Chapter VI

KALECKI’S MACROECONOMICS OF PUBLIC FINANCE

In this chapter we will consider Kalecki’s analysis of the role of the government expenditure and its effect on demand. We will therefore analyze public spending, distinguishing between its different forms of financing; that is, we will analyze deficit financing on the one hand, and also we will then consider government expenditure financed through taxation. In the main text we conduct the analysis at a purely verbal level; and in the Appendix we formalize the reasoning.

I. Public Deficit and Effective Demand

The gist of Kalecki’s reasoning can be put as follows. Let us assume an increase in government’s spending. We can easily see that unless such an increase carries with it, or induces, a decrease in private spending aggregate demand will rise, and with it output and employment. Further, Kalecki showed that whether private demand does or does not fall, cannot be determined without first specifying the form of financing of the larger state expenditure. When the government finances its expenditure with money creation, or obtains funds that otherwise would have been hoarded, the demand of capitalists and wage earners has no reason to simultaneously fall. Consequently, when an increase in government expenditure is finance with money creation, or by selling bonds to the public which would otherwise have saved those funds, private expenditure does not need to be reduced. To use a contemporary expression, public expenditure will not necessarily “crowd-out” private expenditure. Let us expand on this issue.
We know that workers’ consumption is not autonomous, but induced by autonomous expenditure and the distribution of income (our coefficient e). To facilitate the intuitive reasoning, let us assume income distribution is constant, and let us split workers’ consumption into two parts. One is related to capitalists’ expenditure and the other to Government expenditure. Now, given the distribution of income, the workers’ consumption induced by capitalist expenditure will remain constant if the latter does not change. Under such conditions, the increase in government spending (that in this case is equivalent to an increase of the budget deficit) will induce an increase in total effective demand, which will give birth to a greater realized output, greater employment, greater profits and greater wages. Of course, idle capacity should exist in those sectors where the new demand is forthcoming.

In short, in Kalecki’s view the greater public expenditure stimulates a higher level of economic activity. Further, just like any increase in demand, when idle capacity exists, the increase in the deficit does not have to raise prices, but instead will cause output expansion. We think it appropriate to recall here our author’s own words:

“Let us assume that the government issues treasury bills and sells them to the banks. The government spends the money, e.g. on construction of railroads…[therefore] employment in investment goods industries increases and subsequently, as a result of the higher purchasing power of the workers, in consumer goods industries as well. The amounts spent by the government flow as profits directly or though spending of the workers into the pockets of capitalists, and return to the banks as their deposits. On the side of bank assets, the government debt accrues in the form of discounted bills; on the side
of liabilities, there is an increase in deposits equal to the additional profits. Thus the government becomes indebted, via banks, to the private capitalists by an amount equal to the value of the investment effected” (Kalecki’s (1935 [1990]): 193). By the way, in a previous paper, our author had called “domestic exports” this situation whereby the government becomes indebted to capitalists\(^1\). He drew the following analogy:

“If a government borrows from capitalists at home, spending the proceeds of the loan, e.g. on armaments, payment of unemployment benefits, or public works, the result is very similar to that of securing a surplus in foreign trade. To the surplus of exports over imports there corresponds here the sale of commodities, used for the purposes mentioned above….The equivalent of these sales of commodities is the increase in the claims of the capitalists on their government, just as the equivalent of the surplus achieved in foreign trade was the increase of foreign claims or the reduction of foreign debts” (Kalecki 1933, [1990]:1967/8).

This notion, that the increase of the government deficit --when it is financed with banking resources-- has no adverse effect on the private spending, has been criticized and thus we will stop briefly and examine some of these criticisms.

According to some critics, the financing of the deficit with banking resources causes two related effects: on the one hand, it brings about a rise in the interest rate; and on the other, it reduces the credit capacity of banks. For both reasons, it would appear, an increase in the deficit would cause a fall of the private spending. Specifically, this increase would cause a fall in private

\(^1\) We discuss open economy issues in the next chapter
investment and in consumption expenditure that is financed with credit (commercial or banking). This idea maintains that a budget deficit also reduces profits, and concludes that it negatively affects the long-run growth rate of the economy in the medium and long term, because higher interest rates and lower profits reduce the stimuli to invest.

Now, let us first of all point out that the rise in the interest rates and the credit restriction are not a necessary consequence of an increase of the deficit. For example, if the State creates additional money to finance its expenditure, the amount of money available necessarily will increase, avoiding any rise in the interest rate.

However, it could still be argued that when the State borrows money from the commercial banks to finance its deficit, the credit line to individuals would have to fall, due to the diminution of the loanable funds of the commercial bank which was caused by the government’s demanded loan. Nevertheless, this is not correct: when the State pays to the individuals that money returns to the banks in the form of deposits. Having thus recovered the deposits, banks will be able carry out new credits (if demand for such exists). That is to say, in order for the public expenditure financed with loans from the commercial bank to "crowds-out" the private spending, it would have to happen that the individuals that are paid by the State kept all that money in a box, rather than return that money to the banks. But the latter is obviously a rather far-fetched assumption. Kalecki put his argument in the following sentence:

“Will not the rise in the budget deficit force up the rate of interest so much that investment will be reduced by just as much as the budget deficit is increased, thus offsetting the stimulating effect of government expenditure on
employment? The answer is that the rate of interest may be maintained at a stable level however large the budget deficit, given a proper banking policy. The rate of interest will tend to rise if the public do not absorb the government securities, by the sale of which the deficit is financed, but prefer to invest their savings in bank deposits. And if the banks, lacking sufficient cash basis (notes and accounts in the central bank), do not expand their deposits and do not buy government securities instead of the public doing so, then the rate of interest must rise sufficiently to induce the public to invest their savings in government securities. If, however, the central bank expands the cash basis of the private banks to enable them to expand their deposits sufficiently while maintaining the prescribed cash ratio, no tendency for a rise in the rate of interest will appear” (Kalecki 1944 [1990]: 360).

A second question arises. Let us suppose that the government debt continuously rises. Will not this increasing debt burden set a limit to deficit spending? Probably the best in connection with this question is again to reproduce in full Kalecki’s own answer:

“In the first place, interest on an increasing national debt…cannot be a burden to society as a whole because in essence it constitutes an internal transfer…Secondly, in an expanding economy this transfer need not necessarily rise out of proportion with the tax revenue at the existing rate of taxes. The standard rate of income tax necessary to finance the increasing amount of interest on the national debt need not rise if the rate of expansion of the national income is sufficiently high[2]…However, even if we leave this factor aside, it is

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2 As the reader can easily see, here Kalecki anticipated a reasoning which was later developed and formalized in Domar’s well known paper.
fairly easy to devise a system of taxation to service the debt which will not involve any disturbances in output and employment.

Imagine, for instance, that the interest on the national debt is financed by an annual capital tax, levied on firms and persons...The ...aggregate income [of capitalists after payment of capital tax] will remain unaltered...Further, the profitability of investment is not affected by a capital tax because it is paid in any kind of wealth...And if investment is financed by borrowing, its profitability is clearly not affected by a capital tax, because borrowing does not mean an increase in wealth of the investing entrepreneur” (Kalecki, 1944 [1990]: 363).

We may conclude this section by considering another, more radical objection to Kalecki’s (and Keynes’s) notion that a budget deficit can have a beneficial effect on the economy. A well known recent criticism to the idea was raised by Barro, according to whom agents are fully endowed with rational expectations, and that they anticipate that a budget deficit has to be paid in the future with higher taxes. Accordingly, as soon as the government announces a deficit, they immediately reduce their expenditure and save to pay future tax

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3 In that same paper, Kalecki (1944 [1990]: 364) considered also the possibility of a modified income tax as an alternative. By the way, Keynes (Kalecki [1990]: 579) thought highly of Kalecki’s proposal, and wrote: “I am very much taken by your modified income tax...Why don’t you apply it, however, to working capital also?”.
payments\textsuperscript{4}. Therefore larger government expenditure is immediately offset by lower private expenditure.

There are two points in this argument. One is purely theoretical in nature, and can be easily dismissed with a simple counter-argument. Let us suppose that agents are indeed endowed with rational expectations, but that these are of a different kind. Namely, let us assume that they anticipate that a budget deficit will bring about \textbf{higher} profits, output and income. It is self-evident that in this case their expenditure, and also the multiplier of government expenditure, would be higher than would otherwise have been.

The proof is almost trivial. Let us recall Kalecki’s basic profit and effective demand equations. Let us assume that capitalist expenditure and workers’ savings depend on the expected budget deficit $B^e$, such that:

$$Y = \frac{P}{e} = \frac{I(B^c) + C_K(B^c) + S_W(B^c)}{e}$$

It is plain that the impact of a higher (expected) deficit on output and employment, and on profits and future investment, will depend on the sign of the partial derivative of capitalist expenditure and workers’s savings with respect to $B^e$. The multiplier of the budget deficit will be higher if capitalist spend more when they expect a higher deficit, and when workers save less when they expect a higher deficit!

The second point is empirical. As the reader will have seen, the notion that agents will somehow react in anticipation to government policies, is closely

\textsuperscript{4} In fact, the criticism is even more extreme, in that it assumes that any government expenditure, even one not entailing a deficit, will be fully offset by lower private expenditure.
related with the so-called “Lucas-critique” to “naïve” econometric models. As the reader will recall, this critique puts forward the notion that when agents expect a given government policy, they anticipate it and respond to this expectation. Thus for example, if they expect a rise in government expenditure, and they anticipate that this will be followed in the future by higher taxes to finance that expenditure, they would reduce their expenditure today.

Now, to have a solid scientific content, the Lucas critique should have had and empirical verification. However, it turns out that this is not the case. Ericsson and Irons (“The Lucas Critique in Practice: Theory Without Measurement”, in Kevin D. Hoover, ed., Macroeconometrics: Developments, Tensions, and Prospects. Boston, MA: Kluwer, 1995.), analyzed a great number of papers devoted to the issue, and found none that actually confirmed the Lucas critique. In fact, there is no solid evidence whatsoever that agents react to government announcement or actions in the way supposed by Lucas or by Barro.

As a conclusion, we can restate Kalecki’s response to the idea of a government’s deficit expenditure that crowds out private spending. In fact, the opposite happens: when idle capacity exists, and when the monetary policy is adequate, the increase of the deficit causes an increase in the profits and on the levels of economic activity in the short term, which also tends to stimulate a growth of the economy in the medium and long term.

II. Taxes and Effective Demand

We will study now the macroeconomic impact of tax-financed public spending. Here it will be necessary to distinguish two extreme situations.

5 See also Mott and Slattery (1994) on this point.
Let us consider the case of an increase of public spending financed with taxes on wages (say, the Value Added Tax\(^6\)). What happens in this case? On the one hand, it will lower wage-earners consumption in a certain amount in the considered period. On the other hand, the state expenditure increases. Therefore, the increase of public spending is entirely offset by the smaller private spending, specifically, by the smaller demand of wage goods. The total effective demand is unchanged\(^7\).

On the contrary, if it is a tax that burdens only capitalists’ actual or prospective income, that is, if it is a tax on profits, the story would be different. In order to respond accurately to the question on how profits and total demand evolve in this case, it is necessary to analyze, in the first place, how the total expenditure of the capitalists evolves, and then how the tax would affect the distribution of income.

As mentioned time and again, Kalecki assumes that in any given (short) period, capitalist expenditure is predetermined, being the result of past

\(^6\) “By indirect taxes we mean the actual revenue from this source minus subsidies for private businesses plus profits from government enterprises” Kalecki, (1956 [1997]: 282).

\(^7\) An analogous case will take place when state firms raise prices. If they produce final goods, the price increase will directly reduce the real purchasing power of the population. If they produce intermediate goods, private firms’ costs will rise and they will increase prices to maintain their "degree of monopoly". Thus the real purchasing power of the population will also diminish. See previous footnote.
decisions. Thus, it can be accepted that the levying taxes on profits may affect capitalists’ spending decisions in future periods, but not in this period.

Hence, the autonomous part of private spending will be constant. What happens to income distribution, and to workers’ consumption?

Let us consider a first case. The tax falls on firms’ profits, and firms completely transfer the tax into prices. Then, with higher prices and given the nominal wage, the real wage drops; even as income distribution changes against wages. Anyway, we note here that while the demand of workers falls, the government’s demand rises, and accordingly the total demand is constant. The capitalist expenditure is constant, and the greater demand that results from a rise in the public spending is entirely compensated by the fall in the demand due to a lower workers’ purchasing power. This case is then identical to the one of an increase in government spending financed by taxing workers.

Please note, under these conditions, the degree of monopoly, or price-prime cost ratio, and the unit gross profit before taxes (determined by the relation between the new prices, which rise, and unit prime costs, which remain constant), both increase. Indeed, if taxes on profits are entirely transferred to prices, the unit profits margin before taxes raises, but total profits remain constant.

There will be then no increase of the effective demand. We insist; the reason why aggregate demand remains constant is that the expansionary effect of demand of increased government expenditure is offset by the contractionary effect on demand brought about by the change in the income distribution associated with the rise in the degree of monopoly, which causes a reduction in workers consumption.
Now let us see another possibility. Suppose that the tax falls on firms’ profits, and that firms do not increase their prices, but that they absorb this tax through their unit profits. As we already know, capitalists’ expenditure will be constant. Whereas this happens there will be no reasons to suppose modifications in wage-earners expenditure induced by the expenditure of the former (capitalists). Then, total private expenditure will be constant in the first instance. But the increase of the public spending will be added in net form to the total demand, and this will induce an extra spending of workers. Therefore, demand and output will rise in an amount equivalent to the rise of government expenditure plus the induced rise in workers’ consumption.

But, the question may arise, will not the tax negatively affect future investment, and hence output and employment in the medium- and long-run? With respect to the effects on future periods of a tax to profits, the following argument can be maintained. Since the after-tax profits of the current period have remained unchanged, the spending decisions of the capitalists for later periods have no reason to be modified due to the implementation of the profit tax. That is, if the capitalists do not immediately diminish their expenditure when the tax is implemented, there is no reason that they diminish it in future periods.

In conditions of underutilization of the productive capacity, the introduction of this new tax will have expansionary effect on the level of economic activity. Thus, we come to the conclusion that Kalecki fully anticipated the notion (later formalized by T. Haavelmo, 'Multiplier Effects of a Balanced Budget', Econometria, vol. XIII (October 1945), 311-18) that a balanced government balance may be expansionary. In fact, he also specified the conditions under which this could be the case. Namely, the tax should not be levied on the
workers; or, more in general, it should not be levied on private incomes that in the absence of the tax would be spend by the public.

Even more, government expenditure financed with corporate profit tax will not only increase the level of output and employment, but it will also modify the income distribution in favour of workers. Indeed, total wages will increase in proportion to the increase in output and, as total profits are constant their share in the total income will diminish. Profits will now represent a smaller share of a greater output.

III. Kalecki and Keynes on taxes and effective demand

Perhaps it will be interesting if we open here a parenthesis to show some contrasts between Kalecki’s and Keynes’s views of the consequences of taxes on profits and on effective demand. This is an issue that motivated a very illustrative view of the reasoning of the founding fathers of the principle of effective demand, and which also underlies differences in economic policy preferences. An exchange of letters regarding a paper sent by Kalecki to the Economic Journal (of which Keynes was the editor) deals directly with this

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8 He was assuming, of course, a closed economy. In an open economy profits would fall owing to the increase in the trade deficit (recall that in Kalecki’s theory, where workers do not save, in an open economy profits are equal to investment plus capitalist consumption plus the budget deficit plus the foreign trade surplus). See Mott & Slattery (1994) for an extension of Kalecki’s theory of taxation to the cases where workers save and where taxes may lead to higher mark-ups.
disagreement⁹. That paper, “A theory of commodity, income and capital taxation”, argued as follows. If an increase in public expenditure is financed with taxes levied on profits, and if capitalists do not pass taxes on to prices, then gross profits before taxes will increase enough to keep after-tax profits constant.

We have already mentioned three key assumptions involved in Kalecki’s argument. According to the first, in any given (short) period gross real investment and capitalist consumption are given, being the result of past decisions. According to the second, capitalists do not react on a day-to-day basis, but rather after a certain 'decision period'. Thus, the announcement, and even the enactment of the new tax, levied to finance an increase in government expenditure, will not bring about an immediate reduction in capitalists' expenditure because they will wait until the end of the current decision period and see what happens. According to the third assumption, firms will not raise prices when taxes on profits rise.

Now, according to Kalecki, if no reduction in investment and consumption occurs during this decision period, increased government expenditure will expand aggregate demand, dragging with it profits before taxes, so that profits after taxes will not be reduced. But if profits after taxes do not fall during this

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⁹ See also Asimakopulos (1990), and López and Mott (2000) for further details about this exchange.
decision period, then investment decisions, future investment, and future profits are not likely to fall.  

It seems worthwhile to present the main passages of the exchange of letters already alluded to. Keynes did no object to Kalecki’s third assumption, regarding the constancy of prices and profit margins after the tax. But he strongly criticized the other two assumptions. Upon receiving Kalecki’s paper, Keynes wrote to him, 'If capitalists assume that their income subject to tax will remain the same, the effect of the tax will surely be to reduce their spending. It is only if they have read your article and are convinced by it that profits will rise by the amount of the tax that they will maintain their spending as before.' (Kalecki, 1990 [1937]: 559. Emphasis added).

Kalecki answered as follows: 'After the introduction of new tax the entrepreneurs even if they expect their incomes to fall cannot immediately reduce their investment because it is the result of previous investment decisions which require a certain time to be completed. [...] Their consumption remains also unaltered, if their propensity to consume is not changed... [T]he expectation of future fall of income can influence the present propensity to consume. I think, however, that the capitalists' consumption is rather insensible to expectations...' Kalecki (1990 [1937], p. 560; emphasis in the original)

He added 'I think that this assumption [i.e. about the behaviour of capitalists following immediately the introduction of income tax] is essential not only for the problems of taxation, but for the whole of the General Theory. If, for

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10 Asimakopulos (1990) seems to be of the opinion that this assumption is not basic for Kalecki’s main theoretic results. For reasons we already gave we do not share his point of view.
instance the rise of money wages caused the capitalists to reduce immediately their consumption in expectation of future fall of profits, the result would be rather in accordance with the classical theory.’

Keynes’s rebuttal went as follows: “I regard the assumption that investment is fixed as unplausible. Firstly, because it ignores the possibility of fluctuation in stocks. Secondly, because it ignores the possibility of altering the pace at which existing investment decisions are carried out, and thirdly, because at best it can be overcome after a time lag, which may be very short indeed.

I think it unplausible to suppose that capitalists’ consumption is insensitive their expectations, for the latter are affected by the change in the taxes on their incomes…

…I hope you are not right in thinking that my General Theory depends on an assumption that the immediate reaction of a capitalist is of a particular kind” (Kalecki, 1990 [1937]: 561-62).

Anyway, the different opinions of our two authors on the subject had important implications in a very important and practical field, namely in the discussion about the finance of government expenditure in Britain during World War Two. Here they had to deal with a full-employment situation, which is quite atypical in capitalism. As the reader may perhaps recall, Keynes produced what became his famous pamphlet “How to pay for the war”. To curtail private consumption and investment, and free resources for the war, he proposed a scheme of compulsory saving based on taxes.

Kalecki, however, was very skeptic about the impact of a tax on consumption of the rich and the well-to-do. He put forward the following view:
“The fundamental problem of the war economy is to curtail the purchasing power of the population so as to prevent a violent rise in prices, which is bound to come, since the productive resources are limited...A solution...has been proposed by Mr. Keynes. His scheme of compulsory saving raises, however, two important objections:

(i) Compulsory savings will be in many cases offset by reduction in voluntary savings, or even by dissaving...

(ii) Mr. Keynes’s scheme does not attempt to establish a certain maximum for the consumption of the rich before compulsory saving is imposed on the poor. Moreover, it is clearly chiefly the rich who may elude the curtailment of consumption by dissaving” (1940 [1997]: 3).

Accordingly, to avoid an excess demand situation, and the ensuing inflationary pressures, Kalecki advocated rationing. He thought that this was the only alternative to cope with a tendency to excess demand, while safeguarding price stability and ensuring that the poorer strata of the population were not excessively harmed.

The end of this story is probably well known. Hesitantly at first and later at full speed, the British government had to end up rationing private consumption and investment. But of course this does not mean that they opted for the Kalecki’s proposal, because other considerations and event forced the final decision.

We conclude this parenthesis with a brief reference to the empirical issues involved in Kalecki’s arguments on the expansionary effect of state government based on taxing profits. In fact, in our view, any conclusion
concerning Kalecki’s theory cannot rely solely on the logics of reasoning but must be based on the real facts.

In the first place, Kalecki refers only to a paper by Szeworski (1962) in support for his “assumption that an increase on corporate profits is not passed on to the consumer through price increases” (Kalecki, 1962 [1991]). Szeworski’s paper is the only one we have been able to find in which the association between profit taxes and prices was investigates. Surely, we would need additional empirical research, using the more refined statistical techniques now available, to adequately asses the validity of Kalecki’s assumption. Anyway, such empirical studies as we have been able to consult seem to indirectly validate Kalecki’s guess. Indeed, in these studies prices appear to closely track unit prime costs, which do not include corporate profits. Moreover, we have found not a single study where corporate profits affect prices or the profit margins.

In the same vein, let us discuss now Kalecki’s two assumptions, on the time-lag between capitalist expenditure and its determinants. Evidence from the many investment studies does not appear to contradict Kalecki. In many of these studies investment depends on lagged variables (normally, lagged profits). Moreover, in practically all these studies, business fixed investment does not appear to react to short-lived modifications of the economic environment. The US 1987 stock market crash, for example, would seem on Keynes’s arguments very likely to provoke a collapse of investment (or consumption, for that matter), as was expected by many observers, but in

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11 See Fazzari & Mott (1986-87) and Fazzari et al. (1988) and the references cited there.
actuality it did not. To impinge upon investment, events have to have a minimum persistence.

A final point concerns the irrevocability of investment decisions once taken by entrepreneurs. Studies on the credit market and finance show that prior to, or at the start of business downturns, a lot of credit goes to finance investment planned earlier, though currently not needed. Firms find it extremely difficult and costly to cancel investment orders already placed, and must carry on their previous decisions even at the cost of increasing their indebtedness.\footnote{Wolfson (1994, 167-170) calls this 'necessitous borrowing'.} Thus, fixed investment seems to be quite insensitive to the current state of affairs.

Surely, though, this irrevocability cannot be extended to inventory investment - an objection put forward by Keynes in the exchange already alluded to. Indeed, we have ample evidence that inventory investment is highly volatile.\footnote{See for example, Carpenter et al. (1994). As Fazzari has pointed out in conversation, volatility does not in itself imply instability.} But in any case inventory investment rather tends to rise or fall only after a turn in the business cycle\footnote{Fazzari & Petersen (1993) argue that much of the cyclical variation of inventories may arise from firms' smoothing of fixed investment relative to profits' fluctuations.}.

Michael Evans (1969, pp. 95-105) summarizes the evidence up to that date on the lag structure of the fixed business investment function. He reports that investment is primarily determined by variables lagged one year or more. The studies he surveys also support the existence of 'decision' and
appropriations' lags as described by Kalecki. The decision lag -the time from observation of relevant factors to the formation of actual investment plans- seems to be around three to six months. The appropriations lag -the time between approval of the plans and the actual investment outlays- is estimated generally to vary from three to five quarters.

More importantly, Evans reports that the only variable whose changes between the dates of appropriations and expenditure seem to affect investment spending significantly is sales. This, in our view, supports Kalecki's view that prospective increases in taxes on profits or workers' wages should not decrease investment spending because of a perceived threat to prospective profits.

Summarizing what we have said on government’s spending and its forms of financing, we may conclude as follows. A greater state expenditure will contribute to a business upswing if the capitalist expenditure does not diminish, because then it mobilizes savings that otherwise would have been purely potential. Anyway, the expansionary effect of government expenditure when the expenditure is financed with deficit rather when it is financed with taxes on profits. In the first case the profits increase and in the second they remain constant. Unlike what happens with expenditure financed with taxes from profits, the expenditure deficit does not reduce the ratio of profits to income. In other words, such expenditure does not contribute to a redistribution of income. The governmental spending is not, then, incompatible with the private economic activity, but it can even favor it\(^\text{15}\).

\(^{15}\) According to Kalecki (1977, Ch. 12), the opposition of capitalists (and their advocates) to state intervention in the economy, is explained fundamentally by political reasons.
IV. Kalecki’s empirical studies

At a very early stage of the development of his work, our author carried out some empirical studies where he found support for the essential aspects of his theory of effective demand and of public finance. Thus, in Kalecki (1932 [1990]) he already anticipated, before Hitler came to power, the expansionary effect that the Nazi economic plan, based on public works and “inflationary” finance, could have in Germany\textsuperscript{16}. A bit later, he foresaw both the limit arising from the external constraint to German economic expansion, and how the ensuing rise of employment in that country would hardly benefit the working class because of wage control and rise in the price of necessities (Kalecki, 1933 [1990]). He completed all this with an outstanding and brief paper on Nazi Germany (Kalecki 1935). There, he was surely the first economist to use the principle of effective demand, already in a refined stage of its development, to analyze the Hitler’s economic policies and their macroeconomic consequences.

After several years, Kalecki came back in different papers to the empirical study of advanced capitalist countries, and particularly the US economy. We shall refer now to two of these papers.

To carry out his analysis, our author devised a special methodology with two purposes in mind. Firstly, to separate those components of income which determine changes in its volume, from those which play a purely passive role. Secondly, to analyse the impact of government expenditure on effective

\textsuperscript{16} “Inflationary” finance was the term that he used to refer deficit spending or credit expansion.
demand. Accordingly, he divided the national product in three parts: “(i) private accumulation, (ii) ‘net revenue of the government from persons’, and (iii) personal consumption of goods and services” (Kalecki 1956 [1997]: 281). Gross (or Social) accumulation is made up of investment in fixed capital, increase in inventories, and the export surplus. However, private accumulation is a larger concept because in it also “the budget deficit should be taken into consideration, because it means an increase in the government indebtedness to capitalists. Finally, we also include in private accumulation revenue form the corporate profit tax as accumulation ceded to the government” (Ibid, 281-282). On the other hand, “Item (ii) represents the budget revenue exclusive of taxes on corporate profits but only to the extend to which they are spend on business products. Thus this is a surplus of personal income tax, contributions to social insurance plans, and indirect taxes over and above the expenditure on the remuneration of the armed forces…and of government employees, on social insurance benefits, and on the interest of the public debt” (Ibid, 281-282).

We can easily see that a rise in any of the items included in Gross (or Social) accumulation, or in government expenditure financed via budget deficit, raises by an equal amount profits and has a large multiplier effect on effective

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17 Kalecki (1962 [1991]) applied the same methodology for a short piece on the Western German economy. Also, during the 1950s he directed a small team of economists at the Polish Academy of Sciences, devoted to the study of the economic situation in capitalist countries, which published a series of papers or books on the subject (see e.g. Kalecki and Szeworski 1957; Dobrska and Szeworski, 1958, 1959; Dobrska, Kalecki et al. 1960. See also Szeworski 1965).
demand. On the other hand, when the government finances its expenditure taxing corporate profits, effective demand is boosted but profits do not rise (so that the multiplier is smaller than in the previous case). Finally, when government expenditure is financed with ‘net government revenue from persons’, it crowds out private expenditure. Therefore, effective demand and output remain unchanged.

In the first of the papers we will discuss here, Kalecki compared the pre-war and the post-war situation in the USA. He pointed out that between 1937 and 1955, the productive potential had doubled. Then he asked the following question: How was it possible that the productive facilities were in fact utilized? Indeed, he stated, “the discrepancy between the development of productive forces and the market for their products constitutes one of the main contradictions inherent in the capitalist system…. [a contradiction that] in the period considered tended to grow more acute… [because]… big business’s relative share of accumulation of the national product[18] increased significantly” (Kalecki 1956 [1997]: 280).

In his study he found that the most important changes in the structure of final demand in the USA between 1937 and 1955 had been, firstly the change of sign of the trade balance, which went from a -0.5% of GDP to +1.3% of GDP. Secondly, the rise in taxes on corporate profits (from 1.9% to 5.8%). Thirdly, the fall of private consumption (from 78.7% to 72.5%). Fourthly, the rise of what he called “Net government revenue from persons”; namely, the net balance between personal taxes and transfers (from 4.9% to 6.3%). He thus concluded:

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18 i.e. the coefficient e of the text.
“The increase in the relative share of private accumulation in the national product... did not cause any underemployment of productive resources for the following reasons: the additional private accumulation was absorbed by armaments and by the export surplus, whose increase was associated with ‘foreign economic assistance’ or with the construction of bases abroad which provided the wherewithal for importing American goods. (Kalecki 1956 [1997]: 284).

The second paper was devoted to analyzing the shape and peculiarities of the business cycle in the USA between 1956 and 1961. He concluded: “The course of the business cycle in the USA in 1956-61 confirms the view that the capitalist economy still shows a tendency to go into recession, but that a high level of government expenditure during crisis, pay-outs of unemployment benefits, and such measures as easier credit for housing construction soften the course of the recession and accelerate the upswing” (Kalecki 1962 [1991]: 398)

Thus, in his study Kalecki found that expansionary fiscal policy in the US was not based on budget deficit, but on expenditure financed with taxes on profits. Therefore, he saw substantiation for his hypothesis that a balanced budget can be expansionary when taxes are levied on corporate profits. He also confirmed his critical stance on capitalism, because in spite of the rise in employment private consumption rose at a rather modest pace.

We conclude this section by noting that it is unfortunate that Kalecki had almost no following regarding his empirical studies of capitalist economies, and that his methodology has not had the impact it deserved. In fact, from what we know only Szeworski continued this line of research....

APPENDIX A
A simple model

Let us start off specifying the demand and output equation in a closed economy, with a non-negligible government. This is expressed as:

\[ Y = I + C_k + C_w + G \]  \hspace{1cm} (III.1)

Here, G is government’s expenditure in consumption and in investment (I refers exclusively to private investment).

Let us now study the consequences of government expenditure in the easiest case, that of deficit financing. We will formalize the analysis of the effects of a deficit using our schemes of reproduction. In addition to the three vertically integrated departments that we had originally, we add a fourth sector now, which produces only the goods that the government demands. We also suppose that all the government's expenditure takes the form of deficit. We will symbolize this deficit with the letter B.

<table>
<thead>
<tr>
<th>Department</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages</td>
<td>$W_1$</td>
<td>$W_2$</td>
<td>$W_3$</td>
<td>$W_b$</td>
</tr>
<tr>
<td>Profits</td>
<td>$P_1$</td>
<td>$P_2$</td>
<td>$P_3$</td>
<td>$P_b$</td>
</tr>
<tr>
<td>Income</td>
<td>I</td>
<td>$C_k$</td>
<td>$C_w$</td>
<td>B</td>
</tr>
</tbody>
</table>

If we assume that there are no unwanted changes in stocks, profits of the department that produces wage goods will be:

\[ P_3 = C_w - W_3 \]  \hspace{1cm} (III.2)

This surplus, by its material characteristics, is equal to the demand of wage-earners of the other three departments: That is:

\[ P_3 = W_1 + W_2 + W_b \]  \hspace{1cm} (III.3)

If we simply add $P_1 + P_2 + P_b$ to both sides of this equation, we get:
\[ P = I + C_k + B \quad \text{(III.4)} \]

Therefore, capitalists get greater profits from greater deficit spending. The financing of this greater government’s spending allows us to say that the capitalist class receives more profits without paying greater taxes.

Thus long as idle capacities exist the budget deficit will have a multiplier effect, and will not cause inflation, but an increase of the level of economic activity. And the deficit in the government’s spending thus turns out to be a mechanism of economic upswing just like investment or an export surplus.

From the equations previously stated and remembering that the capitalist consumption can be divided into two parts \( C_k = A + \lambda P \) the following is verified:

\[
P = \frac{I + A + B}{1 - \lambda} \quad \text{(III.5)}
\]

This means that when there is an increase in the budget deficit, profits are increased in the following magnitude:

\[
\Delta P = \Delta B / (1 - \lambda)
\]

It can be appraised that since \( \lambda > 0 \), the increase in profits is greater than the increase in deficit \( \Delta P > \Delta B \). It is this way because the capitalist consumption increases too \( \Delta P = \Delta B + \Delta C_k \).

We can also demonstrate that if the coefficient of income distribution \( (e) \) is constant, then the increase in the deficit will cause an increase in income greater than the increase of profits \( \Delta Y > \Delta P \), because it will also increase wage consumption \( \Delta Y = \Delta P + \Delta W \). This is expressed as follows:

\[
Y = \frac{I + A + B}{e(1 - \lambda)} \quad \text{(III.6)}
\]

\[
\Delta Y = \Delta B / (1 - \lambda) e
\]
This way the government deficit will increase profits and the realized national income, when financed without diminishing the liquid funds of the private sector destined to being spent in the period.

We will now formalized Kalecki’s analysis of government expenditure financed taxing profits. Let us assume that a new tax on profits is introduced which does not bring about a rise in prices. Total profits (P) can be separated as follows:

\[ P_b = P_a + H \quad \text{(III.7)} \]

In which \( P_b \) is profits before taxes, \( P_a \) is profits after taxes, and \( H \) is the amount of the tax on profits.

The coefficient of income distribution (e) will now have the following expression:

\[ e = \frac{P_b}{Y} \quad \text{(III.8)} \]

We must first of all note that neither prices nor the unit prime cost have changed. Now, maintaining the price-cost ratio means that the degree of monopoly is unchanged. But then, also the ratio of profits (before taxes) over realized income is kept constant.

Considering that:

\[ Y = I + C_k + C_w + G \]

Let us assume:

\[ Y = P_a + W + H \quad \text{(III.9)} \]

Let us further suppose:

\[ C_w = W; \quad H = G \quad \text{(III.10)} \]

We then get:

\[ P_a = I + C_k \quad \text{(III.11)} \]
It is clear that, since \( Pa \) is entirely dependent on \( I+Ck \), our assumption that \( I+Ck \) does not immediately change after the tax, entails that profits after taxes do not change either.

Moreover, let us suppose that the capitalist expenditure evolves accordingly to after tax profits (it is to say, according to net profits after taxes), then:

\[
C_k = A + \lambda Pa \quad \text{(III.12)}
\]

Therefore we can deduce:

\[
P_a = \frac{A + I}{1 - \lambda} \quad \text{ (III.13)}
\]

Consequently: given (III.7); i.e. \( Y = \frac{P_b}{e} \), we obtain:

\[
Y = \frac{\left[ \frac{A + I}{1 - \lambda} \right] + H}{e} \quad \text{(VIII.14)}
\]

This is, if the government collects a tax levied on profits, which he spends in the same period, the capitalist expenditure will remain constant. If such expenditure is not altered, total profits (after tax) will not change either. Why? Because, as a consequence of government expenditure, the output and sales increases are of such magnitude that there will be an increase of total profits before taxes such, that profits after taxes remain constant.

Furthermore, the rise in output - which has been caused by the greater public expenditure - will cause an increase of workers’ consumption that will be proportional to the increase in the level of economic activity. As profits after taxes are not altered and the total realized output increases, the ratio of the after-tax profits to total income will decline.
That is why the greater total expenditure that is financed with a profit tax not transferred to prices, will expand production, will increase the level of employment, and will bring about a shift from profits to wages.

Now let us explain the changes in the distribution of income. Accepting that the new tax does not affect the profits after taxes, prices will remain constant, and therefore the relation \( P_b/Y = e \), stays also constant. What happens to the employment in departments I and II? If the sectorial distribution of income is not altered (that is, if the \( w_1 \) and \( w_2 \) coefficients do not change) and considering that the level of capitalist spending has not changed, it can be deduced that in such situation level of employment will be constant.

The wage-earners wages and consumption that is induced by the capitalist expenditure is not altered because there has been no change in the level of the capitalist investment or consumption. If the distribution of income is constant, the level of employment and wages are also given.

Therefore, the increase of the government's demand and of the global demand will increase the production (output), the level of employment and the wage consumption. (The wage-earning consumption increases in that part that is independent of the capitalist spending, that is, in that part which depends on the public expenditure).

Changing the conditions of the analysis and supposing now that the new tax is transferred completely to the prices, the distribution of income is altered adversely to the wage-earners. The levels of output and employment in departments I and II would be constant; the nominal wages would be also constant, but the real wages would be lower. The real output and the level of employment in the department III, that produces good-wages, would be,
therefore, lower (falls the originating demand of departments I and II and also falls the demand from their own wage-earners), and the coefficient of sectorial distribution of income would also be smaller, affecting negatively the workers’ income.

Thus, the greater public demand would be completely offset by a smaller private demand, or more specifically, by a smaller workers’ consumption. This is the case of a tax to profits that is translated to a rise of prices.