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## **Kalecki's macroeconomic analysis and the 'great recession'**

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### **Introduction**

Kalecki wrote extensively on macroeconomic policies during the 1940s. The 1940s were years of war but also of high levels of employment. There was a sharp contrast with the preceding decade with years of depression, often seen as following the Wall Street crash of 1929 and bank collapses in the early 1930s. Kalecki also looked ahead to the post-war world, where he saw to see the potential return of depression and unemployment. The recovery from the 'great depression' had not been completed in the late 1930s and for many countries (including the UK and the USA) full employment was only secured with the onset of war. The 'great recession' has been running now for some five years, and at the time of writing unemployment in the euroarea, for example, remains at over 11 per cent and output remains below the level of 2007. The prospects are for continuing high levels of unemployment and slow growth.

In this paper we draw on Kalecki's writings in the mid 1940s written against a back-drop of an inter-war period plagued by high unemployment where any market driven forces of recovery were clearly weak. One key part of Kalecki's approach related to the balance between savings and investment. For example, he argued that 'the problem of employment was already before the war more difficult in the USA than in the UK because the percentage of income saved at the same degree of employment of the available labour force was substantially higher, and because this percentage was not normally offset by corresponding higher ratio of private investment plus export surplus to the aggregate income' (Kalecki, CW1, p.586). The 'great recession' has seen investment fall sharply which has been one of the factors driving the recession. But even before the 'great recession' there was a tendency for savings intentions to exceed investment intentions. In the aftermath of the 'great recession' it would seem likely that investment will recover but is not likely to in general exceed the sort of levels (relative to GDP) observed prior to the financial crisis.

In his writings on macroeconomic policy and employment of the mid-1940s, Kalecki made significant contributions of which we highlight the following.

First, in Kalecki (1943) he argued that full employment was technically possible through budget deficits and aggregate demand policies but there would be large social and political obstacles to full employment. Kalecki saw *laissez-faire* capitalism as inconsistent with sustained full employment. Kalecki in rather typical laconic style concluded by saying that "full employment capitalism" will, of course, have to develop new social and political institutions which will reflect the increased power of the working class. If capitalism can adjust itself to full employment, a fundamental reform will have been incorporated in it" (Kalecki, 1990, p. 356).

Second, in Kalecki (1944a), he examined the ways of budget deficit, investment stimulation and income redistribution as ways of raising and sustaining high levels of demand consistent

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with full employment. These are all ways of stimulating demand though Kalecki saw limits on the stimulation of investment essentially because a tendency for the capital-output ratio to rise which would entail some combination of falling capacity utilisation and rate of profit. 'It must be realized that a permanent budget deficit is not the only way in which lasting full employment can be secured. The same end can be achieved by redistribution from higher- to lower-income grades which tends to increase consumption out of a given national income (because the propensity to save of the rich—especially if one takes into account undistributed profits—is higher than that of the poor' (Kalecki, 1997, p.243)

Third, in Kalecki (1944b), he argued for the need for permanent budget deficits in the face of intentions to save exceeding intentions to invest. He criticised those who accepted that budget deficits would rise during economic downswings but who did not accept the arguments for the need for permanent budget deficits. As he argued 'there will emerge out of a consistent anti-cyclical policy a certain more or less stable level of private investment which by itself, i.e. without considerable assistance by loan expenditure of the public authorities, may fall short of the level required to 'fill the gap' of savings out of a full employment income. The White Paper does not propose to use public loan expenditure to push employment up to the level where unemployment, other than frictional is abolished' (Kalecki, 1997, p.243).

Fourth, in Kalecki (1945) he argued that securing full employment in the post-war era would require budget deficits in effect to offset the tendencies for intentions to save to exceed those of investment. 'The solution of the problem, of employment after the transition will require a much more unorthodox policy in public finance in the USA than in the UK. The latter will certainly experience serious difficulties in the sphere of foreign trade ... However, the financial problems involved in securing a national expenditure adequate to maintain full employment is likely to be of a much smaller order than in the USA' (Kalecki, 1990, pp.400-01). In the outturn, there was much higher levels of employment than in the inter-war period through a combination of higher rates of investment and budget deficits, where expenditure on armaments played a significant role especially in the USA (Kalecki, 1991, Part 4).

### **Imbalances between savings and investment and budget deficits**

In Kalecki's analysis, investment is a relatively volatile component of aggregate demand driving cyclical fluctuations, and the general rate of investment depends on a range of factors such as technological opportunities and degree of monopoly. Savings are largely undertaken out of profits, and Kalecki often used the working assumption of low or zero savings out of wages. Although savings and investment decisions are often made by firms, and profits are a source of savings and influence upon investment, savings intentions are not matched by investment intentions. When workers undertake savings (often in the form of pension funds), the possible mismatch between savings and investment is intensified in that if savings and investment are to be in balance the firms' demands for external funds have to match the savings undertaken by workers and rentiers—a line of argument which was emphasised by Kalecki's colleague Josef Steindl<sup>2</sup>.

There are two well-known conclusions to be drawn from Kalecki's general approach. First, there are not mechanisms which would aid the equality between savings behaviour and

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<sup>2</sup> For example, Steindl, 1979, 1982, and for a recent essay on Steindl's work see Shapiro, 2012 .

investment decisions to readily arise (as envisaged in much of the pre-Keynesian macroeconomics where the rate of interest was often seen as being set to achieve that outcome). Savings and investment are brought into equality through changes in the level of economic activity. But when there is a general tendency for savings intentions to exceed investment intentions, then there is a strong need for budget deficits to in effect absorb the difference between savings and investment. Second, the general tendency and pressures to invest will differ across time and across countries: the range of technological opportunities, the pressures or otherwise of competition, the terms on which loans and finance are available etc..

With broadly speaking, the capital-output ratio constant, the rate of investment (relative to GDP) is closely related with the growth rate of the economy. The experience of most industrialised countries in the past 40 years may suggest a growth rate of the order of 2 to 3 per cent per annum. Taking that range (without accepting that it is some 'natural' rate of growth, and acknowledging that pace of demand can have impact on the growth rate) with a capital-output ratio of 4 would indicate net investment to GDP of around 8 to 12 per cent, and then gross investment of the order of 16 to 20 per cent. A key question then becomes how would a rate of gross investment of that order of magnitude compare with the ratio of intended savings to income. If there are marked differences, there is little that interest rate changes and the like could do to reconcile them. But if they cannot be brought into some equality then either there needs to be substantial budget deficits (in the case savings rate exceeds investment ratio) or there will be deflation and unemployment. A feature of the past two to three decades has been a general tendency in the direction of income inequality and shift from wages to profits tending to increase the rate of savings. Some summary figures for the major European economies and euroarea area are given in Table 1 averaged over the years 2001-2007 as indicative of the average rates of investment and savings (relative to GDP) covering a cycle prior to the onset of the financial crisis. The significance we draw from those figures is the general tendency for savings to exceed investment.

Table 1 near here

In Table 2, the corresponding figures for budget deficit and current account position are given, and, of course, conform to the national income accounts identity of  $S - I = BD + CA$  where S is private savings, I private investment, BD budget deficit and CA capital account position (equal to negative of current account position).

Table 2 near here

Kalecki argued that there would be a need for permanent budget deficits, and not just deficits during some parts of the cycle offset by surpluses elsewhere. He pointed out that the conditions in which a deficit is required are those in which the funding of the deficit does not present difficulties simply because there is an excess of private savings over private investment (which can only be realised if there is a budget deficit). The 'Treasury view', which has come back with a vengeance in the form of the Eurozone 'fiscal compact as discussed below, was associated with the idea of the government seeking to balance the budget on an annual basis. Whilst it became realised that in a downswing of economic activity, tax receipts would fall opening up a budget deficit, and that attempts to correct that budget deficit through expenditure cuts and tax rate rises would make matters worse. There become an appreciation of the role of 'automatic stabilisers', and the role of 'big government' is providing a cushion against fluctuations in private economic activity. The 'White Paper on

Employment Policy' cemented that view. It argued that "to the extent that the policies proposed in this Paper affect the balancing of the Budget in a particular year, they certainly do not contemplate any departure from the principle that the Budget must be balanced over a longer period", and there was also concern in reducing "that part of the public debt which is a dead-weight war debt" (Ministry of Reconstruction, 1944 p.25). Kalecki (1944a) argued that the White Paper on Employment Policy had "not presented a programme for lasting full employment which must be based either on a long-run budget deficit policy or on the redistribution of income" (p.135). The rationale for this view was straightforward : either a budget deficit was needed to mop up with the difference between full employment savings and investment or full employment savings had to be reduced through a redistribution of income (from rich to poor). Kalecki regarded the third logical possibility, stimulating investment, as limited : "private investment must be pushed up to the level sufficient to expand the productive capacity of capital equipment *pari passu* with the increase in population and productivity of labour" (Kalecki, 1944b, p.57) but no further as he saw rising capital-output ratio and falling rate of profit (in this Kalecki was incorrect since, for a higher investment to output ratio, the capital-output ratio initially rises but then levels out). He also argued that "the proper role of private investment is to provide tools for the production of consumption goods, and not to provide enough work to employ all available labour..... Both public and private investment should be carried out only to the extent to which they are considered useful. If the effective demand thus generated fails to provide full employment, the gap should be filled by increasing consumption and not by piling up unwanted public or private capital equipment" (Kalecki, 1944b, pp.52-3).

The perspectives coming from the writings of Kalecki make the 'fiscal compact' being implemented by the countries of the Economic and Monetary Union (the euroarea) problematic to say the least (suicidal may be a more appropriate term). The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (European Union, 2012) (hereafter referred to as the Treaty) of which the 'fiscal compact' is the central part, and the associated so-called 'six pack' of policy measures seeks to enshrine balanced budget requirements on all member countries. These involve the imposition of a 'structural budget deficit' rule such that that notion of budget deficit does not exceed 0.5 per cent of GDP with a stricter policy imposed on countries with debt ratio exceeding 60 per cent of GDP to run surpluses to bring down the debt ratio. The deficit requirement is to be written into a country's national constitution or equivalent.

The writing of requirements on the achievement of a structural balanced budget into the national constitution embeds economic policy into the constitution whereas ideas on appropriate economic policy are not unchanging over time. It seems a folly to incorporate ideas what some, but no means all, think are appropriate policies into a document which is difficult to change, especially when those ideas are mistaken. It can also be seen as an attempt to tie the hands of the electorate and future governments on economic policies. Further, the implementation of a balanced structural budget requirement will be made difficult by disputes over the measurement of the structural budget position.

The key point which comes from the writings of Kalecki is that there is little reason to think that full employment and balanced budget are mutually compatible. In the context of the 'fiscal compact' this has shifted to whether a zero output gap (actual output equal to potential output) and balanced budget are compatible. The Kaleckian response would have to be that since there is little reason to think that savings intentions and investment intentions would be equal at full employment or at a zero output gap, there is little reason to think that a structural

balanced budget is possible. The argument needs to be modified in so far as a country's net exports and corresponding lending abroad can absorb the excess private savings over investment. But that is clearly not a universal option since global net exports must sum to zero. The 'fiscal compact' seeks to impose a 'structural balanced budget' which may often be impossible to achieve (and recall that the 'fiscal compact' is to be imposed on all members of EMU).

The post-war period unemployment situation turned out to be much better than the pre-war situation and better than would have been anticipated from the writings of Kalecki. Although lower rates of unemployment were generally achieved in the industrialised world, it was rare for full employment to be achieved. Along with budget deficits and forms of 'military Keynesianism', the rate of investment was substantially higher along with faster rates of growth. These were mutually re-inforcing and meant that a higher rate of investment did not lead to rising capital-output ratio and falling rate of profit which Kalecki had seen as a major limit on the use of investment as a stimulus for demand. A major question now is whether investment rates (relative to GDP) will be higher in the future than it has been during the recession and more significantly higher than in the pre-crisis decade. If the investment rate is indeed higher then the budget deficit requirements diminish and a 'structural balanced budget' may be come feasible. But, and recognizing the hazards of forecasting in a world of path dependency and fundamental uncertainty, it would seem much more likely that the investment rate will be lower in the future. The processes of financialisation have tended to lower investment rates<sup>3</sup>. Of particular importance is that a higher sustainable investment rate would have to be matched by a higher rate of economic growth, which runs into issues of environmental sustainability.

### **A Kaleckian model**

Some of Kalecki's central ideas on income distribution and macroeconomics can be readily summarised: the distribution of income between wages and profits can be viewed in terms of the degree of monopoly which in its simplest form refer to market power and the ability of firms to mark-up price over costs, and the volume of profits is closely related to the amount of investment (in the simple form where there is no savings out of wages in a closed economy, profits equal to investment/propensity to save out of profits). Two further aspects of Kalecki's approach are worth noting, though they play a much less prominent role. First, in Kalecki (1971), he sought to broaden the idea on degree of monopoly with the power of trade unions in effect placing limits on the degree of monopoly. Second, labour payments were divided into wages (of manual workers) which were marked-up in pricing, and salaries (of non-manual workers) which were not marked-up and in effect were paid out of the surplus and a deduction from profits. Since Kalecki was writing on this in the 1930s the balance between manual and non-manual workers has, of course, changed dramatically and the division as represented by Kalecki no longer relevant. However, the distinction amongst employees between those who manage and make key decisions and those who are managed

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<sup>3</sup> Hein (2012) argues that 'from a macroeconomic point of view financialization has affected long-run economic developments through the following three channels.

1. With regard to distribution, financialization has been conducive to a rising gross profit share ...and to increasing inequality of wages and top management salaries.
2. ...[ It has] had partially negative effects on firms' real investment in capital stock and hence on long-run growth of the economy to the extent that productivity growth is capital embodied.
3. ....it also generated increasing debt-income ratios of private households and thus increasing financial fragility.' (pp.2-3).

remains highly pertinent. Employment income cannot then be treated as homogenous but rather the income of ‘top managers’ be treated as more akin to an extraction from profits, and the propensity to spend out of employment income of ‘top managers’ would differ (being much lower) than the propensity to spend out of other employment income.

The Kaleckian models (which involve some differences from Kalecki but can be used to highlight some salient features) stemming from Bhadhuri and Marglin (1990) are along the following lines:

We start with a savings function of the form:

$$(1) \quad \frac{S}{K} = \frac{sP}{K} = s \frac{P}{Y} \frac{Y}{Y^c} \frac{Y^c}{K} = \frac{smu}{v}$$

This is a classical savings function whereby there are savings ( $S$ ) out of profits ( $P$ ), but with no savings out of wages. The inclusion of savings out of wages, provided that the propensity to save out of wages is less than the propensity to save out of profits, would make no essential difference to the analysis (though it would if the relative ownership of the capital stock by capitalists and workers were relevant). Actual output is  $Y$  and  $Y^c$  is capacity output (in the sense of the physical limit),  $K$  a measure of the capital stock and  $v$  the capital-capacity output ratio, and  $u = Y/Y^c$  is capacity utilisation.

Investment,  $I$ , is modelled as dependent on the rate of capacity utilisation  $u$ , the profit margin expressed as profits/output and denoted by  $m$  and a variable  $\mu$  a range of factors which influence investment, such as the state of ‘animal spirits’, the impact of technological opportunities etc., and which vary over time, and as a shorthand below  $\mu$  is referred to as ‘animal spirits’. Savings and investment are normalised by the capital stock  $K$  which provides a ready entry into growth rate (of capital stock). The rate of profit ( $P/K$ ) is given by  $mu/v$  and hence could be viewed as influencing investment through  $m$  and  $u$  (cf. Bhadhuri and Marglin, 1990). A linear form of the investment function is used for convenience:

$$(2) \quad \frac{I}{K} = \alpha u + \beta m + \mu$$

As a prelude to the discussion below, we denote by  $u^*$  a socially desired rate of capacity utilisation. It is anticipated from a Kaleckian perspective that, in terms of the notation above, in general (but not always)  $u < u^*$  and the employment rate is less than what would be considered full employment.

In a Kaleckian framework, the inadequacy of aggregate demand to secure high levels of capacity utilisation can be readily interpreted such that at the desired level of capacity utilisation the intention to save would exceed the intention to invest, that is:

$$(3) \quad \frac{smu^*}{v} > \alpha u^* + \beta m + \mu$$

This equation encapsulates some key features of a Kaleckian approach in that there is a tendency towards an excess of savings over investment, and where there is a lack of market forces which would reconcile savings and investment at a high level of economic activity (whether that is represented by full employment, target capacity utilisation etc.). It is changes in the level of economic activity which serve to bring actual savings and investment into line with each other.

The fiscal policy stance and foreign trade are now introduced to the savings and investment behaviour. Fiscal policy is represented here by the inclusion of the term  $d$ , the fiscal deficit relative to the capital stock, and net exports relative to the capital stock by the term  $x$ . The condition injections = leakages then becomes:

$$(4) \quad \frac{smu}{v} = \alpha u + \beta m + \mu + d + x$$

This can be also read as domestic private savings equal to domestic investment, budget deficit and capital account deficit (equal to net exports). Time sub-scripts are introduced to indicate that variables such as profit margin, 'animal spirits' vary over time. From equation (4), the rate of capacity utilisation is given by:

$$(5) \quad u(t) = \frac{(\beta m + \mu + d + x)v}{sm - \alpha v}$$

The rate of growth is set by the rate of investment, and the differences between savings and investment absorbed by the budget deficit. It can be readily seen from equation (4) that the budget deficit is funded from the difference between savings and investment, and that the budget deficit 'crowds in' with its positive effect on capacity utilisation.

The growth of the capital stock (equal to  $I/K$ ) is given by:

$$(6) \quad g_k(t) = \frac{\alpha(d + x)v + sm(\beta m + \mu)}{sm - \alpha v}$$

In this framework it can be readily seen from eqn. (5) that a budget deficit has a positive effect on capacity utilisation. From eqn. (6), it can also be seen that the budget deficit would impact positively on the (one period) rate of growth of the capital stock. The one period rate of growth of output would be based on the growth of the capital stock and change in capacity utilisation. There would be limits, coming from the growth of the labour force and of labour productivity, on the rate of growth of output and of the capital stock which are sustainable. This is not to accept some simple 'natural rate of growth' story since the growth of supply potential would itself be dependent on the growth of demand (Sawyer, 2011). But it is to recognize that there is some upper limit on sustainable investment and growth of the capital stock.

In effect, the budget deficit is set to enable investment expenditures to come through without being held back by savings behaviour. The appropriate scale of budget deficit can be readily calculated from these equations, where appropriate means the budget deficit required to secure the target level of economic activity, and capacity utilisation  $u^*$ . Thus from eqn. (5) the appropriate budget to secure  $u^*$  is:

$$(7) \quad d = \frac{smu^*}{v} - \mu - \beta m + \alpha u^*$$

This is easy to write down algebraically but would be extremely difficult in practice to make precise calculations of what is required. But it does represent a general principle, namely that the budget deficit should be targeted to achieve macroeconomic objectives, here represented as a desired rate of capacity utilisation. As such it stands in contrast with the prevalent view that budgets have to be balanced. The appropriate budget deficit would depend on a wide range of factors, which are here seen to be the profit margin (and hence the distribution of income between wages and profits, 'animal spirits' which drive investment (and more generally the tendencies and pressures on investment and the savings propensity. The

calculation of that budget deficit at any point in time is clearly not a straightforward exercise for even in this simple model (in which, for example, foreign trade has been ignored) knowledge of key parameters is required, yet those parameters vary over time.

A fuller analysis of the role of fiscal policy would need to enquire into the composition of taxation and of public expenditure. The structure and level of tax rates would have effects on the savings and investment functions. The latter would need to distinguish components of public expenditure (notably public investment, but also education expenditure) which impact on the growth rate of the capital stock both directly and indirectly through the impact on private investment decisions. The relevant capital stock for growth purposes would be extended to include (at least part of) public capital (e.g. infrastructure). The growth of the productive potential of an economy would depend on both private and public investment, and public investment through its demand and capacity building effects can be an effective stimulant of private investment.

The budget deficit which is relevant for the scale of fiscal stimulus is the total budget deficit (that is primary deficit plus interest payments). A continuing budget deficit (relative to capital stock) of  $d$  would then lead to the government debt (relative to the capital stock) stabilising at  $d/g$  when  $d$  has been measured in real terms (that is with allowance for the depreciation of the national debt as a consequence of inflation). In the absence of appropriate fiscal policy, the Kaleckian approach would imply that the economy would languish with a low level of capacity utilisation (and general implication of substantial unemployment) and low growth rate (which is demand determined). A budget deficit of  $d$  raises the growth rate by  $ad/(sm - av)$  (as compared with a balanced budget).

A key element in a Kaleckian approach is the distribution of income and its impact on the level of aggregate demand. As indicated in the introduction, Kalecki envisaged that shifts in the distribution of income in the direction of less inequality and higher wage share would stimulate the level of demand. This perspective places a different view on the roles of 'structural reforms' in the promotion of high levels of employment – simply where deregulation, more 'flexible labour markets', lowering of minimum wages are advocated, the effects on demand are likely to be negative, having an adverse impact on employment. In the model presented here, it is only the share of wages and profits which appear and a fuller analysis would clearly require full consideration of the structure of taxes and earnings inequalities. It is well-known that there have been substantial shifts in the direction of inequality and of higher profit shares over the past three decades. These shifts could have been anticipated to have raised tendencies to save, and hence to have raised the need for budget deficits. Indeed, as we have argued elsewhere (Sawyer, 2011), the progressive way to reduce budget deficits would be to reduce inequality which would have the effect of reducing the need for a budget deficit to sustain demand.

### **Concluding comments**

In this paper we have drawn on the work of Kalecki to argue that budget deficits and reduction of inequality are two major ways to securing a level of demand appropriate for full employment. At the present juncture it would have to be recognized that a shortage of productive capacity following the 'great recession' would be a significant constraint on the achievement of full employment. Kalecki's analysis is often portrayed with firms operating with excess capacity alongside labour being unemployed. There seems the implicit suggestion that there would be sufficient productive capacity to generate full employment if

only there was sufficient effective demand. But Kalecki argued that the right balance between capital equipment and available labour, with sufficient capital equipment needs to employ all the available labour and to leave some capacity in reserve, would be needed to enable full employment without inflationary pressures. 'If the maximum capacity of equipment is inadequate to absorb the available labour, as will be the case on backward countries, the immediate achievement of full employment is clearly hopeless. If the reserve capacities are non-existent or insufficient, the attempt to secure full employment in the short run may easily lead to inflationary tendencies in large sections of the economy, because the structure of equipment does not necessarily match the structure of demand' (Kalecki, 1990, pp. 361-2). The argument put here is that the extent to which countries are 'backward' (using the terminology of this quote) is more extensive than envisaged by Kalecki and that shortage of capital equipment is a more widespread phenomenon.

Kalecki (1943) was a clear expression that although the economic conditions in terms of level of demand which were required for full employment were established and that the tools (budget deficits) which could be used to achieve that were also established, there were close to insurmountable political and social obstacles. The 'fundamental reforms' which Kalecki saw as necessary are more remote than ever. On an analysis from the work of Kalecki, the present directions of policy travel of fiscal consolidation and lack of any measures to seriously confront inequality will seriously jeopardise a return to low unemployment.

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**Table 1: Savings and Investment relative to GDP, 2002-2007**

|          | Private Savings/GDP | Private Investment/GDP |
|----------|---------------------|------------------------|
| Germany  | 23.6                | 16.8                   |
| France   | 19.0                | 16.6                   |
| Italy    | 20.7                | 18.5                   |
| UK       | 15.3                | 15.3                   |
| euroarea | 20.8                | 17.7                   |

Note: all figures are in percentages

Sources: Calculated from Eurostat, OECD Economic Outlook

Table 2

|          | Budget deficit/GDP | Current account position/GDP |
|----------|--------------------|------------------------------|
| Germany  | 2.7                | 4.1                          |
| France   | 2.9                | -0.6                         |
| Italy    | 3.2                | -0.9                         |
| UK       | 2.4                | -2.5                         |
| euroarea | 2.0                | 1.2                          |

Note: all figures are in percentages

Sources: Calculated from Eurostat, OECD Economic Outlook