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# Kalecki's Profit Equation after 80 Years

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# Kalecki's Profit Equation after 80 Years

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***Abstract***

*Keynes and Kalecki both assume that private investment determines (but is not determined by) private savings. For Keynes, the desired level of saving is an increasing function of GDP, somehow related to the psychology of the society; 'autonomous' shifts of investment are determined by the state of long-term expectations. For Kalecki, the saving propensity depends on the income distribution in a capitalist society, while investment expenditures are determined by past investment decisions. The causality link between investment and saving runs through profits. We take a look at short-run and long-run aspects of Kalecki's fundamental profit equation: (1) We argue that the short lag between investment decisions and expenditures is an essential element of any meaningful interpretation of Kalecki's profit equation. This lag has critical implications for the interpretation of the multiplier, for the story of 'wage-led versus profit-led growth' and for the various tax paradoxes related to the Kaleckian profit equation. (2) We argue that an excess of desired long-term saving over investment, which might be caused by demographic ageing in Western economies, can only be eliminated by accepting the necessity of a permanent primary public deficit and/or active redistributive policies.*

***Keywords:*** *profit equation, wage-led and profit-led growth, Kalecki*

***JEL classification:*** *B22; B31; E12*

# 1 Kalecki versus Keynes

Keynes and Kalecki both assume that private investment determines (but it is not determined by) private savings. However, the link between savings and GDP is not the same for both. For Keynes the desired level of saving is an increasing function of GDP, somehow related to the psychology of the society. Adjustment of aggregate demand and income - the expenditure 'multiplier' - induces ex post equality of saving to pre-determined investment. For Kalecki the causality link between investment and saving is the same but the link to GDP goes through profits, the driving force of a capitalist economy. And it turns out that the relation between savings and GDP is more complicated than assumed by Keynes.

## 1.1 Kalecki's profit equation with outside savings

As a sum of incomes we have for a closed economy without the state

$$Y = P + B + W \tag{1}$$

P = (gross) profit, including depreciation, rent and interest; B = overheads, mostly salaries and income of management and non-manual workers, i.e. fixed labour costs; W = wages of manual workers, assumed to be a share $(0 < \alpha < 1)$ of Y, representing variable labour costs.

National income can be presented also as the sum of expenditures

$$Y = I_P + C_C + C_E \tag{2}$$

$I_P$ = expenditure of firms on gross private capital formation; $C_C$ = expenditure of 'capitalists' on consumption; $C_E$ = consumption expenditure out of 'earned income', i.e. out of the sum of wages, $W$, and salaries, $B$.

From (1) and (2) we get

$$P + B + W = I_P + C_C + C_E \tag{3}$$

By definition,

$$P = I_P + C_C - (B + W - C_E) \tag{4}$$
$$P = I_P + C_C - S_E \tag{5}$$

where $S_E$ $(=B + W - C_E)$ is saving out of 'earned incomes'. Assuming $S_E = 0$ Kalecki gets the identity

$$P = I_P + C_C \tag{6}$$

according to which profits are equal to the sum of private investment and capitalists' consumption. The fundamental Kaleckian equation of profit generation (5) can be extended (as will be done below) by adding government deficits and current account surplus.

The most important macroeconomic question is that concerning the causality in this equation. Kalecki's explanation runs like this: capitalists can decide to invest or consume next year more than this year, but they cannot decide to earn more profits; hence their profits are determined by $I_P$ and $C_C$ and not vice versa. It is no exaggeration to say that this thesis is the very core of the theory of effective demand.

That the r.h.s. of equation (5) determines the l.h.s. does not contradict the possibility that investment and consumption decisions of capitalists are - by some vague behavioral regularities - linked to past profits generating the possibility of positive feed back mechanisms. But even under such conditions, the substance of causality in Kalecki's profit equation does not change.[1] The issue of 'causality versus simultaneity' will become important again, when we discuss the possibility of a 'profit-led growth' scenario (Bhaduri, A. and Marglin, S., 1990).

When $S_E > 0$ we get (5) according to which profits suffer when part of earned incomes is saved. Indeed, in this case for pre-determined $I_P$ and $C_C$ profits, $P$, are the smaller the higher $S_E$, savings out of earned income, are.

[1] This can be seen by linking $C_{c,t}$ to past profits. I.e.

$$C_{c,t} = bP_{t-1} \qquad 0 < b < 1 \tag{7}$$

If in period 1 investment changes permanently to $I_1 = I_0 + \Delta I$,the corresponding immediate effect on profits in period 1,2,..t-1 is

$$P_t - P_0 = \Delta I + b\Delta I + b^2\Delta I ... + b^{t-1}\Delta I \tag{8}$$

Multiplying both sides of this equation by b, subtracting this equation from (8) for $t \to \infty$

$$\Delta P_{t\to\infty} \to \Delta P = \frac{\Delta I}{1-b} \tag{9}$$

Even if consumption of capitalists (or some investment) is partly dependent on past profits, *autonomous* shifts of the propensity to invest or to consume remain the fundamental factor determining profits in any particular period. The critical nature of 'causality versus simultaneity' is often ignored in modern macroeconomics, as can be seen by the illogical 'Keynesian' textbook story of the *simultaneous* determination of the aggregate price level (via aggregate supply and demand curves) on the one hand and effective demand, output, interest and employment on the other hand. (See, Bhaduri, A., Laski, K. and Riese, M., 1999.)

## 1.2 The Marxian reproduction scheme

The role of 'outside saving' can be best understood when – disregarding overheads - a Marxian reproduction scheme is used with three vertically integrated sectors producing investment goods (sector I), consumption goods for capitalist (sector II) and consumptions goods for workers (sector III) as final goods. The value added produced in every sector is equal to the sum of wages $W_i$ and Profits $P_i$, (i = I, II, III). Indeed, the sum of wages in the sectors I and II ($= W_I + W_{II}$) represents an external demand for sector III. This external demand generates profits in sector III, which represents a surplus of goods produced in the sector III above $W_{III}$, the internal sales of consumption goods for workers produced in sector III. $P_{III}$ will therefore match $W_I + W_{II}$ when no savings out of these wages are made.

$$W_I + W_{II} = P_{III} \tag{10}$$

and by adding to both sides $P_I$ and $P_{II}$ we get

$$\begin{aligned} (W_I + P_I) + (W_{II} + P_{II}) &= P_I + P_{II} + P_{III} && (11) \\ I_P + C_C &= P && (12) \end{aligned}$$

which is again (6). When some savings out of $W_I + W_{II}$ denoted $S_E$ are made then

$$W_I + W_{II} - S_E = P_{III} \tag{13}$$

and we can prove in the same way that profits, $P$, would be smaller than $I_P + C_C$ by the amount of $S_E$ according to (5). Hence the output of sector III - given output of sectors I and II - depends upon the size of $S_E$. The smaller $S_E$ and the higher external demand for the goods surplus in the sector III the higher the saleable output of this sector. This is how the principle of effective demand can be explained – it is the demand created by spending in the sectors I and II that drives the supply in the sector III. Of course this implies the existence of not fully utilized capacity in this sector. But idle capacity and unemployment are basic features of a capitalist economy. Goods, especially consumer goods, "queue" here for buyers and workers "queue" for jobs while in opposition to this in centrally planned economies buyers "queued" for goods and jobs for workers.

# 2 An extension of the basic model

## 2.1 A simple extension of Kalecki's profit equation

Let $P_R$ designate 'retained profits', and $P_D$ be distributed profits. Therefore

$$P_R + P_D = P \tag{14}$$

Let us assume that managers and the board of corporate firms decide upon the share of retained profits $0 < \rho < 1$.

$$P_R = \rho P \tag{15}$$

Corporate gross profits are partly retained and partly distributed to an extremely heterogenous group of share and bond holders - ranging from genuine, rich 'capitalists' (hedge-fund managers or some corporate managers) to retired (non-manual) workers. In the system of financial capitalism the latter group receives small supplementary 'funded pensions' in addition to social security.

From a political point of view, the economic interests of this heterogenous category of capital income recipients (with respect to anti-inflationary policies, anti-welfare state policies etc.) are at least partly aligned to those of the genuine, classical 'capitalists', which explains, why a shift to 'funded pensions' and the dismantling of the 'pay as you go' system is so vigorously and partly successfully propagated by the 'Wallstreet' lobbies and the financial sector.[2] Given the highly concentrated nature of the household distribution of capital income, it seems nevertheless to be justified to differentiate between the saving propensity out of distributed profit and the saving propensity out of wages and/or salaries.

In the age of financial capitalism the managerial power of determining $\rho$ has been challenged by the governance of investment fund representatives in the board of corporate firms - presumably acting in the interest of an anonymous mass of non-entrepreneurial 'rentiers'. The parameter $\rho$ becomes the outcome of a bargaining struggle between entrepreneurial and fund managers.

Consumption of 'capitalists' (or alternatively 'rentiers'),$C_C$ , is based on expected profits, $\widehat{P}$

$$C_C = (1 - \sigma_C)(1 - \rho)\widehat{P} \tag{16}$$

[2]The counter-revolution against Keynesianism and the revival of orthodox policy during the late seventies confirmed Kalecki's scepticism regarding the political viability of long-term full employment policies in capitalist economies (Kalecki, M., 1943). Those developments had its political roots in the rise of a new rentiers class.

where $\sigma_C$ is the marginal and average propensity to save out of distributed profits. Following Kalecki, consumption of capitalists will be characterized by a high degree of inertia relative to fluctuations in current profits. First, because corporate profits can only be distributed with a lag. Secondly, because profit expectations will adjust to changes in current profits rather slowly. And thirdly, because the absence of liquidity and credit constraints implies that the wealthy can smooth consumption much more easily across time.

Let us further assume that saving out of wages, $W$, is equal to zero. Therefore, saving out of earned income, $S_E$, is equal to saving out of fixed income, $B$. Let $\sigma_B$ be the marginal and average propensity to save for salary recipients.

$$S_E = S_B = \sigma_B B \tag{17}$$

Kalecki assumes that the level of investment expenditure is pre-determined, as there will be a natural and unavoidable lag between investment decisions and the execution of those decisions. Therefore, in any particular historical period, profits will be determined by the predetermined r.h.s. of (18)

$$P = I_p + C_C - \sigma_B B \tag{18}$$

Regularly, there will be involuntary saving/dissaving of firms and/or of capitalists, as expectations with regard to profits are always uncertain. Hypothetical equilibrium profit requires that profit expectations of capitalists are fulfilled ($\widehat{P} = P = P^*$). Then,

$$P^* = I_P + (1 - \sigma_C)(1 - \rho)P^* - \sigma_B B \tag{19}$$

Rearrangement of (19) shows that this condition is tantamount to the Keynesian equality of desired saving to investment:

$$\rho P^* + \sigma_C(1 - \rho)P^* + \sigma_B B = I_P \tag{20}$$

Solving for equilibrium profits, gives

$$P^* = \frac{I_P - \sigma_B B}{\rho + \sigma_C(1 - \rho)} \tag{21}$$

Contrary to Keynes (and far ahead of most economists of his time) Kalecki had already developed a theory of the share of 'variable labour costs', $\alpha$, which is related to the 'degree of monopoly' in the economy (Kalecki, 1939). If $\alpha$ is determined by the 'degree of monopoly', then by definition,

$$
\begin{aligned}
P &= Y - W - B && (22)\\
&= (1-\alpha)Y - B && (23)
\end{aligned}
$$

Therefore,

$$Y^* = \frac{P^* + B}{1-\alpha} \tag{24}$$

Substituting for P*, we get an expression for equilibrium income Y*.

$$Y^* = \frac{1}{1-\alpha}\frac{I_P + B(\rho + \sigma_C(1-\rho) - \sigma_B)}{\rho + \sigma_C(1-\rho)} \tag{25}$$

## 2.2 Some implications

It is interesting to compare the implications of Kalecki's extended 'investment-saving' equilibrium with the standard investment-saving presentation of Keynesian economics popularized by Samuelson and still a cornerstone of introductory macroeconomics courses. Let A be the autonomous consumption and s be the marginal propensity to save, then

$$
\begin{aligned}
-A + sY &= I_p \\
Y^* &= \frac{I_p + A}{s} && (26)
\end{aligned}
$$

First, let us note that the formally analogous component to the 'autonomous' consumption ('autonomous' dissaving) part of the Keynesian model appearing in (25) can only be positive (negative) if

$$\rho + \sigma_C(1-\rho) > \sigma_B \tag{27}$$

which can - and will from now on - be safely assumed. The aggregate 'Kaleckian' counterpart to the Keynesian aggregate saving function can be written as

$$S = -B(\rho + \sigma_C(1-\rho) - \sigma_B) + (1-\alpha)(\rho + \sigma_C(1-\rho))Y \tag{28}$$

Contrary to the Keynesian aggregate saving function it is not possible any more to separate neatly changes of the marginal propensity to save from shifts of 'autonomous' consumption.

The Kaleckian determination of output via (25) has richer implications than the simple Keynesian income-expenditure model (analytical derivations can be found in the Appendix):

(1) If the saving rate of salary recipients, $\sigma_B$ rises (perhaps due to a shift from 'pay as you go' to 'funded' retirement saving'), profits, aggregate demand and equilibrium output decrease.

(2) If the saving rate out of distributed profits, $\sigma_C$ rises, profits, aggregate demand and output fall.

(3) If all firms simultaneously try to increase the ratio of retained profits, $\rho$, (because managers wish to 'deleverage') demand and output fall.

(4) If the aggregate income of salary recipients, $B$, falls, profits rise (because of lower household savings), while aggregate demand and output fall.

(5) If the share of variable labor costs, $\alpha$, falls, output and demand decrease, while profits remain constant.

## 2.3 The graphical summary

In fig. 1 we have illustrated the latter case (5). Lower $\alpha$ reduces the slope *and* the intercept of the linear relationship between income and profits (constructed according to Kalecki's theory of the degree of monopoly (Kalecki, M., 1939 a)). The downward shift of (24) lowers aggregate demand and output from $Y^*$ to $Y^{**}$ at the same level of profits.

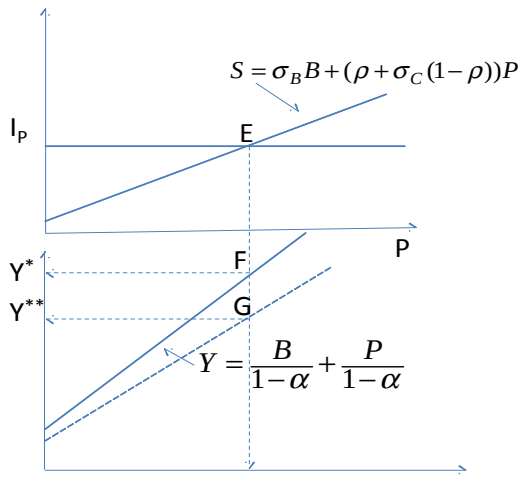


Figure 1: Lowering the wage share

It is possible to condense fig. 1 to a single diagram (fig. 2), which illustrates the 'Kaleckian cross' implicit in our equations, analogous to the 'Keynesian cross'. In fig. 2 private investment is equal to desired aggregate saving at the income level Y*. Retained profits ($P_R$) as a function of Y are shown by the dashed line with slope $\rho(1-\alpha)$ and a constant term $-\rho B$. Adding saving of capitalists, $S_C$, to retained profits, $P_R$, gives a solid line with steeper slope $\rho+\sigma_C(1-\alpha)$ and the smaller constant term $-(\rho+\sigma_C(1-\alpha))B$, showing total savings out of profits.

At the equilibrium income level desired savings from profits ($S_C+P_R$) plus desired savings of salary recipients ($\sigma_B B$) must be equal to predetermined investment expenditure, $I_P$. As can be seen, this is the case at the income level, $Y^*$, where the horizontal line $I_P - S_B$ cuts the $S_C + P_R$ line (at point E). The equilibrium values of $P_R^*, S_C^*, C_C^*$ and $P^*$ are given by the distances $Y^*F, FE, EG$, and $Y^*G$, respectively. Household saving is equal to $S_C + S_B$, which is equal to the vertical difference between the horizontal $I_p$-line and the dashed line of retained profits, $P_R$. Obviously, total household saving must also be equal to external finance of investment.

It is immediately visible that a higher saving rate of non-manual workers, $\sigma_B$, a higher saving rate of capitalists, $\sigma_C$, or a higher retention rate $\rho$ lower equilibrium profits and income.

Note that the Kaleckian profit equation $C_C^* + I_P - S_B = P^*$ can be made visible in fig. 2 by adding up distance EG (=$C_C^*$) and Y*E (= $I_P - S_P$) to Y*$G$ (= $P^*$).

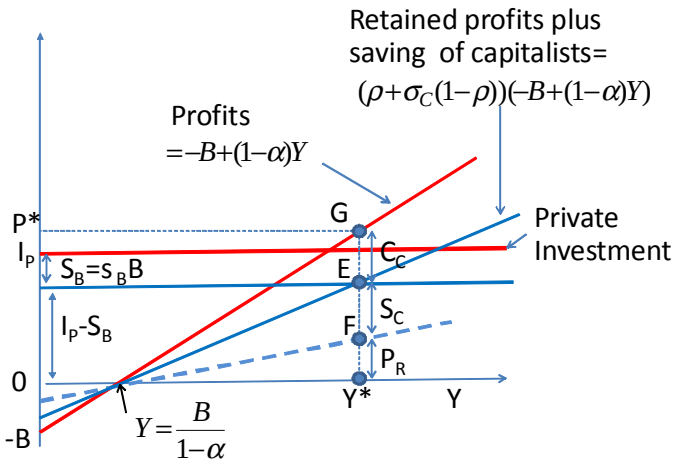


Figure 2: The Kaleckian Cross

## 2.4 Profit-led versus wage-led growth

Insights (4) and (5) raise some doubts with respect to potential 'profit-led' growth, as suggested by Bhaduri, M. and Marglin, S. (1990), following Rowthorn (1981), Dutt (1984), Taylor (1985), Blecker (1989; 2011). Let $K$ be the capital stock and let us assume that private investment depends in a very general way on profitability and the utilization ratio.

$$I_P = \underset{(+)}{f}(P/K, \underset{(+)}{Y/K}) \tag{29}$$

If $\alpha$, the share of wages of manual workers falls, for profit-led growth to evolve, investment or consumption of capitalists must rise *immediately and more than necessary* to compensate for lower consumption of workers. If, however, as Kalecki assumes, investment and consumption of capitalists react with a lag to changes in profits and aggregate demand, after the reduction of $\alpha$ profits remain constant first, while aggregate demand and output decrease. In the second period, consumption of capitalists might still remain constant, while lower investment (29) reduces profits (and aggregate demand declines even further).

What happens if only salaries, $B$, are reduced? Profits rise, as

$$\frac{\partial P}{\partial B} = \frac{-\sigma_B}{\rho + (1-\rho)\sigma_c} < 0 \tag{30}$$

while simultaneously a 'profit-led slump' develops.

$$\frac{\partial Y^*}{\partial B} = \frac{\rho + \sigma_C(1-\rho) - \sigma_B}{(1-\alpha)\left(\rho + \sigma_C(1-\rho)\right)} > 0 \tag{31}$$

Consequently, *hypothetical* profit-led growth requires that the effect of higher profitability on investment expenditures dominates the counteracting effect of lower capacity utilization.

Any simple comparative static extension of our analysis (by integrating equation (29) into the model and studying the signs of derivatives) can be seriously misleading, however: Due to the Kaleckian lag between investment decisions and investment spending, avoidance of the 'profit-led slump' solution in (31) requires that private investment decisions react to lower B *in advance.* This, however, is only possible if private investors *expect* that profits will rise as a consequence of lowering B in the future. However, a 'wait and see' attitude of investors is much more plausible under such circumstances, but not sufficient for reversing the sign of (31).

The whole argument in favour of 'profit-led growth' becomes even weaker, if one takes into account that lowering $B$ will only be feasible, if - due to high unemployment - the bargaining power of entrepreneurs is sufficiently strong. Even if this is the case and even if profits slightly rise in response to lower $B$, when capacities are already underutilized any further decline of $Y$ will act as a powerful brake against any rise of investment.[3]

Nevertheless, the idea of 'profit-led growth', while particularly inappropriate as a policy strategy during a global depression, might have a kernel of truth - under extreme conditions in the very long-run - albeit this is a completely different issue.[4] Clearly, to compensate for entrepreneurial risk, the rate of profit cannot fall below a minimum bound. It is important that long-run wage and income policies do not violate this long-run profitability barrier. Raising an (appropriately adjusted) level of real wages in accordance with the increase of labour productivity (and avoiding the failure of

[3]For an overview of the empirical literature, see Stockhammer, E., and Onaran, Ö. (2013). They conclude: "One striking common finding stands out in this empirical literature: most studies conclude that domestic demand is wage-led – that is, the effect of a pro-capital redistribution of income on the sum of private consumption and private investment is negative because consumption is much more sensitive to an increase in the profit share than is investment. Thus demand is profit-led only when the effect of distribution on net exports is high enough to offset the effects on domestic demand, and this is likely only in small open economies." We would like to add: this is however profit-led growth in the sense of net-export led growth; in this case no time lag exists between lowering unit labour cost cum prices and increased international competitiveness.

[4]We are discussing such a strategy within a closed economy - the 'beggar my neighbor' aspect of deflationary wage policy is therefore absent.

procyclical wage policy!) is probably the best compromise to stabilize investors state of confidence with regard to long-term profitability on the one hand and aggregate consumption of employees (as much as possible) on the other hand.

Distinguishing between the 'long-run' and the 'short-run' perspective is also highly relevant for the alternative - equally dubious - 'wage-led growth' strategy. Clearly, if $\alpha$ or $B$ are already 'too high', threatening to violate the minimum profit rate barrier, any further rise might have severe negative effects on investment, so that aggregate demand (and consumption of workers) might even collapse - contrary to what we have derived in the preceding section.[5] We conclude that neither a short-sighted 'profit-led' nor an aggressive 'wage-led' growth strategy can be useful substitutes for vigorous anticyclical fiscal policy during a deep crises and for labour productivity oriented long-run wage policy.

## 2.5 The government sector

Let us extend the model to include a government sector. How does this change the fundamental equation of profit determination? Let $G$ be the government expenditures for goods and services. Now, gross profits, $P$, and salaries, $B$, are defined gross of taxes.[6] Expenditure must be equal to revenues, therefore, by definition

$$P + B + W = I_P + G + C_C + C_E + C_W \tag{32}$$

Total government revenues are the sum of corporate taxes, $T_c$, and income taxes, $T_i$, calculated net of transfers and interest on public debt.

$$T = T_c + T_i \tag{33}$$

The income tax rate (net of transfers) $0 < \theta < 1$, is assumed to be the same for salaries and distributed profits. Corporate profits are taxed at a rate $0 < \theta_c < 1$. Workers do not pay net taxes, but salary recipients and capitalists pay net income tax. Then, total net tax revenues, $T$, are the sum

[5] Such a situation existed in the Netherlands in the seventies, when during the 'durch desease' the profit share declined below 20 %. After a severe investment crises, wage moderation was implemented in the contract of Wassenar (1982).

[6] In modern national accounting terms gross profits would be equivalent to 'gross economic surplus' (=gross profits + mixed income), while B+W is tantamount to the concept of 'compensation of employees' in the primary balance of income.

of revenues from income tax, $T_i$, and corporate tax revenues, $T_c$.

$$\begin{aligned} T &= T_i + T_c && (34) \\ &= \theta[B + (1-\rho)(1-\theta_c)P] + \theta_c P && (35) \end{aligned}$$

Gross profits are the sum of retained profits, distributed profits and corporate taxes

$$P = P_R + P_D + T_c \tag{36}$$

Assuming $C_W = W$, and subtracting $B$, $T$ and $P_D$ from both sides of equation (32) gives

$$P - P_D - (T_c + T_i) = I_P + D + C_C + C_E - (P_D + B) \tag{37}$$

where $D = G - T$ is the primary government deficit. Adding now the sum of distributed profits and tax revenues on both sides,

$$\begin{aligned} P &= I_P + D + T_c + P_D - (P_D + B - T_i - C_C - C_E) && (38) \\ &= I_P + D + T_c + P_D - S_H && (39) \end{aligned}$$

the modified Kaleckian profit equation (39) can be derived. Gross profits are the sum of private investment, the budget deficit, corporate taxes and distributed profits minus household saving. Any observable change in the empirical level of gross profits must therefore - by definition - find its counterpart somewhere at the r.h.s. of equation (39).

Is it still possible to argue that in any particular period the r.h.s. of (39) is **causally** determining the l.h.s.? The answer is yes, because it can be easily shown (see Appendix) that equation (39) is tantamount to

$$P = I_P + G + C_C - B(1 - (1-\theta)(1-\sigma_B)) \tag{40}$$

Similar to investment, there is a considerable lag between budgetary decisions and government expenditures.

Equation (39) can be written as the Keynesian equality of private saving, i.e. the sum of retained profits plus household saving to private investment plus government deficit

$$P_R + S_H = I_P + D \tag{41}$$

By definition, distributed profits are

$$P_D = (1-\rho)(1-\theta_c)P \tag{42}$$

Consumption of capitalists, based on expected profits is equal to

$$\widehat{C} = b\widehat{P} \tag{43}$$

where

$$b \equiv (1-\sigma_C)(1-\theta)(1-\theta_c)(1-\rho) \tag{44}$$

is the marginal propensity to consume of capitalists, which depends on the retention ratio, the corporate tax rate, the income tax rate and the saving rate. Let us again assume that profit expectations are fulfilled ($\widehat{P} = P = P^*$). Substituting in equation (39) the expressions for corporate and income taxes (35), for desired saving of capitalist ($= \sigma_C P_D$) and salary recipients ($=\sigma_B B$), as well as (42) for distributed profits, $P_D$ , the modified expression (39) can be solved to determine gross profits:

$$P^* = \frac{G + I_p - B(1-(1-\theta)(1-\sigma_B))}{1-b} \tag{45}$$

Similarly, equilibrium output and government deficit are determined by

$$Y^* = \frac{B}{1-\alpha} + \frac{1}{1-\alpha}P^* \tag{46}$$

$$D^* = G - \theta B - (\theta(1-\rho)(1-\theta_c) + \theta_c)P^* \tag{47}$$

If government expenditures increase by one euro, profit increases by $(1-b)^{-1}$, output by $((1-\alpha)(1-b))^{-1}$ and the government deficit by

$$\Delta D^* = 1 - \frac{\theta(1-\rho)(1-\theta_c) + \theta_c}{1-b} \tag{48}$$

Obviously, the deficit does not increase by the full amount of additional government spending.[7]

## 2.6 Kalecki's corporate tax paradox

Let us assume that the government raises the corporate tax rate, $\theta_c$, and simultaneously adjusts government expenditure by the full amount of additional tax revenues. Therefore,

$$G = T + D_0 \tag{50}$$

[7]Let us assume that $\sigma_C = 0.2, \rho = 0.2, \theta = 0.4, \theta_c = 0.25$. Then

$$\Delta D^* = 1 - \frac{0.4(1-0.2)(1-0.25) + 0.25}{1-(1-0.25)(1-0.2)(1-0.4)(1-0.2)} = 0.31 \tag{49}$$

where $D_0$ is the fixed budget balance. Substituting the tax revenues as defined in (35) for G in (45) and solving again for P*, we get

$$P^* = \frac{1}{1-\theta_c}\left(\frac{I_p + D_0 - B\sigma_B(1-\theta)}{\rho + \sigma_C(1-\rho)(1-\theta)}\right) \tag{51}$$

$$(1-\theta_c)P^* = \frac{I + D_0 - B\sigma_B(1-\theta)}{\rho + \sigma_C(1-\rho)(1-\theta)} \tag{52}$$

The implications for varying $\theta_c$ are straightforward: any rise in $\theta_c$, leading to higher tax revenues (as demonstrated above) and accompanied by an equivalent rise in government spending, raises profits gross of taxation by an amount just necessary for net profits $(1-\theta_c)P$ to remain constant, as can be seen immediately from equation (52), where the r.h.s. is independent of $\theta_c$.

Several qualifications - already brought forward by Kalecki - are important. First, capitalists might expect falling net profits and react by increasing the degree of monopoly. Secondly, consumption of capitalists might react in response to lower expected income.[8]

## 2.7 A Kaleckian income tax paradox

We can check in a similar way the effects of an increase of the income tax rate, $\theta$, if additional tax revenues are fully spent by the government. Under those conditions profits before (53) and after corporate tax rise (54).

$$\frac{\partial P}{\partial \theta} = \frac{1}{1-\theta_c}\frac{\sigma_C(1-\rho)(I_p + D_0) + B\rho\sigma_B}{\left(\rho + \sigma_C(1-\rho)(1-\theta)\right)^2} > 0 \tag{53}$$

$$\frac{\partial(1-\theta_c)P}{\partial \theta} = \frac{\sigma_C(1-\rho)(I_p + D_0) + B\rho\sigma_B}{\left(\rho + \sigma_C(1-\rho)(1-\theta)\right)^2} > 0 \tag{54}$$

This result raises the question, whether net distributed profits after corporate and income tax could also rise (or remain at least constant) under such circumstances. It can be shown (for proof see Appendix) that distributed profits net of taxes fall after a rise of the income tax, if and only if

[8] This point was also brought forward by Keynes in a letter to Kalecki: "It is only if they have read your article and are convinced by it that their profit will rise by the amount of the tax that they will maintain their spending as before." (Osiatynsky, J., 2007, p. 559). Ironically, a similar argument can be made with regard to Keynes' thesis that lower nominal wages will not increase employment and output, or the budget deficits do not induce crowding out of public investment ... Contrary to Keynes, Kalecki argues that it is much more plausible that consumption reacts with a lag to actual changes of income.

$$\begin{aligned} \frac{\rho}{2\rho + \sigma_C(1-\rho)(1-\theta)} &> \frac{\sigma_B(1-\theta)B}{I_p + D_0} \Rightarrow \\ \frac{\partial((1-\theta)(1-\rho)(1-\theta_c)P)}{\partial\theta} &< 0 \end{aligned} \tag{55}$$

Given (55), the overall tax burden for capitalists rises, in spite of higher net corporate profits.

However, the larger the ratio of saving of salary recipients is relative to the sum of private investment and government deficit and/or the lower the share of retained profits, $\rho$, the greater will be the chance that net distributed profits after tax will rise - in spite of higher $\theta$. Intuitively, under such circumstances higher $\theta$ becomes more powerful to reduce private saving increasing the effectiveness of income tax financed expansionary fiscal policies. Note that the successful fight of investment fund managers for higher $(1-\rho)$, and the political pressure towards funded pension schemes specifically designed for salary recipients (raising $\sigma_B$) increase the odds for switching to a positive sign in (55).

## 2.8 The current account

While exports can be seen as an exogenous variable for the present purpose of analysis, import demand will be part of the final demand for goods and services. The marginal propensity to import will probably be the highest for investment goods and exports, lower for consumption of capitalists and salary recipients and even lower for government expenditures and consumption of workers. It should be kept in mind that the marginal propensity to import relevant for the fiscal multiplier can therefore be much lower than the average propensity, which is particularly relevant for an economically correct interpretation of the fiscal multiplier (Laski, K., Osiatynski, J. and Zieba, J., 2010).

For the sake of simplicity, let us assume that the marginal propensity to import (mpi) of workers is zero; the mpi for investment demand plus exports is $0 < m_x < 1$, the mpi for consumption of capitalists is $0 < m_c < m_x < 1$ and for salary recipients $0 < m_B < m_C < 1$. Therefore

$$M = m_x(I_P + X) + m_B B + m_C(1-\theta)(1-\rho)(1-\theta_c)P \tag{56}$$

Expenditure net of imports must be equal to gross income:

$$P + B + W = I_P + G + C_C + C_B + C_W + X - M \tag{57}$$

Similar manipulations like above give us the modified Kaleckian profit equation:

$$P = I_p + D + P_D + T_C + X - M - S_H \tag{58}$$

Substituting (56) and expressions for $D, P_D$, $T_C$ and $S_H$ allows to solve for $P^*$,

$$P^* = \frac{G + (X + I_P)(1 - m_x) - B(1 - (1 - \theta)(1 - \sigma_B)(1 - m_B))}{1 - b(1 - m_C)} \tag{59}$$

where b is again the marginal propensity to consume of capitalists (44). The fiscal multiplier now becomes

$$\Delta P = \frac{\Delta G}{1 - b(1 - m_C)} \tag{60}$$

Output and demand rise by

$$\Delta Y = \frac{\Delta G}{(1 - \alpha)(1 - b(1 - m_C))} \tag{61}$$

The higher the marginal import propensity, $m_C$, and the lower the share of wages, $\alpha$, the lower becomes the multiplier.

An export surplus fulfills a similar function as an internal government deficit by raising profits without the necessity to increase public debt or to reduce household saving.

$$\Delta P = \frac{(1 - m_x)\Delta X}{1 - b(1 - m_C)} \tag{62}$$

Equation (58) is equivalent to the following, familiar one, which shows the sectorial financial balances of the private sector, the government sector and the foreign sector:

$$S_H + (P - T_C - P_D) - I_P + (T - G) = X - M \tag{63}$$

$$(S_P - I_P) + (T - G) = X - M \tag{64}$$

Fig. 3 illustrates the empirical side of this equation for the US. When the surplus of private saving, $S_P$, over private investment, $I_P$ rises, aggregate demand suffers lowering imports and income; therefore the balance of the foreign sector improves and the government balance deteriorates.

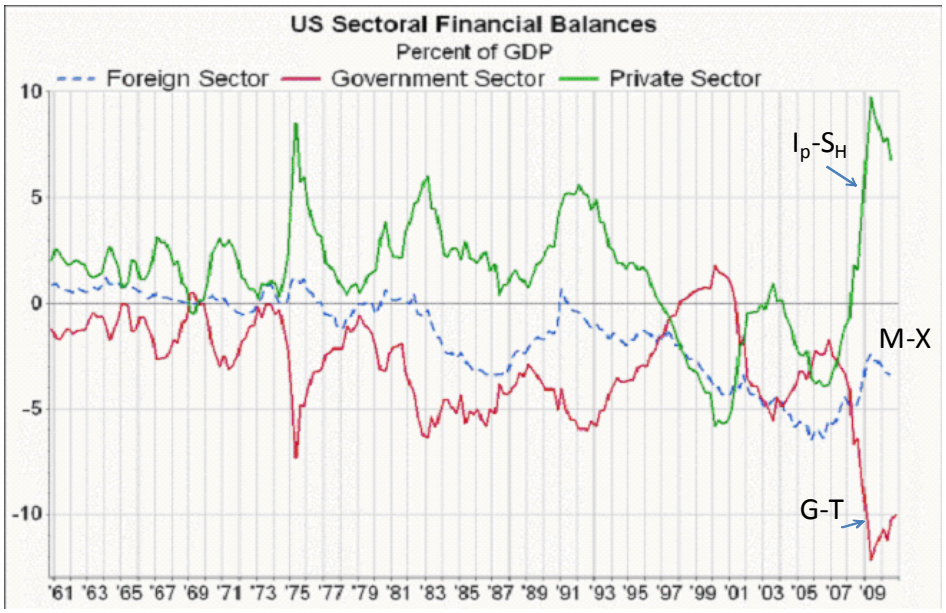


Figure 3: Roche, Cullen O. (2011). Understanding the Modern Monetary System. Available at SSRN: http://ssrn.com/abstract=1905625 or http://dx.doi.org/10.2139/ssrn.1905625

## 2.9 The long-term problem of full-employment

Kalecki, M. (1945) asked the interesting question, whether a policy of stimulating private investment via lower interest rates can be a sustainable policy or whether capitalism might suffer from a rate of accumulation, which is structurally (not cyclically) too low for maintaining full employment.

Kalecki's argument can be presented in a nutshell as follows: To maintain full employment, i.e. for aggregate demand to be permanently equal to full employment output $Y_f$, the following conditions must be fulfilled: The economy must start from a state of full employment and the rate of accumulation of capital, $\Delta K/K$, must be equal to the growth rate of potential output, which is equal to the sum of the growth rates of population, $n$, and labor productivity, $m$. Gross investment, $I_p > \Delta K$, must also include depreciation $(= \delta K)$. Therefore,

$$\frac{\Delta K}{K} = n + m \tag{65}$$

$$\frac{I_p}{K} = n + m + \delta \tag{66}$$

Condition (65) implies that capital-productivity, $Y_f/K = v$ remains constant over time and the capital stock per capita rises with the rate of labor productivity. Consequently, for full employment to be maintained, the share of gross investment must be equal to $(n + m + \delta)/v$

$$\frac{I_p/K}{Y_f/K} = \frac{I_p}{Y_f} = \frac{n + m + \delta}{v} = \frac{S^*}{Y_f} \tag{67}$$

If and only if the desired gross saving rate out of full employment income, $S^*/Y_f$ is equal to this gross investment share, a steady state growth with full employment might be possible.

Now, let us assume that starting from such a situation, the degree of monopoly rises and remains forever at the higher level. Desired gross saving rises above gross investment, and demand and output would fall, as we have shown above. If investment is stimulated by lower interest rates, so that the share of investment rises sufficiently to compensate for the leakage of higher saving, the rate of accumulation rises above $n+m+\delta$. Then, however capital productivity and the rate of profit *must* fall. Contrary to the neoclassical model of Solow, where $v$ smoothly adjusts via capital deepening to a lower equilibrium level (and everything is fine again), for Kalecki a decrease of capital productivity is tantamount to an increase of unused capacity - which has a negative impact on investment. The interest rate would have to fall again and again to boost investment. This cannot be a sustainable policy.

If higher investment is not sufficient to compensate for the higher leakage of saving, alternative routes might be the following ones:

(1) **Raising public deficits to close the gap between (excessive) desired full employment saving and capital accumulation.** This strategy raises the question of the long run sustainability of public debt. The revival of orthodox economic thinking after the inflationary seventies had propagated the fatal dogma that real interest rates on government bonds should be - on average - at least as high as the growth rate of GDP, so that governments are forced to respect an intertemporal budget constraint like private agents. Obviously, this type of thinking denies the possibility of a structural gap between the desired saving rate at full employment and the steady state rate of capital accumulation. Actually, the average annual growth rate of real GDP in the US had been 3.1 % after the war, while the real interest rate on long-term government bonds had been approximately 2 % (Bradford DeLong, J., Magin, K., 2009) or even less.[9] The prescription given by orthodox economics is therefore at odds with historical realities. But it is also at odds with institutional realities in the US, where public debt can always be monetized by the Fed, cancelling the necessity to pay interest at all. Therefore, to close a long-term structural saving/investment gap via primary deficits is not only viable, but also recommendable (provided a country has the power to manage its own currency).

(2) **Generating structural export surplus via 'beggar my neighbor' policies** (the German, mercantilist strategy), is an unsustainable way, however, as can be seen in the Euro-crisis.

(3) **Lowering household saving** by stimulating indebtedness of households and creating virtual wealth **(**Bhaduri, A, Laski, K and Riese, M., 2006) **via asset price bubbles** (the US route during the nineties) - that will not be sustainable either.

(4) **Lowering household saving by redistribution** (higher corporate taxes, higher income taxes, higher inheritance taxes, higher wealth taxes) and increasing government expenditures for welfare.

Only (1) and (4) seem to be economically meaningful and sustainable (and had been the basis for preventing a recurrence of the great depression after the II World War in the 1950-1960thies), but in a capitalist economy political resistance against both routes is - for obvious reasons - strongest.

[9] Because the average maturity of public debt is lower than ten years, real interest rate on government debt was even lower.

# 3 The rise of 'financial capitalism'

While Kalecki never had been a Marxist, his thinking was obviously influenced by the Marxian reproduction schemes and by the idea that class conflicts are important - theoretically and empirically. The background of his ideas had been the intellectual and social world of the thirties. The world, however, has changed considerably since that time. To put the extension of his basic model, into a historical perspective, it is necessary to take a short look at the changing historical conditions of capitalism.

In the period after the second world war, modern capitalism has undergone a significant transformation. Somewhat simplified, one can say that from the fifties to the seventies a system of 'managerial capitalism' dominated, while since the eighties a system of 'financial capitalism' has evolved. In the first period retained profits provided the basis for the accumulation of equity by and for loyal, long-term share-holders, while external finance primarily relied on similarly long-term credit-relationships. Financial capitalism, which evolved due to the deregulation of financial markets and the rise of investment and pension funds, weakened long-term relationships, fostered lower corporate taxes and higher dividends at the expense of internal accumulation and tried to strengthen the weight of external finance (not only via credits, junk bonds etc. but also via newly issued shares).

Fig. (4) illustrates these trends for the US. While the ratio of corporate taxes to gross corporate profits dramatically decreased between 1969 to 2011 from 42% to 21 %, the share of net dividend payments to gross corporate profits shows a clear upward trend from below 30 % to more then 50 % just before the great financial crises.

The theoretical basis behind these shifts had been the ideologically biased faith in the importance of capital mobility as a manager's discipline device to maximize the share holder value.

One of the negative implications of the strengthening of 'rentier interests' had been a shift towards extreme 'short-termism' of managerial decision making at many levels (profit maximization, portfolio shifts, employment policies, mark to market valuations etc.)

Another consequence had been a trend towards higher leverage ratios to raise the returns on equity, pointing to the ongoing relevance of Kalecki's famous 'principle of increasing risk' (and the dangers of financial fragility for the stability of the system as a whole.)

Deregulation, liberalization and the rise of financial capitalism (starting in the "Reagan/Thatcher area") had been simultaneously a cause and a consequence of rising income inequality: On the one hand, the freedom for industry to switch locations in search for the lowest wage costs (and lowest tax

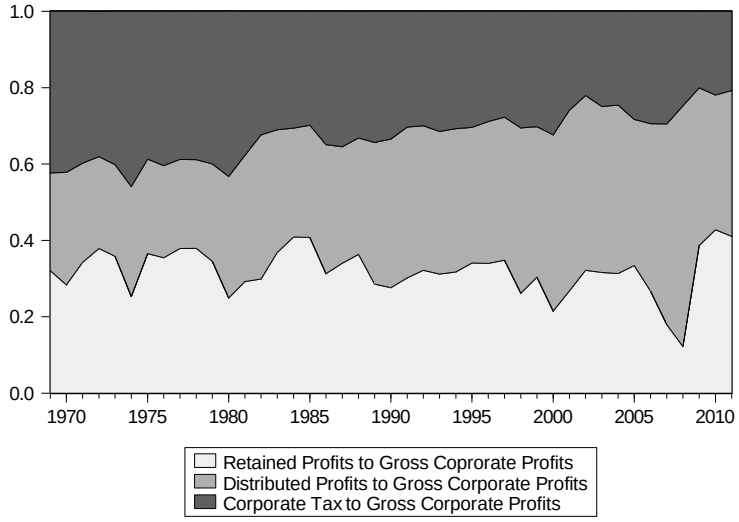


Figure 4: The Uses of Gross Corporate Profits. Source: Bureau of Economic Analysis; Calculation by the Author

bills) on earth dramatically increased the economic and political bargaining power of corporations significantly. On the other hand, rising inequality of income (see fig. 5) and wealth became a genuine source of demand for sophisticated financial services - besides shifting political power even further in favour of their interests. Increasing concentration of savings and financial wealth in the higher and highest income groups implies a shrinking market for consumer goods and weaker stimuli for private investment, however.

Changes in the distribution of income are not the only factor in strengthening the role of finance in relation to the real economy.

In Europe after two world wars and the great crisis of the 1930ies that devastated financial assets a long period of peace unknown on this continent succeeded. Hence conditions have been created for the appearance of a first generation of inheritors. Young private households very often do not start from the scratch but inherit some wealth after their parents. The heritage is in turn not consumed but used for financial investment. Their value increases with time and passed further to the next generation. As a consequence rentiers behavior inside the society expands.

Last but not least the aging of society in Europe caused both by higher longevity and smaller fertility has been used as a pretext to substitute the old cheap 'pay as you go' system through the expensive capital funded system.

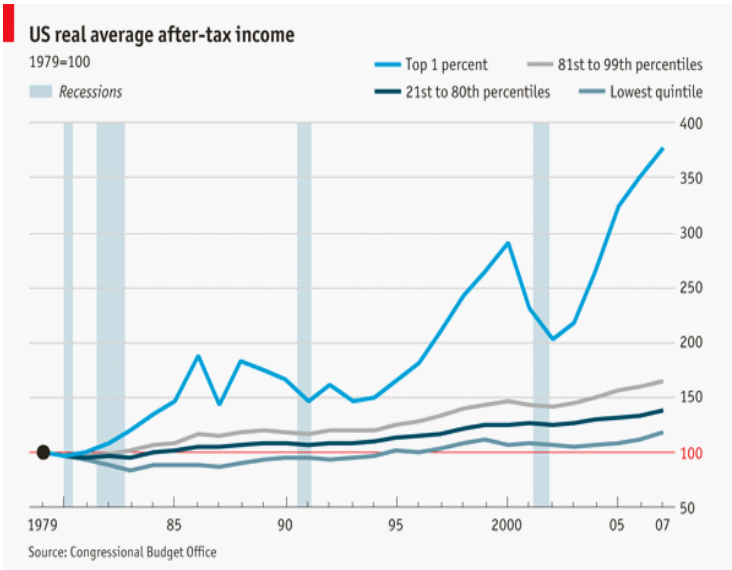


Figure 5: Increasing income inequality in the US

It is of course true that in an aging society the relation between pension payments and pension rewards must - and would - deteriorate. No changes in the pension system can solve this difficulty as it depends upon demography not the method of its financing. But the gradual substitution of the 'pay as you go' system by capital funded system in many European countries has well served the world of finance. On the one hand, pension funds came into existence as additional great players on the capital market; on the other hand, the old 'pay as you go' system must continuously be served and when payments do not come in, it is the government budget that is forced to fund pensions through deficits and public debt.

As a result of these changes the position of finance in relation to the real economy has further strengthened. Financial investors require rentability's levels which disregard the possibilities of the economy. If the latter increases by 2-3 per cent p. a. and rentability (measured in per cent of capital) is more or less of the same order, then a double digit rentability of financial instruments cannot be achieved. What remains possible are speculative bubbles that may increase as long as the capital gains remain notional, i.e. are not realized on a larger basis; however, sooner or later such bubbles explode and cause havoc in the whole economy. It should be stressed that the dominant position of finance and the increase of rentiers savings influence negatively

the rentability of the real economy. First, real investment suffers because own capital of firm increases slower and the firm themselves get often involved in financial speculation. Second, at given private investment level, profits decrease when rentiers savings increase. Both factors lower profits and ceteris paribus the rentability of the real economy. Thus the contradiction between the real economy and finance deepens and would lead to a catastrophe if the real economy would not regain the upper hand it used to possess in the past.

## Appendix

Provided $I_p > \sigma_B B$

$$\frac{\partial Y^*}{\partial \sigma_B} = = \frac{1}{1-\alpha}\frac{\partial P^*}{\partial \sigma_B} = -\frac{B}{(1-\alpha)\left(\rho + \sigma_C(1-\rho)\right)} < 0 \tag{68}$$

$$\frac{\partial Y^*}{\partial \sigma_C} = \frac{1}{1-\alpha}\frac{\partial P^*}{\partial \sigma_C} = -\frac{1}{1-\alpha}\frac{(1-\rho)\left(I_P - B\sigma_B\right)}{\left(\rho + \sigma_C(1-\rho)\right)^2} < 0 \tag{69}$$

$$\frac{\partial Y^*}{\partial \rho} = \frac{1}{1-\alpha}\frac{\partial P^*}{\partial \sigma_\rho} = -\frac{1}{1-\alpha}\frac{(1-\sigma_C)\left(I_P - B\sigma_B\right)}{\left(\rho + \sigma_C(1-\rho)\right)^2} < 0 \tag{70}$$

$$\frac{\partial Y^*}{\partial \alpha} = \frac{I_P + B(\rho + \sigma_C(1-\rho) - \sigma_B)}{(1-\alpha)^2\left(\rho + \sigma_C(1-\rho)\right)} > 0 \tag{71}$$

$$\frac{\partial Y^*}{\partial B} = \frac{\rho + \sigma_C(1-\rho) - \sigma_B}{(1-\alpha)\left(\rho + \sigma_C(1-\rho)\right)} > 0 \tag{72}$$

**The modified Kaleckian profit equation**

$$P = I_P + D + T_c + P_D - S_H \tag{73}$$

$$= I_P + G - T_c - T_{i,C} - T_{i,B} + T_c + P_D - S_C - S_B \tag{74}$$

$$= I_P + G + C_c - S_B - T_{i,B} \tag{75}$$

$$= I_P + G + C_c - B(1 - (1-\theta)(1-\sigma_B)) \tag{76}$$

All variables on the r.h.s of (76) can be considered as predetermined in a given period.

**The Kaleckian income tax paradox**: Distributed profits net of taxes are

$$P_d = (1-\theta)(1-\rho)(1-\theta_c)P \tag{77}$$

Therefore

$$\frac{\partial P_d}{\partial \theta} = -(1-\rho)(1-\theta_c)P + (1-\theta)(1-\rho)(1-\theta_c)\frac{\partial P}{\partial \theta} \tag{78}$$

Substitution for P expression (51), for $\partial P/\partial\theta$ expression (53) and simplifying, we get

$$\frac{\partial P_d}{\partial \theta} = (1-\rho)\frac{\sigma_B(1-\theta)(2\rho + (\sigma_C(1-\rho)(1-\theta)))B - \rho(I_p + D_0)}{\left(\rho + \sigma_C(1-\rho)(1-\theta)\right)^2} \tag{79}$$

The sign of (79) can be negative or positive. Net distributed profits after tax fall if and only if the nominator in (79) is negative or

$$\frac{\rho}{2\rho + \sigma_C(1-\rho)(1-\theta)} > \frac{\sigma_B(1-\theta)B}{I_p + D_0} \tag{80}$$

# References


[1] Bhaduri, A. (2007). On the Dynamics of Profit-led and Wage-led Growth. Cambridge Journal of Economics, Advance Access, August 19, 2007.

[2] Bhaduri, A., Marglin, S. (1990). Unemployment and the Real Wage: The Economic Basis for Contesting Political Ideologies. Cambridge Journal of Economics, 14, 375-393.

[3] Bhaduri, A, Laski, K and Riese, M. (2006). 'A model of the interaction between the real and the virtual economy', Metroeconomica, 57, pp. 412-27.

[4] Bhaduri, A, Laski, K and Riese, M. (1999), 'Effective Demand versus Profit Maximization'. In Aggregate Demand/Supply Analysis: A Dynamic Perspective', Banca Nazionale del Lavoro Quarterly Review, No. 210, September 1999, pp. 281-93.

[5] Bradford DeLong, J., Magin, K. (2009). The U. S. equity return premium: Past, present and future, in: Journal of Economic Perspectives, 23(1), 193-208.

[6] Blecker, R. (1989), International competition, income distribution and economic growth. Cambridge Journal of Economics, 13: 395–412.

[7] Dutt, A. (1984). Stagnation, income distribution and monopoly power. Cambridge Journal of Economics, 8: 25–40.

[8] Kalecki, M. (1939). Essays in the Theory of Economic Fluctuations. In: Osiatynski, J. (2007). Collected Works of Michael Kalecki,. Vol. I; Capitalism, Business and Full Employment. Clarendon Press Oxford, pp. 235-252.

[9] Kalecki, M. (1939). The Principle of Increasing Risk. In: Osiatynski, J. (2007). Collected Works of Michael Kalecki,. Vol. I; Capitalism, Business and Full Employment. Clarendon Press Oxford, pp. 274-285.

[10] Kalecki, M. (1943). Political Aspects of Full Employment. In: Political Quarterly, 14/4, 1943, pp. 322-31.

[11] Kalecki, M. (1945). Full Employment by Stimulating Private Investment? Oxford Economic Papers, NS, 7, 1945, pp. 83-92.

[12] Keynes, J. M. (1939). Letter to Kalecki. In: Collected Works of Michael Kalecki,. Vol. I; Capitalism, Business and Full Employment. Notes to Commodity, Income and Capital Taxation. Clarendon Press Oxford, p. 559.

[13] Laski, K., Osiatynski,J. and Zieba,J. (2010), The Government Expenditure Multiplier and its Estimates for Poland in 2006-2009, The Vienna Institute for International Economic Studies, Working Papers (63), March

[14] Stockhammer, E. and Onaran, O. (2013). Wage-led growth: theory, evidence, policy. Review of Keynesian Economics, Vol. 1 No. 1, pp. 61–78.

[15] Taylor, L. (1985). A Stagnationist model of economic growth, Cambridge Journal of Economics, 9: 383–403.

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