each making a deliberate and conscious allocation of current income-wealth between present and future consumption. In view of that, even the proportional function of the form  $S = SY$ ;  $0 < S < 1$  (I.5) derived by (I.2) under the assumption  $S_w = S_p = S$ ; has been dismissed by most neoclassicals. This theory, however, has been criticised too. It firstly disregards the possibility of savings taking a form of obligation, as we will argue for the case of corporate savings. It moreover, is "by construction" unable to take "account of the uncertainty of the future ...", and carries with it the implicit notion that every household is perfectly "creditworthy" (Bliss, p. 126). The third strand of criticism regards its applicability and it is due to Marglin. Thus Modigliani's<sup>5</sup> "life cycle hypothesis" and the Friedmanite<sup>6</sup> "permanent income hypothesis" have in fact, "little left of their lofty Fisherian beginnings when put in a form suitable for testing against time series or cross section data" (p. 75). If this is so, it is hardly surprising why neo-Keynesians have generally rejected the neo-classical assumption of optimizing behaviour, being content to resort to simple rules of thumb as a means of describing an imperfectly competitive, uncertain world, from which general approach Hache observes "the neo-Keynesian saving function may be regarded as an example" (p. 173).

The above does not imply that the neoclassical tradition can be dismissed. After all the uncertainty of the real world does not and must



not imply an agnostic stance on the part of the social scientist. What it does imply though, is that neoclassicals should no longer snobbishly disregard the empirical support to such "ad hoc" structures as the classical and neo-Keynesian savings function, which could very well imply that the plans of two different classes of intertemporal utility maximizing individuals are such that, they give rise to a situation where one of them finds it preferable to consume a smaller part of its income, while the other either does not choose or is constrained to do so. We could thus have a situation of constrained optimisation, an upper limit of consumption for capitalists being imposed by survival of the system considerations, such as the one proposed by Cowling (1982, p. 48) while a lower limit for consumption for workers being imposed by their socially defined subsistence requirements. Between these two limits a host of other factors, (advertising, retention policies, pension funds schemes, desire for power, the Schumpeterian<sup>7</sup> family motive etc.), can play a certain role, the point being that they will only work within relatively narrow limits, which will lead in a more or less constant proportion being saved out of different types of income. In this way the neoclassicals' concerns would have been solved, the empirical support to neo-Keynesians would have been explained, and we would have the theory of savings behaviour.

In this essay, and bearing continuously in mind the above qualifications, we will only try to offer a suggestion along the "fixed propensities" type of approach, which appears to us, to capture the ex-post saving behaviour of different groups of income receivers, under monopoly capitalism. A rather sketchy outline of the origins of such behaviour will also be given, and our alternative will emerge by means

of criticizing the Marglinian version of savings behaviour.

Iii: "Asymmetrical Choice?"

To start with, a crucial point emerging from the Marglinian theory is that accumulation in modern capitalism, can only take place via the hierarchical control of corporations' managers on households, via their retention policies. Households are taken to be ready to consume all income they receive.

Now, while it seems undeniable that the functioning of modern capitalism has led to a situation where an increasing amount of community's income is transmitted to the large corporations in the form of shareholding, and that an increasing proportion of that income is retained by those corporations in contrast to the preferences of the bulk of the 'owners' of these shares, generalising the argument to include all shareholders-owners apart from managers is illegitimate. If nothing else this leaves aside the "who is who" of the managers, which omission is indeed a common feature of managerialism. Our alternative view will regard corporations as being subject to an asymmetrical control, by a specific group-class of people who, viewing retentions as their own personal income, as Sugden (1981) has previously observed, will determine their consumption - saving patterns by considering the allocation of the such viewed income between current and future consumption, subject to the minimum saving constraint imposed by the necessary level of accumulation for the survival of the system itself, that is, their own existence. Workers on the other hand will be taken to have no control on corporations and their intertemporal utility maximizing consumption-savings

patterns will be subject to the maximum savings limit imposed by their subsistence requirements.

The crucial implication of the above will be that, those with control will make a decision on retentions determined by their personal preferences on consumption subject to the accumulation constraint, or they will save what they have decided not to consume, the tendency for savings being to take the form of retentions both for preference for internal expansion reasons, and tax advantages considerations, while those with no control will, if shareholders, view retentions as a form of obligatory savings, which to the extent they are close to, or bigger than, the personal savings they would otherwise do, will result in their propensities to consume being near or equal to one, an effect complementing their lower constraint to consume shaped by their subsistence requirements.

If now capitalists consume what they do not retain, small shareholders save more than they otherwise would have chosen to do because of the obligatory savings character of retentions, therefore consume as much as they can get, and if workers, or at least the part of them not owning shares, are obliged to consume everything they can find, for both subsistence requirements and because of the decrease in their notional income arising from pension funds schemes as various studies have shown<sup>8</sup>, the Marglinian prediction of households (all households) consuming everything they can lay their hands on, will be re-established but this time under a totally different type of reasoning, that is, that the structure of consumption-saving patterns of different classes of people is essentially determined by the degree of control they possess over corporations,

therefore business savings, subject to the constraint(s) each of them faces.

The origin of personal savings remains to be explained which can be accomplished in terms of partial adjustment, and transaction needs. The first is Marglin's explanation while the role of the second is obvious. A third possibility, that is potentially excessive and undesired on the part of capitalists level of dividends, will be examined in the next section.

iii: "Those who control"

We have, by now, used indistinguishably terms such as managers, capitalists or "those who control" and to this obscurity this section is devoted. To Marglin, "the rate of capital formation remains reasonably high in capitalist societies because hierarchical organisation permits a relatively small number of individuals to decide how much the rest of us will save. If by contrast savings decision were left to individuals - whether capitalists or workers - accumulation of productive capital, ... would come to a virtual standstill" (p. 74, emphasis added).

It appears, therefore, that those with control, are a small group of individuals whose preferences-decisions can be against both workers and capitalists.

Who are they? "Modern corporate management" answers Marglin which

"obliges workers as well as nominal owners to provide for their collective future ...". It is his belief moreover that "households tend to spend whatever income they can lay their hands on", and that "households do not save by and large and on the average, except inadvertently, when their incomes are rising faster than they can adjust their spending". (p. 80) We have already explained in the previous section that such an empirical observation can be conceivable, but its origin is due to totally different reasons than the ones Marglin is advancing. His theory, to be sure, is very much in accord with modern managerialism. The latter, seems to have invented a "deus ex machina", that is a group of people whose work is simply to organise and adminstrate, impersonal and neutral, "individuals" but neither capitalists nor workers, in the corporations and at the same time out and above of all the other people whose interests are connected with the corporation.

Those people now, the managers, both have and pursue interests, but only their "own" interests, very much in accord with the individualistic tradition. Overlappings of interests with the owners - shareholders are welcome, but if a conflict arises, alas for the latter!

Such views have led to very romantic ideas regarding the functioning of the capitalist system, such as "the socially responsible corporation", and Marglin, albeit critical to such extreme versions of these views, seems to fall in the same trap.

To find out who are really in control of the corporations, one has to go beyond managerialism, and Cowling's (1982) "Monopoly Capitalism" seems to

be a most promising starting point. In there the author seeks to "identify two basic struggles involving managers and shareholders, one between big capital and small capital, with big capital occupying a normally dominant position within the corporation, and the other between high-level and lower-level management, where high level management includes the important representatives of big capital." (p. 52, emphasis added). The emphasised part is crucial for our purposes. If this is so, the very essence of managerialism and Marglin's version of the latter, that is, the independent existence and pursuit of goals by the managers is undermined. Their decisions will now seem to be dependent on, if not identical with, big capitals' choices. High-level managers, being big capital themselves, or the latter's faithful servant, are embodied with big capital, and for analytical purposes it is not far fetched to argue that their very "raison d' être", at least as a separate category, is lost. There remains the empirical, in the final analysis, question of whether or not such an overlapping does exist, where, it appears to us that Baran and Sweezy's (B&S, 1966) evidence is just too compelling. In view of the above we will identify only one basic (antagonistic) struggle, that is, between big capital and high level management (capitalists) on the one hand, and workers on the other, while all the rest of the potential conflicts arising will be taken "ab initio" to be non-antagonistic, without this implying that they cannot become antagonistic, circumstances permitting.<sup>9</sup>

If now, by a similar reasoning, we subsume low-level management, into small capital, a two basic classes economy emerges, while the now redefined small capital becomes synonymous to the Sweezian (1970) "new middle class". The importance of the two classes-types of income economy for the

"savings function" has already become clear. The complications arising from the introduction of a third class will soon be examined.

iv: Predictions

There are at least two predictions that can be derived from the previous analysis, regarding (a) the treatment of retentions in a consumption (savings) function, and (b) the effects of income distribution. Both are crucial for the specification of the consumption function, and consequently the "monopoly capitalism saving function", which is proposed under the heading "synthesis", so that they are examined in some detail in this section.

a: "On Retentions"

A common prediction deriving from both the Marglinian and the "asymmetrical control" hypothesis, is that, in a private savings function including personal disposable income and corporate retentions among its other explanatory variables, the coefficient on the former will tend to be insignificantly different from zero, while the coefficient on the latter will tend to be insignificantly different from one. In an exercise of this kind Lambrinides (1974) used US data for the period 1919-1958 and "inevitably" did not support the prediction. There are at least two explanations for the "inevitably" above. The first regards the data period covered. Clearly to the extent that the above prediction is a process not complete yet, the most recent data are required. This, however, is hardly a satisfactory explanation. The second is twofold and it is crucial in that it provides a means by

which the two hypotheses can be discriminated. But let us first explain our choice of a private savings instead of a consumption function. ( $S_{\text{private}} = S_{\text{personal}} + S_{\text{corporations}}$ ).

On theoretical grounds it would seem plausible to invert the previous reasoning and argue that in a consumption function including the previously referred explanatory variables, the coefficient on personal disposable income should tend to one, while the coefficient of the retentions variable should be negative and insignificantly different from zero. But this is not so. Retained earnings cannot be both savings and at the same time a concurrent and independent determinant of consumption, because in every specific period they have been chosen to be saved therefore not consumed, by their very nature. This now implies that treating retentions this way will be a mis-specification of the consumption function, a very dangerous one too, in view of Feldstein's (1973) findings who, by using retentions concurrently and as an independent explanatory variable in his "components of capital gains" model of consumer behaviour, found a propensity to consume retained earnings of one half for 1929-1966 (excluding 1942-1947) for the US. These results moreover, are more or less replicated by Feldstein and Fane (F & F, 1973), for the British postwar experience. Apart now, from being in contrast to Lambrinides results, who, in his private saving function, found a positive and significant coefficient on the corporate retentions variable of about 0.7, and the possibility that both Feldstein and F & F are picking up the effects of some missing variables, their results have been criticised by Marglin on the basis of causality running the other way around. His argument however, does not preclude a "feedback" relationship, that is, both variables causing each other, which suggests that Feldstein's and F & F's results have to be explained differently.



At the moment we go back to our suggestion regarding the timing of the retentions variable.

If it is illegitimate to use retentions concurrently in a consumption function, the natural question arises, what the effect of lagged retentions will be expected to be. Our previous analysis has suggested that retentions is a form of obligatory savings for the great mass of shareholders, which implies that if previous years' retentions have increased, previous periods' disposable income for these people has been reduced, therefore this year's consumption has been reduced, under the very plausible assumption that disposable income affects consumption with a lag. Inverse reasoning applies for the case of decreasing retentions which implies that the inclusion of lagged retentions in a consumption function will result in a negative and significant coefficient for this variable.

b: "On Propensities"

A second crucial prediction of the Marglinian and our version, not tested however by Marglin himself, regards propensities to consume out of different types of income or/and classes of income recipients. Specifically it is implied by the Marglinian version that these propensities will be equal to each other and will tend to be close to one, "within a short period, say a year or so, rather than requiring anything like a life time" (pp. 85-86). These seem to be, heavy requirements indeed and markedly in contrast with the available empirical evidence.<sup>10</sup> This contradiction follows from Marglin's symmetrical treatment of all households along with the impersonality with which he views them. Under our alternative, retention policies are a matter of choice of those with

control who in contrast to Marglin are households themselves with interests overlapping with his hierarchical controllers, managers. But if so, the crucial question arises; are our "capitalists", the only ones who need to save for accumulation purposes? The answer is definitely negative and this renders a closer examination of Sweezy's (1970) "middle class" appropriate. Apart from including shareholders, this also includes self-employed people as well as owners of unincorporated and professional enterprises, who inevitably, and contrary to what Marglin posits will have to save exactly to the same extent they want to retain their identity, given that their very existence as such will depend on them being able to keep their profession, which by its very nature presupposes the saving by them of a part of their earnings. This we will name "quasi-profits" and the part of it saved "quasi-retentions".

On this special point our alternative does not necessarily have to be taken as contrasting the Marglinian theory. It can also be seen as a correction of the latter, the crucial point being that existing empirical work will be inappropriate to test its prediction, if it treats retentions and "quasi-retentions" inconsistently. This is so given that following Klein and Goldberger's (K & G, 1955) innovative work, it is now a long established tradition to treat corporate retentions as a flow of funds unavailable for consumption. The above named authors characteristically, after puzzling for a while on the justifiability or not, of their particular treatment, have "subtracted corporate savings from non-wage, non-farm income in the process of getting disposable shares" (p. 17), while at the same time their version of property income is taken to include earnings of unincorporated and professional enterprises. This treatment, combined with the inclusion of self-employed income adopted in

other studies<sup>10</sup>, plus the fact that most of them are rather dated, appears to offer a sufficient explanation for the significant differences found in the propensities of the different types of income examined. It is our assertion that clearing the property income variable of the above mentioned components and examining the most recent data available would lead to the verification of the "corrected" Marglinian hypothesis. Effectively this argument implies treating profits along with "quasi profits" and retentions along with "quasi retentions", which does justice to consistency. This now provides the explanation we have promised under our first prediction regarding the Lambrinides findings; namely, if "quasi retentions" had been extracted from personal disposable income and instead added to the retained earnings variable, the coefficient on the former should decrease while that on the latter should increase.

The second strand of the argument is that even so, the disposable income coefficient could not be zero, as long as some personal savings must exist for the already explained reasons.

The above analysis does, by no means, imply that we have managed to find what income accrues to whom, under conditions of monopoly capitalism, that is, the appropriate "savings function" under its dominance, to which we presently turn.

#### v:     Synthesis

It has been argued that following a long established tradition, economists make inconsistent use of retentions and "quasi retentions" in the

aggregate consumption function, thus making our "corrected" form of the Marglinian hypothesis both irrefutable and at the same time unverifiable by existing empirical work. Our arguments provide an explanation for the existing findings regarding different propensities out of different types of income and a means by which the inconsistency could be solved, namely the subtraction of "quasi retentions" from both personal disposable income (prediction one), and property income (prediction two).

While our corrected version should be expected to lead to the verification of the Marglinian hypothesis, its empirical estimation poses formidable problems due to the form of our available data. Moreover, although ways to approximate "quasi-retentions" have been proposed in the literature<sup>11</sup> the crucial thing is to realise that both the Marglinian and our corrected version are wrong.

This is because for our real concern, that is, the specification of the "true" savings function under monopoly capitalism and consequently the "true" propensities out of different classes, what we need is to include rather than exclude all existing types of income as well as to identify, those to whom it accrues. As we have already argued retained earnings are income. Corporate income as Marglin would suggest but household's income as the Blissian alternative would require.

Our analysis of control implies that this will only be the income of those who control corporations, our "capitalists". This now implies taking corporate retentions to be property income, which effectively gives the "monopoly capitalism" savings function of the form

$$S = S_w W + S_c P' \quad \quad O = S_w < S_c \leq 1 \quad (I.6)$$

$$\text{or } S = S_c P' \quad \quad O < S_c \leq 1 \quad (I.6')$$

where property income ( $P'$ ), is now taken to include retained earnings, along with the 'traditional' dividends, rent, interest and self-employed income. ( $I.6'$ ) can either be regarded as the classical savings function augmented to include rent, interest and self-employed income, or alternatively as the traditionally used in empirical work definition of property income, augmented to include corporate retentions. The former idea is not new. It can be traced back to the Marxian notion of "surplus value". The latter, we think, is the major limitation of existing empirical work. Either way the crucial implication is that economists were unable to realise the crucial role of business savings under monopoly capitalism. This realisation renders the redefinition of property income and the re-specification of the consumption function a demanding need.

We may now observe that this treatment of retentions is essentially the converse of the one necessary for the verification of our "corrected" form of the Marglinian hypothesis, and this indeed explains our assertion that even if correctly predicting, his theory itself would be wrong. The consistency of our treatment derives again from the fact that at last retentions and "quasi retentions" meet happily under the same roof for both personal disposable income and property income, thus giving the "true" marginal propensities to consume for both of them. The econometric implications of the above analysis are examined and tested in the next section.

### III: Empirical Results.

The analysis of the previous section points towards a consumption function of the form

$$C_t = \gamma_0 + \sum_{i=0}^{\infty} \lambda^i (\gamma_1 W_{t-i} + \gamma_2 P'_{t-i} + \gamma_3 S_{ct-1-i}) \quad (II.1)$$

where  $C_t$  = consumption in period  $t$ ,

$W$  = wage income

$P'$  = property income, and

$S_c$  = Corporate Retentions

In this form, distant values of the explanatory variables assume a geometrically declining effect on present consumption, while moreover, as it stands, the equation carries with it the implication that all explanatory variables have the same lag structure on the dependent variable. In this form (II.1) suffers from estimation problems due to the existence of an infinite distribution of lags. The application of the "Koyck transformation" involves lagging (II.1) by one period and multiplying by  $\lambda$ , and then subtracting the resulting equation from (II.1). The result is an equation including a lagged dependent variable among the other explanatory variables on the right-hand side. This treatment effectively solves to a great extent the problem of degrees of freedom, and partly the multi-collinearity problem, given that the lagged endogenous variable will generally be less correlated with the exogenous variables, than the successive values of the latter.

It causes no less problems though. To start from the most general type of critique, it can be considered as a general "Brown type" specification which as Wallis (1979) has observed, suffers from ad hocity in that it is not "based on any description of economic behaviour" (p. 21). This seems to be less so for our variables in question, which by their very nature affect consumption by their past behaviour, but it definitely applies, firstly to the assumption that this effect must be geometrically declining, and secondly to why they must have the same lag structure.

The different timing of the corporate retentions variable in (II.1) accounts for our theoretical requirement that this variable should only be included in the consumption function lagged by one period. Thus the Koyck transformed (II.1) gives a one period lagged retentions variable along with concurrent wage and property income variables. Another problem is caused by the existence of the lagged dependent variable in the right hand side. It regards the power of Durbin Watson (DW) statistic, in detecting autocorrelation. Namely, it has been shown<sup>12</sup> that in such cases the DW is biased towards two, so that throughout this paper the Langrange Multiplier (LM)<sup>13</sup> test is used.

When the DW indicates autocorrelation this is taken to apply and moreover following Granger and Newbold (1974), DW's low values are taken to be indicative of mis-specification in our estimated equation.

The data we use are annual and cover the period 1955-1980 for the U.K. They are described in Appendix I. The results obtained from their confrontation with our Koyck transformed (II.1), and under our definition of property income (P') to include corporate retentions, is given in

equation 1, table 1.

All variables are significant at the 5% significance level of a two tailed t test, and with expected signs. According to our expectations the short run (SR) marginal propensity to consume wage income is very much higher than that for property income and implies that 0.72 of the former is consumed in the short run, while the long run marginal propensity which is given by dividing its coefficient by unity minus the coefficient of the lagged dependent variable implies that (1.1) of wage income is eventually consumed. This implies dissavings on the part of the workers.

The short run propensity to consume property income is 0.24 which in the long run becomes 0.38. According to our analysis lagged retentions have a significant depressive effect on consumption. The explanatory power of the equation is very high which is not surprising in view of our use of time series data. In general all  $R^2$ 's exceed 0.99 so that, they are given no further consideration. The DW falls in the inconclusive region. The LM test however indicates that the equation can be considered free of up to fourth order autocorrelation at the 5% significance level. Equation (E) 2 examines the same relationship by use of the "traditional" definition of property income. The equation is inferior by all conventional standards ( $R^2$  and DW) while the latter suggests mis-specification. The LM test suggests the existence of significant autocorrelation. The results which as they stand support our arguments must be treated with care. No systematic treatment of autocorrelation is followed because the "traditional" definition is not our main concern. As it stands E2 shows propensities to consume different types of income much closer to each other



than the ones suggested by E1. Specifically the SR propensities to consume wage and property income are 0.73 and 0.48, which in the LR become 1.09 and 0.69 respectively. The remaining difference can, as we have argued be attributed to the inclusion of self-employed income in P in E2 from which certain saving must be expected. Lagged retentions have again a depressive significant impact on consumption. Equation 3 attempts to test our hypothesis that including retentions concurrently in the consumption function along with the traditionally defined property income will have no effect on consumption and will moreover lead to its mis-specification. The very low DW suggests that this is so. Autocorrelation also exists, as shown by the LM. It appears that if any credibility can be given to these results, which we doubt, they also support our argument regarding different propensities, in that the two propensities now are very close to each other (0.61 and 0.64 respectively in the SR which becomes 0.81 and 0.85 in the LR).

As expected the coefficient of the retentions variable is negative and insignificantly different from zero. The surprising feature of equation 3 is that property income appears to be consumed in a higher proportion than wage income. This although indicative, as it stands, of the implausibility of the "traditional" definition, cannot be taken seriously, and we would not expect it to persist in a better specification. This we test in equation 6. Equation 4 includes a time trend in our basic equation 1, which is positive and significant but it does not substantially affect our results. All variables have significant coefficients with the correct signs as before. The SR propensity to consume wage income is reduced while the estimate of the propensity to consume property income is slightly increased. Equation

5 is equation 1 augmented to include the interest rate among the explanatory variables. Such a treatment would be suggested by the neo-classical theory and a negative and significant effect on consumption should be expected given the presumption that increases in interest will result in households saving more. This is the case and E5 is arguably our best equation. All variables are significant and with expected signs and SR and LR propensities out of wage and property income are respectively 0.76 and 1.1, and 0.25 and 0.38. Lagged retentions are as before, and the interest rate coefficient is negative and significant. The DW equals two, and the LM indicates no autocorrelation. With regard to the interest rate variable, another explanation could reside in the argument, that capitalists' motive to have their savings in the form of retentions diminishes when increases in interest rates are sufficient to compensate them from the loss incurred from the tax disadvantage arising when the former are in the form of personal savings. Equation 6 is equation 3 augmented to include the interest rate. The adverse finding of equation 3 regarding different propensities disappears in that the SR propensities to consume wage and property income are 0.71 and 0.62, and the LR 0.91 and 0.80 respectively. The LM does not suggest that significant autocorrelation exists. All other coefficients are as in equation 3 and the low value of DW, although now in the inconclusive region, could still be taken to support our suggestion regarding the mis-specification of the equation. In any case the results are markedly in contrast with Feldstein's and F & F's findings and they lend support to the Marglinian hypothesis in that even property income is consumed in a very high, near to one, proportion.

The argument up to now was that business savings should be treated

TABLE 1.

LEVELS: DEPENDENT VARIABLE; AGGREGATE CONSUMPTION ( $C_t$ ): ANNUAL DATA; 1955-1980 U.K.

## "TESTS OF THE "MONOPOLY CAPITALISM" SAVING FUNCTION"

EQN NO	Constant	$W_t$	$P'_t$	$(W_t + D_t)$	$(P'_t - D_t)$	$P_t$	$S_{ct} - 1$	$C_t - 1$	$S_{ct}$	T.Trend.	I.Rate	$D_t$		LM	DW	$R^2$
1	-848.236 (-0.77)	0.72* (8.18)	0.24* (4.04)				-0.54* (7.18)	0.37* (5.43)						4.2	1.6766	0.998
2	647.490 (0.38)	0.73* (7.40)				0.48* (3.15)	-0.39* (4.90)	0.30* (3.68)						12.2**	1.1976	0.997
3	4391.72 <sup>+</sup> (1.96)	0.61* (4.23)				0.64* (2.85)		0.25* (2.12)	-0.06 (-0.52)					15.5**	0.8351	0.995
4	-6468.3* (-2.42)	5.61* (5.50)	0.27* (4.84)				-0.52* (-7.54)	0.26* (3.27)		241.890* (2.27)				5.0	1.7142	0.998
5	-1926 * (2.07)	0.78* (10.8)	0.25* (5.20)				-0.49* (-7.90)	0.34* (6.10)			-112.577* (-3.49)			5.3	2.0570	0.999
6	2352.96 (1.16)	0.71* (5.57)				0.62* (3.28)		0.22* (2.10)	-0.01 (-0.12)		-159.323* (-2.43)			7.2	1.2869	0.996
7	457.311 (0.25)	0.79* (5.90)			0.18* (2.13)			0.19 <sup>+</sup> (1.68)			-157.140 (-2.70)	0.71* (2.70)		5.8	1.3134	0.996
8	544.563 (0.66)			0.68* (8.53)	0.33* (6.32)		-0.41* (4.97)	0.31* (3.82)			-105.170* (-2.68)			7.3	2.0197	0.998

(t Ratios in parentheses) \* Indicates significance at the 5% level.

<sup>+</sup> Indicates significance at the 10% level.

\*\* Indicates significance at the 0.025 level.

as property income, if the "true" propensity to consume property income is to be found. We can now test a further implication of our analysis of control regarding the behaviour of dividends. The argument was that once dividends have been distributed to shareholders, they will tend to be immediately consumed. Moreover, while this will reflect for small shareholders their desire to consume everything they can lay their hands on, for capitalists it will just reflect their choice over their consumption-savings patterns.

In E7, we directly test our previous arguments regarding dividends by including them concurrently in the consumption function along with property income, as redefined, wage income, interest rate and lagged consumption. This treatment moreover, accounts for a potential critique regarding our modification of the Koyck transformation as to how sensitive our results are to the specific treatment of lagged retentions we have adopted. Thus in this equation they are excluded. The equation is well determined and although the DW is in the inconclusive region, the LM indicates no autocorrelation. All coefficients are significant at the 5% level apart from lagged consumption which is only significant at the 10% level, and the SR and LR propensities out of wage, property and dividend income are 0.79, 0.18 and 0.71 and 0.97, 0.22 and 0.88 respectively. This implies that dividends are in fact consumed in a very high proportion, albeit not equal to one as Marglin's theory would predict. Nonetheless it is very close to workers' propensity which supports our apriori theorising. As expected the property income's propensity is further reduced implying that it is dividends which are saved the less among the various components of property income. In Equation 8 we are going back to our previous specification and include

dividends along with wage income. Again we subtract them from property income. This could be seen as a means of cross checking our previous results. Again all coefficients are significant and with expected signs. Compared with equation 5 the coefficients on wage income is reduced which is in accord with our previous findings that not all dividends are consumed. The coefficient however of the property (excluding dividends) variable is unexpectedly high. It is higher than the one in equation 5 and it markedly contrasts with the one in equation 7. Although the difference with the latter could be explained in terms of the different specification this is not the case for equation 5. This raises some doubts with regard to the exact role of dividends in consumers' behaviour. It could be argued that whenever corporations are obliged, either because of small-shareholders' pressure or constraints imposed by the stock market valuation of the firm, to pay out an excessive amount of dividends, only part of the consumers (workers-small capital) tend to consume their new income while capitalists simply switch to other forms of savings. Such a behaviour is an immediate implication of our analysis of control. Given that capitalists, as argued, make their decisions with regard to their consumption level, and save the rest "preferably" in the corporation, it is natural whenever they are constrained to do so, to stick to their pre-decided level of consumption changing simply their structure of savings. Such an argument, we think, provides a very plausible explanation to our adverse finding.

Nonetheless, our results must be taken with a pinch of salt. Firstly the DW in equation 7 could be taken to imply mis-specification of this equation. Secondly regarding our data sample, it could be argued that although examination of the most recent data is crucial for the consistent

testing of our analysis, a 26 observations sample can by no means give rise to conclusive results. When, moreover autocorrelation appears to exist in our equations the estimates of the regression coefficient will be inefficient. Fortunately this only occurs in the equations estimated by use of the "traditional" definition of property income, and never appears to be the case when our correct definition is used. Apart from these problems, the feeling emerging from these results is that they almost unexceptionally support our theoretical suggestions. The possible exception of dividends, is subject to our alternative explanation. In general our results are very much the same as the ones obtained by Kalecki (1971) with a totally different method, forty years ago. The laws of motion of our society appear to be surprisingly stable.

ii: Justification.

To start at the beginning K & G (1955) in their pioneering work, found the size distribution of income to be "a desirable variable, in an aggregate consumption function" (p. 4), but due to data availability they went on to approximate it by the functional distribution of income. To this we do not object. The exercise has been repeated for the UK by Klein et al (1961) while Burmeister and Taubman<sup>14</sup>, Surrey<sup>14</sup>, and more recently Murfin (1980) have made their own independent contributions on the issue. Space precludes any detailed analysis of their results, and in Cowling (1982) and Hacche (1979) useful summaries can be found. The essential point, however, is that, all of them do follow K & G's practice in excluding retentions from property income. To this we have objected, which essentially raises the issue of the "correct" definition of

property income. Our suggestion was to include them in the property income, and this requires justification.

There are at least four pieces of evidence giving support to our view. In his "Economic Dynamics" Harrod (1970) advanced the argument that apart from differences in the motives with regard to corporate and personal savings, "the result is that individuals, shareholders or entrepreneurs, are provided with additional capital resources which may serve them to meet their private needs ..." (p. 47) This essentially can be taken to imply that corporate retentions are income.

Sugden (1981) further extends the argument. He suggests that retentions should be viewed as income of dominant households, that is property income. This implies that in a consumption function of the form

$$C_h^d = a_1 + a_2 Y_h^d + a_3 S_c \quad (II.2)$$

where the superscript d implies dominant, the coefficients on  $a_2$  and  $a_3$  should be the same. We have shown why this is wrong and argued that (II.2) means mis-specifying the consumption function. Our previous analysis has suggested a consumption function of the form

$$C^d = a_1 + a_2' (Y_h^d + S_c) \quad (II.3)$$

and our expectations were:

$$0 < a_3 < a_2' < a_2 < 1,$$

which moreover were supported by our data. To be sure (II.2) is the result of a long standing confusion regarding EX ANTE possibilities

and EX POST choices. Retentions are property income only EX ANTE. EX POST they have been chosen to be used as savings, therefore not consumed. Expecting, therefore, any positive-independent impact on their part on the consumption function is just absurd. (II.3) now is the inverse of (I.6), our "monopoly capitalism" savings function that is its counterpart consumption function. The third piece of evidence goes as far back as 1966. In his "Corporate dividend policy", Brittain (1966) suggests that, "A second important consequence of the trends in dividend payments is their effect on changes in the measured degree of inequality of individual income.

Since most studies of individual income distribution do not impute corporate saving to individual stockholders the fall in the dividend pay-out ratio was reflected in these studies as a levelling effect on the distribution of income ... This indication that the restriction of dividends by corporations in the early postwar period played a significant role in the apparent equalization of individual incomes clouds the meaning of the income distribution statistics. Increased retentions cuts the share of the wealthy in total personal income, but this may be misleading because any resulting capital gains are generally excluded from data on personal incomes" (p. 6, emphasis added).

This analysis provides very useful insights. Its immediate implication is that, to the extent corporate retentions are growing over time the traditional definition of the property income will tend to show a bigger and bigger propensity to consume, which will eventually tend to catch the propensity to consume wage income. This is implied by our "corrected" version of the Marglinian hypothesis.



Our final piece of evidence comes from Kalecki's (1971) study on the determinants of profits. In it gross-profits were explicitly taken to include undistributed profits, which essentially raises the issue of whether or not the thus defined profits should be considered as equivalent to property income. We think they should. It is striking, that, although for conventional thinking the words profits and property income tend to be used indistinguishably, property income is, as a rule, taken to exclude retentions. Solving this long standing confusion we think is a demanding need, and it is towards this direction that we hope this paper has made a significant first step.

#### CONCLUDING REMARKS

We have shown that the inability of modern economists to realise the exact role of business savings, has led to unrealistic views regarding the workings of our world. The consequent inappropriate exclusion of corporate retentions from property income in the consumption function has led to its mis-specification and moreover to misleading results with regard to the "true" saving propensities of the different classes of our society. Our "monopoly capitalism" savings function provides a solution to both problems. To see how far reaching its implications are one has just to look at the huge amount of empirical work that has been done on the consumption function. If our suggestions are right they all need re-estimation. Income distribution statistics need to be redefined too.

FOOTNOTES

1. Our understanding of his theory derives from expositions given by Bliss (1976), Lambrinides (1974), and Marglin (1971).
2. Originally in Review of Econ. Studies (1962). Our analysis derives from Hacche (1979) and Murfin (1980).
3. Hacche (1979, p. 22)
4. By Lambrinides (1973).
5. Originally in Ando, A. and Modigliani, F., Amer. Econ. Review (March 1963). Our understanding is based on Lambrinides (1974).
6. For an exposition see Wallis (1979).
7. in Lambrinides (1973).
8. There is a huge literature now on this topic including work by Cagan and Katona for the U.S. and Green for the U.K. (E.J. March (1981) where other relevant references can be found.
9. See for example Cowling (1982) for a rather detailed analysis of a conflict between high-low level management as it has been reflected in the adoption of the M-form organisation.
10. Referred in the section II.ii. For surveys see Hacche (1979), Cowling (1982), and Murfin (1980).
11. In Hacche (1979) alternative methods are described.
12. By Nerlove and Wallis. Further developments include Malinvaud For discussion see Koutsoyiannis (1977).
13. For a description see Stewart and Wallis "Introductory Econometrics" (1981).
14. Summaries in Murfin (1980).

APPENDIX I : Data Description

Annual data for the 1955-1980 period have been used throughout.

The series 1 to 6 are deflated by the general index of retail prices, 1975 = 100; taken from "Economic Trends Annual Supplement (ETAS) 1982" CSO.

1: Consumption (C)

Includes total consumers' expenditure on goods (durable and non-durable), and services. Source: "ET Annual Supplement 1982" CSO

2: Wage Income (W)

Total personal disposable income minus property income.

Source: Economic Trends and the Blue Book.

3: Property Income (P)  
"traditional" definition

Income from rent and self-employment, before providing for depreciation and stock appreciation, dividend and net interest receipts, transfers to charities from companies and the imputed change for the capital consumption of private, non-profit making bodies, minus the income tax on rent of land and buildings, dividends, interest, and trading income and minus the national insurance contribution of self-employed and non-employed persons.

Source: Economic Trends and the Blue Book.

4: Property Income (P')  
(our definition)

(P) plus undistributed income, after taxation of companies and  
financial institutions (Sc)

5: Retained Earnings (Sc)

As defined in 4: before providing for depreciation, stock  
appreciation, and additions to reserves.

Compiled from "ETAS 1982" (CSO)

6: Dividends (D)

Total dividends of companies and financial institutions.

Source: "ETAS 1982" (CSO)

7: Interest Rate (IR)

The treasury bill yield %;

Source: "ETAS" (CSO)

Bibliography:

- Baran, P. and Sweezy, P. (1966) "Monopoly Capital" Penguin.
- Bliss, C. (1976) "Capital theory and the distribution of income",  
North Holland Publishing Company.
- Brittain, J. (1966) "Corporate Dividend Policy" Brookings Institution..
- Cowling, K. (1982) "Monopoly capitalism" Macmillan.
- Dixit, A. (1976) "The Theory of Equilibrium Growth" Oxford University  
Press.
- Feldstein, M. (1973) "Tax incentives, corporate saving and capital  
consumption in the U.S." Journal of Political Economy, 2.
- Feldstein, M. and Fane, G. (1973) "Taxes, corporate dividend policy and  
personal savings: the British postwar experience".  
Review of Econ. and Statistics, Vol. LV. Nov.
- Granger, C. and Newbold, P. (1974) "Spurious regression in econometrics"  
Journal of Econometrics 2.
- Hacche, G. (1979) "The theory of Economic Growth. An Introduction",  
St. Martin's Press Inc.
- Harrod, R. (1970) "Towards a Dynamic Economics" Macmillan.
- Kaldor, N. (1960) "Essays on Value and Distribution" Duckworth Ltd.
- Kalecki, M. (1971) "Selected essays on the Dynamics of the Capitalist economy"  
Cambridge Univ. Press.
- Klein, L. et al (1961) "An Econometric model of the UK" Blackwell.
- Klein, L. and Goldberger, A. (1955) "An Econometric model of the U.S."  
North Holland P.C.
- Koutsoyiannis, A. (1977) "Theory of Econometrics" Macmillan.
- Lambrinides, M. (1973) "Private savings and the Macroeconomic Distribution  
of income. The classical and managerial savings functions"  
Warwick E.R.P., 36.
- Lambrinides, M. (1974) "Saving and Social Choice" Warwick E.R.P., 42.
- Marglin, S. (1971) "What do bosses do" Harvard R.P.E. Summer.
- Marglin, S. (1975) "Postscript" Harvard Institute of Economic Research,  
Discussion paper No. 429.
- Murfin, A. (1980) "Savings propensities from wage and non-wage income"  
Warwick Econ. Research Paper, No. 174.

- Marris, R. (1968) "The Economic Theory of Managerial Capitalism"  
Basic books.
- Sugden, R. (1981) Household consumption, corporate retentions, and  
the realisation crisis of monopoly capitalism",  
M.A. thesis, Warwick Univ.
- Sweezy, P. (1970) "The theory of capitalist development" Monthly Review  
Press.
- Wallis, K. (1979) "Topics in Applied Econometrics" Basil Blackwell,  
Oxford.