

# Effective Demand in Kalecki's Early Macroeconomics

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## 1. Introduction

In a series of articles (Chapple 1991, 1993, 1995) I have explored claims that Kalecki anticipated the essentials of Keynesian theory between 1933 and 1936. Here I turn my attention to Kalecki's early (pre-1932) macroeconomics. How does this work fit in with Kalecki's later pre-war publications? To what extent does this work lead on to a "Keynesian" theory of effective demand, where income is bought into equilibrium with expenditure via changes in output?

In 1929 Kalecki accepted a research assistantship as an economist and statistician at the Institute for the Study of Business Cycles and Prices in Warsaw, where he worked until 1936. His first three theoretical publications in economics - "On Activating the Balance of Trade" (1929), "Influence of a Reduction in the Prices of Industrial Consumer Goods on the Course of the Business Cycle" (1930) and "Consequences of Dumping" (1931)<sup>1</sup> - were published during his first two years at the Institute.

To an extent my two questions have already been answered. The answers given, as will become plain, are not ones with which I am in agreement. Kalecki's three publications are grouped together by Osiatynski, editor of Kalecki's collected works, under the title "First Theoretical Studies" (Kalecki 1990). The reason given for this grouping is as follows:

the essays... also have in common the line of argument that investments are determined by savings (called capitalisation in accordance with the contemporary terminology). This argument is consistently followed in both articles on activating the balance of trade, leading to the conclusion that if, in a given country, the level of investments is higher than the level of domestic savings, the gap is filled by foreign savings, appearing in the passive trade balance of that country. An increase in social 'capitalisation' makes it possible to substitute domestic savings for foreign savings, thereby reducing the domestic trade balance or even changing it into an active one...

About two years after the publication of this [1929] paper, Kalecki was to completely change his position on this matter [of saving and investment], arguing that, in the capitalist economy, investments (together with capitalist consumption) determine profits and hence also the savings that they require, and not the reverse... From this point of view Kalecki's proposition of 1933, that 'investments finance themselves', separates him not only from the economic theory of the time but also from his own first theoretical studies (editorial note, Kalecki 1990, p. 424)

In sum, Osiatynski argues that Kalecki believes that the saving tail wags the investment dog, an argument direct contrary to the theory of effective demand. There was a complete turnaround in 1932: Kalecki then came around to the opposite view that investment determines saving via profits. An influential reviewer of Kalecki's *Collected Works*, has endorsed Osiatynski's position: "[a]fter three early papers in which saving determines investment, in 1932 Kalecki made the vital 180° shift" (Harcourt 1991, p. 1608).

In all three studies Kalecki deals with an open economy. Unless trade is always balanced, investment cannot be solely determined by saving. In his work circa 1929-31 Kalecki almost always assumes that investment is fixed while saving varies with output. Osiatynski does not seem to have consistently grasped the difference between a closed and an open

economy. In an open economy investment is financed by some combination of domestic saving and foreign saving (the trade deficit). This is an identity and says nothing about whether one is working with a demand- or supply-driven economic theory, much less whether saving determines investment.

To ignore these essays in considering Kalecki's macroeconomics is unwarranted. Indeed, as Osiatynski is aware, Kalecki's early use of national income accounting aggregates in macroeconomic theory was a pointer towards a more modern macroeconomics. In addition however, Kalecki's first theoretical studies show a progression towards his later macroeconomic theories. In particular, the 1930 and 1931 articles present a distinctly demand-driven picture of the macro-economy.

In these early articles Kalecki's style is difficult to follow. The author seems in a process of intellectual transition. Perhaps this factor more than any other is responsible for the different interpretation placed on the three articles by Osiatynski and Harcourt. I propose to go through Kalecki's articles in detail, placing his ideas in a more familiar language, and drawing out their contributions to his later macroeconomics.

## 2. Kalecki's Macroeconomics, 1932-1939

I will be arguing for continuity between Kalecki's pre- and post-1932 macroeconomics. This is not to argue that his macroeconomic ideas did not develop through this period, but rather it is to suggest that the development was more evolutionary than both Harcourt and Osiatynski suggest. In order to provide background for my arguments, a brief synopsis is necessary of Kalecki's post-1932 theory of profits, investment and output determination. Kalecki's theory can best be illustrated by considering the simplest case of a closed economy with no government (an open economy is examined in Kalecki 1933B). The classical/Marxist assumption that workers consume all their wage is made. Thus profits  $P$  are equal to capitalists' consumption  $C_c$  plus investment  $I$ , i.e:

$$P = C_c + I$$

Kalecki argues that investment has causal primacy in determining the level of profits of capitalists and hence total saving (Kalecki 1932, 1933A). In some of his publications between 1932 and 1939 Kalecki assumes that capitalists' consumption is a constant and in others relates it to the level of profits.

To develop a theory of the determination of the level of output by the level of investment, Kalecki assumes a certain relationship between profits and output  $Y$ . In some of his publications Kalecki assumes that the share of profits is an increasing function of the level of capacity utilisation  $Y/K$  (e.g. Kalecki 1933A). In other publications Kalecki assumes that the share of profits is a constant (e.g. Kalecki 1933B, 1939). Consider the particular case of Kalecki's (1933A) monograph. Kalecki's explicit functional form for the share of profits can be written as:

$$\frac{P}{Y} = \frac{1}{\alpha} \left( 1 - \frac{r}{Y/K} \right)$$

where  $\alpha > 1$  and  $r$  are constants and  $K$  is the capital stock given in the short period (see Chapple 1993). Using the equation for the determination of profits and for determination of the profit share gives the level of output determined as:

$$Y = \alpha(C_c + I) + rK$$

If the profit share does not respond to capacity utilisation ( $r = 0$ ), it is a constant equal to  $1/\alpha$ , the inverse of the investment multiplier.

This model is, as I have argued elsewhere, the essence of Kalecki's theory of effective demand (e.g. see Chapple 1991, 1993, 1995). The question now to be dealt with is the manner by which Kalecki's early macroeconomics fits in with this model.

### 3. "On Activating the Balance of Trade"

Kalecki's first excursion into theoretical economics is an analysis of how to achieve a trade surplus. Why might Kalecki have been interested in the question of achieving a positive trade surplus? It is speculative, but there was probably a mercantilist-type link in Kalecki's mind between an active trade balance and high levels of domestic activity. Three means exist to the trade surplus end - import restrictions, export promotion by dumping or a cut in investment.

Kalecki begins by setting out various national income and expenditure accounting relationships. He uses the old-fashioned terminology of an active trade balance for a trade surplus and a passive trade balance for a trade deficit. The following equation used as an organising device is (recalling Kalecki uses capitalisation for saving):

$$\text{Passive trade balance account} = \text{Investments} - \text{Capitalization}^2$$

Kalecki argues that import restrictions will raise production of import substitutes if domestic production costs of producing import substitutes do not turn out to be greater than costs abroad. Higher production of import substitutes and the consequent direct fall in imports raises capitalisation because of increased saving by capitalists from the new production and by "increased capitalisation of the unemployment fund, which, because the jobless have been put to work, is relieved from having to pay them the dole" (Kalecki 1929, p. 17).<sup>3</sup> However, higher imports of raw materials and capital goods must take place to increase production of import substitutes. Also rises in wages and profits from the new industry raises consumption (workers are assumed to consume on their wages) and hence increases other imports or reduces exports. As a consequence of these factors, the trade balance, while improving, does not do so by the full value of the increased production of import substitutes. The conditions for the trade balance to improve by the full amount of the rise in production of import substitutes - no intermediate import requirement in production, zero imports from higher wages and profits and no diversion of exports to domestic production - are too stringent to be realistic.

Moving on to consider raising exports via dumping, Kalecki concludes that it only raises capitalization if the higher volume of output in the dumping industry produces a significant fall in production costs.

Finally, Kalecki considers investment reductions as a means of activating the trade balance. Higher investment worsens the balance of trade, directly via the importation of machinery and indirectly because "building a plant generates increased consumption both by construction workers and by those in brick and cement works as well as by... entrepreneurs" (Kalecki 1929, p. 19). A crude proto-Kahnian expenditure multiplier perhaps? It would seem not, for Kalecki (1929, p. 19) goes on to state that the result of higher investment is "an increase in imports or a decline in exports of consumption goods". There is no mention of secondary changes in output which might be driven by a change in investment. However, Kalecki makes it clear that investment changes generate their own financing by changing the trade balance and thus using foreign saving, rather than being determined by domestic saving as Osiatynski suggests.

Kalecki's major conclusion in the 1929 article is that saving does not rise by the amount of import substitution or export dumping, but by a percentage. The focus is on the first round relationship between output and the trade balance. There are no demand-side multiplier effects. However, it is noteworthy that despite this, real production may increase directly under import restrictions, implicitly because of existing unemployed factors of production.

#### 4. "Influence of a Reduction in the Prices of Industrial Consumer Goods on the Course of the Business Cycle"

This article deals with the effect of an exogenous reduction in price-cost markups which lead to a fall in administered prices of industrial consumer goods. With constant money wages, the real wage in terms of industrial consumer goods rises. Using a largely numerical example, he sets out to examine the subsequent impact on "the future course of the business cycle" (Kalecki 1930, p. 21), although the article contains neither explanation nor discussion of the cyclicity of investment, profits or production. The model developed is implicitly one of three sectors - industrial consumer goods, investment goods and agricultural goods, but the latter two sectors remain firmly in the background.

Kalecki begins by making three assumptions. First, price reductions are fully passed on to consumers via the retail sector. Second, the price fall causes no substitution of expenditures into industrial consumer goods. While some of the increase in consumers' incomes will be spent on agricultural products, this returns to the industrial consumer goods sector as purchasing power. In addition, it will not reduce agricultural exports because of a positive supply response of agricultural commodities to a lower price of industrial consumer goods (Kalecki 1930, p. 23). The only other substitution possibility is between domestically produced and imported consumption goods, which Kalecki also assumes away.<sup>4</sup> Kalecki's third and final assumption is that workers' money wages remain constant after the price change.

Kalecki denotes the price of industrial consumer goods by "a" and its volume by "b". His basic equation is the identity  $b = \frac{ab}{a}$ , where  $ab$  is the value of production and nominal expenditure, and  $b$  is real production and expenditure. Kalecki assumes that the price comprises 30 per cent foreign raw materials, 40 per cent labour cost and 30 per cent gross profit (before the price cut) and that unemployment benefits are paid from the taxation of profits.

Unlike the 1929 paper, Kalecki's analysis now implies a multiplier process. The nub of Kalecki's arguments regarding the impact of lower prices on industrial consumer goods production and employment is expressed in the following quotation where he analyses the impact of a 10 per cent fall in prices:

If for the moment we ignore changes in the money purchasing power of consumers (see below), then output will increase by the same proportion as prices fall and hence output will be  $ab/0.90a = 1.11b$ . An increase of employment of 11% will follow, but this in turn will generate a further increase in the purchasing power of consumers. Each newly employed worker will spend his entire wages, whereas before he spent only his unemployment benefits, which were 50% of his wages; and thus his purchasing power will increase by 50% of his wages...

If we denote by  $x$  the increase in production due to a reduction in prices, and assuming that the cost of labour per unit output continues to be  $0.40a$ , we find that the increase in the money purchasing power will be 50% of  $0.40ab$ ,<sup>5</sup> i.e.  $0.20ax$ ; that is, the money purchasing power will be:  $ab + 0.20ax = (b + 0.20x)a$ .

At a unit price equal to  $0.90a$  the total volume of new production will be  $b + x$ . On the condition that the money value of production must be equal to the money value of the relevant purchasing power, we obtain:

$$(b + x)0.90a = (b + 0.20x)a$$

$$x = 0.143b$$

$$b + x = 1.143b$$

Hence, on our assumption, a 10% reduction in prices causes an increase in employment of more than 14%. (Kalecki 1930, p. 22)

The fall in price-cost margins has a number of effects on the consumer goods sector. First, the price fall raises real expenditures on consumer goods from outside the sector by the percentage fall in prices. Second, this rise in real autonomous expenditure has multiplier effects on output. Finally the shift in income distribution from profits to wages changes the value of the consumer goods multiplier, further raising output. All of these factors shift the aggregate demand curve for industrial consumer goods outwards. With fixed coefficients and a horizontal aggregate supply curve for industrial consumer goods, output rises to a higher level.

Kalecki's model can be formalised. The following definitions hold:

a	price of industrial consumer goods (a = 1 as a starting value)
b	real volume of sales of industrial consumer goods
E	nominal expenditure on industrial consumer goods
P	gross profits in the industrial consumer goods sector
U	unemployment benefit payments
$W_{i,c}$	wage bill in investment/industrial consumer goods sector
M	imports of inputs for industrial consumer goods
L	industrial consumer goods sector employment
$\bar{L}$	the labour force less employment in the investment goods sector
w	wage rate in the industrial consumer goods sector (w = 1 as a starting value)

The following accounting relationships hold:

$$ab = E = P - U + W_c + U + M$$

$$W_c = wL$$

The following behavioural relationships apply:

$$E = W_i + W_c + U$$

$$L = .4b$$

$$U = .5w(\bar{L} - L)$$

Following Kalecki's hints it is assumed that expenditure on industrial consumer goods is equal to the wage bill of consumer goods sector workers, the given wage bill in the investment goods sector and unemployment benefits.<sup>6</sup> Zero consumption of industrial consumer goods Out of profits is implicit. Employment is a fixed proportion of industrial consumer goods production. Unemployment is equal to the labour force less investment and consumer goods sector employment. Total unemployment benefits are equal to half the wage rate multiplied by the level of unemployment. Therefore total money spending on industrial consumer goods is  $E = W_i + .5wL + .5w\bar{L}$ . Since  $E = ab$  and employment is  $.4b$ , production of consumer goods is:

$$b = \frac{W_i + .5w\bar{L}}{a - \frac{.5w}{a}}$$

Now consider this formalisation in relation to the previous quotation. Kalecki first considers a change in prices without a change in  $\frac{1}{1 - 2\frac{w}{a}}$ . He concludes that production will

rise directly by 11%. However since expenditure on industrial consumer goods is related to their production there will be a further increase via the goods market multiplier (which is now higher due to a shift in the distribution of income from profits to wages and the assumption

that saving is made only from profits). A 10% price fall causes a 14.3% overall rise in production - Kalecki's conclusion.

Logically speaking, Kalecki's 1930 model is a theory of output determination by expenditure. Lower prices due to a fall in price-cost margins raise real wages, expenditure and employment. In his example Kalecki calculates the amount by which production and employment rise. In effect Kalecki's argument is a combination of the paradox of thrift which emerges out of a simple income and expenditure model of effective demand: a lower propensity to save raises equilibrium consumer goods output with given investment - and of the operation of the multiplier itself when real exogenous expenditure rises. Kalecki's approach is reminiscent of the diagrammatic summary of his theory of effective demand, drawn from his later work, that Cambridge students imbibe as a Kaleckian primer.<sup>7</sup>

After having analysed the amount of output and employment rise, Kalecki goes on to consider what happens to profits, concluding that "[t]he reduction in 'corrected' gross profit (in absolute terms) is equal to the increased use of foreign raw materials." Kalecki indicates that profits fall by an amount equal to the rise in raw material imports. Since profits after the payment of doles (corrected gross profits) are  $P-U = W_f - M$  and imports rise with production, profits fall as output expands. Kalecki's conclusions are consistent with the formalisation of his model.

Kalecki (1930, p. 24) make a footnote reference to "On Activating the Balance of Trade" where, as has already been shown, there are no expenditure multiplier effects. This might be interpreted as evidence he does not understand his model. However all that Kalecki claims is that if imports increase as a consequence of a price fall and real wage rise which increases output, then saving will fall. With investment and exports exogenously given, it is necessarily true that higher output requires an increased capital inflow which in turn must mean reduced saving (from profits).

Kalecki (1930, p. 25) concludes by pointing out that "an expansion in output of industrial consumer goods, due to reduction in their prices, will only relieve the business depression, rather than facilitating entry into the recovery phase". This seems an unusual statement to make on the basis of his later work. Higher output has been accompanied by a fall in profits which should act to reduce the incentive to invest, acting as a brake to recovery. Since however Kalecki does not provide a theory of investment, merely assuming it remains fixed, this criticism cannot be taken any further.

## 5. "Consequences of Dumping"

Again in 1931 Kalecki moves towards a more complete demand-side open economy macroeconomic theory. Kalecki (1931) examines the consequences of export dumping on the trade balance.<sup>8</sup> His basic equation is derived from the equilibrium condition that investment plus exports equals saving plus imports, under the assumption that investment is constant. The equation is  $\Delta H = \Delta A$ , where H is the trade balance and A is the accumulation of capital or saving.

Kalecki defines N as the volume of new exports due to dumping, m is the average price of total sales of the industry in question (including exports) measured as profit per unit plus wages per unit output, n is the corresponding price of the dumped exports ( $n < m$ ),  $\alpha$  is the proportion of a unit of m going in wages and  $(1-\alpha)$  is the proportion of a unit of m going in profits. Kalecki (1931, p. 29) suggests that " $\alpha$  [the wage share] will be a proper fraction, usually greater than 0.5, and consequently  $1 - \alpha$  [the profit share] will also be a proper fraction, usually less than 0.5". He also assumes that workers do not save and capitalists' consumption is unrelated to their profits.

According to Kalecki, the advantages of dumping are that nominal consumption will rise directly in the dumping industry by  $N\alpha m$  and that the accumulation of capital (a term used interchangeably with capitalization for saving in the article) in the dumping industry will rise directly by an amount  $K = N(1 - \alpha)m$ . However, because prices are lowered in dumping exports, Kalecki assumes that they are raised domestically to cover any losses. Higher domestic prices lowers consumption or capitalisation, depending on whether the burden falls on wages or profits. Losses in the dumping industry are equal to the change in the volume of exports  $N$  arising from dumping multiplied by the difference between the average price of total sales and the dumping prices ( $m - n$ ), which are then assumed to be passed on into the domestic economy.<sup>9</sup> Kalecki examines three cases, firstly where dumping losses falls on real wages of workers and therefore consumption, secondly where they falls on profits and therefore saving, and thirdly where they are shared between consumption and saving.

Consider the case where dumping costs fall solely on consumption. Kalecki asserts that the rise in total consumption is equal to the direct rise in the dumping industry,  $N\alpha m$ , less the loss on dumping which falls on domestic consumers,  $N(m - n)$ . Thus the change in consumption is  $N[n - (1 - \alpha)m]$ . The critical condition for consumption to rise, argues Kalecki,

is that  $\frac{n}{m} > 1 - \alpha$ . Thus Kalecki concludes that the impact on consumption under these circumstances is indeterminate. Regarding the accumulation of capital in the dumping industry, Kalecki indicates that if it were assumed that the change in consumption  $S$  is covered by a change in imports  $P$  there would be no change in output. However, Kalecki then goes on to argue that:

the assumption that an increase in consumption is wholly covered by increased import [sic] is not only arbitrary but false: unquestionably part of this increase will be covered by domestic production. Then  $P < S$ , and  $Nn - P > K$ .

Hence, apparently, in this case equation (3), representing the equalisation of the balance of trade and capital accumulation, is not met. In reality, however, with an increase in domestic production necessary partially to cover the increase in consumption,  $S$ , the symbols used no longer strictly represent the relevant magnitudes. Since in this additional production new workers have been hired, total consumption has now increased, not by  $S = Nn - N(1 - \alpha)m$ , but by  $S' > S$  and thus import [sic] as well was  $P' > P$ . Finally, this 'secondary' production generated a 'secondary' accumulation of capital, and the total increase in accumulation was not  $K = N(1 - \alpha)m$  but  $K' > K$  and  $P'$  reach such a level that instead of the inequality  $Nn - P > K$ , we obtain the equation:  $Nn - P' = K'$  (6)

( $P'$  will remain less than  $S$ , for already, if  $P' = S$ , from equations (6) and (5) it follows that  $K' = K$ , i.e. that the 'secondary' production will not be generated at all.)<sup>10</sup> ... This means that the increase in social income is greater than the value of the dumped export; the surplus is obviously a result of starting up a 'secondary' production partially to cover the increase in demand for consumer goods. (Kalecki 1931, pp.30-31)<sup>11</sup>

Increases in saving and hence profits may give rise to additional investment. "[I]n so far as these investments are produced at home, they will contribute, like the increased wage bill, to a 'secondary' increase in social income" (Kalecki 1931, p. 31). Thus Kalecki presents an embryonic investment function where there is a positive propensity to invest from profits. However, there is an important distinction between this embryonic investment function and the assumption that investment adjusts passively to saving. In some cases, Kalecki concludes, it is possible that the income rise will be smaller than the value of dumped exports, and may even fall. In all cases the accumulation of capital increases with dumping.

Now consider the case where losses from dumping  $N(m - n)$  cause lower capital accumulation (saving) elsewhere. Consumption rises directly in the dumping industry by the addition to the wage bill  $N\alpha m$ . The accumulation of capital rises in the dumping industry by  $N(1 - \alpha)m$  and falls elsewhere by  $N(m - n)$ . Therefore  $K = N(n - \alpha m)$ . The initial accumulation of capital, according to Kalecki, will rise if  $\frac{n}{m} > \alpha$ , and fall if  $\frac{n}{m} < \alpha$ . Again, this is not the story's end:

as a result of starting up of additional production necessary to cover the increase in consumption  $S$ , a 'secondary' consumption and a 'secondary' accumulation have been generated. Hence the total increase in consumption is not  $S = N\alpha m$ , but  $S' > S$ ; the total increase in import is  $P' > P$ ; the total increase in capital is not  $K = Nn - N\alpha m$ , but  $K' > K$ .  $P'$  and  $K'$  reach the level at which equation (6) [ $Nn - P' = K'$ ] is met.

Thus it turns out that, if  $n/m > \alpha$ , then  $K'$  is certainly greater than zero, but with  $n/m < \alpha$ , in some cases  $K'$  can also be positive. For instance, if the total increase in consumption is covered by domestic production, i.e.  $P' = 0$ , then  $K' = Nn$  regardless of the ratio  $n/m$ .

The increase in social income will always be greater than  $Nn$ . Indeed:

$$\begin{aligned} S' &> N\alpha m \\ K' &> Nn - N\alpha m \\ S' + K' &> Nn \end{aligned}$$

(Kalecki 1931, pp. 32-33)

What happens when the losses of dumping are borne partly by lower consumption and partly by lower accumulation? Kalecki denotes the proportion of losses falling on consumption as  $\phi$  and on capital accumulation as  $1 - \phi$ . If the good in question is a consumer good,  $\phi$  is equal to one, although Kalecki (1931, p. 33, note 3) notes that this case is rather rare, because of real wage resistance on behalf of the workers. If the good is an input, Kalecki argues, one does not know what part of the losses will be shifted onto consumption and what part onto profits. He concludes that consumption, capital accumulation and income may all rise or fall in the general case.

Kalecki's model of dumping can be formalised allowing his conclusions regarding the impact of dumping to be checked. The important conclusion of Kalecki's work on dumping is that (unlike his 1929 worlds) there may be an expenditure multiplier in excess of one. Kalecki argues that under certain circumstances the change in income, which equals the change in consumption plus the change in saving, is greater than the change in exports, due to secondary increases in production.

Formalising Kalecki's arguments requires two additional assumption, first that the change in imports is a fixed proportion of the change in output and second the share of profits in national income is constant (assumed here to be equal to the share in the dumping industry). Such an assumption is consistent with the fixed coefficients nature of Kalecki's model. For ease of understanding modern notation is used with original notation bracketed. Let the following definitions hold:

$\Delta Y$	change in output
$\Delta C$	change in consumption ( $S'$ )
$\Delta S$	change in saving ( $K'$ )
$\Delta X$	change in exports ( $Nn$ )
$\Delta M$	change in imports ( $P'$ )
$m$	average economy-wide price
$n$	price of dumped exports
$\alpha$	economy-wide wage share



$\beta$  import-output ratio ( $0 < \beta < 1$ )

$\phi$  proportion of dumping losses falling on consumption

For a given level of investment, the following national income relationship holds:

$$\Delta Y = \Delta C + \Delta S = \Delta C + \Delta X - \Delta M$$

The following behavioural relations hold for aggregate consumption and imports:

$$\Delta C = \alpha \Delta Y - \phi(m-n)N$$

$$\Delta M = \beta \Delta Y$$

These equations indicate (1) that the change in consumption is equal to the change in the wage bill (output times the proportion of output consumed, equal to the wage share) less the amount of losses of dumping which fall on workers and (2) imports rise as some proportion of the rise in output.

Substituting for  $\Delta C$  and  $\Delta M$  in the national income equation gives the following relationship for the change in output when exports are dumped:

$$\frac{\Delta Y}{\Delta X} = \frac{1 - \phi(m/n - 1)}{1 - \alpha + \beta} < 0$$

In the general case a rise in dumping may cause output to rise or fall. If  $m = n$ , that is to say if there was an exogenous rise in exports, this expression would be positive and would resemble a standard foreign trade multiplier with  $1 - \alpha$  being the propensity to save and  $\beta$  the propensity to import. When all losses fall on consumption,  $\phi = 1$  and output may rise or fall. When all losses fall on saving,  $\phi = 0$ . Output must rise by  $\frac{\Delta X}{1 - \alpha + \beta} > \Delta X$ . This is as Kalecki suggests,

although without calculating the exact  $1 - \alpha + \beta$  multipliers. Kalecki (1933B) explicitly derives such a foreign trade multiplier (Chapple 1991).

Now consider the behaviour of consumption in response to a rise in exports as a result of dumping:

$$\frac{\Delta C}{\Delta X} = \frac{\alpha - \phi(1 + \beta)(m/n - 1)}{1 - \alpha + \beta} < 0$$

Again the results are in accordance with Kalecki's conclusions. Consumption will rise if  $\phi = 0$  and otherwise may rise or fall after dumping.

Finally consider how saving responds to a rise in dumped exports:

$$\frac{\Delta S}{\Delta X} = \frac{1 - \alpha + \beta\phi(m/n - 1)}{1 - \alpha + \beta}$$

This expression will always be positive, since  $m > n$ . In the case of capital accumulation, one of Kalecki's conclusions is not always correct: saving and profits will always rise if export dumping is undertaken.

#### 4. Conclusion

What can one say about Kalecki's early theoretical work? These three early articles are significant for the further elaboration and development of Kalecki's macroeconomic theories, particularly the 1930 and 1931 papers. They sketch out aspects of the theories that he was later to develop. They are not supply-side juvenalia, unimportant to development of his more mature work. There is no revolutionary shift in Kalecki's macroeconomics in 1932. While the 1930 and 1931 essays do not examine the impact of changes in investment, in both cases output in the model developed is expenditure-driven: in the 1930 essay by a rise in real wages and hence consumption, in the 1931 essay by a rise in dumped exports.

The three articles all have certain features in common. All three use conventional macroeconomic aggregates, all deal with an open economy and all focus on the importance of quantity adjustments. None of the three early articles is an attempt to explain the cyclical

behaviour of the economy and all use a comparative static method without taking into account changes in the capital stock

In terms of my initial questions, do any of Kalecki's early theoretical articles contain the theory of effective demand? Logically speaking, a theory of effective demand can be constructed from both the 1930 and 1931 articles. In the 1930 article Kalecki shows that higher real wages and expenditure (as a result of a fall in the price level and constant money wages) will raise output and employment in the consumer goods sector, which is a direct implication of the theory of effective demand. In the 1931 article, Kalecki shows that the expenditure multiplier will be positive and in excess of one when dumping losses fall on saving. While Kalecki does not calculate nor suggest it is possible to calculate this multiplier, it is a simple extension of the analysis he presents. Again, the expenditure multiplier is a direct implication of the theory of effective demand.

Does Kalecki demonstrate a full understanding of the theory of effective demand in these two articles? The answer, on the available evidence, is no. If Kalecki had possessed a full understanding of the theory of effective demand he may not have concluded in 1931 that export dumping could possibly reduce saving and profits, a conclusion which has been demonstrated above to be inconsistent with the theory of effective demand.<sup>12</sup> However, Kalecki's work forms part of an evolutionary progression from his early, overly-complex and incompletely developed demand-driven models to the inspired simplification of his later theory of effective demand.

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## Notes

<sup>1</sup> Kalecki's 1929 article was published originally in *Przemysł i Handel* [Industry and Commerce]. The name of this journal was subsequently changed in 1930 to *Polska Gospodarcza* [Polish Economy] in which the 1930 article also appeared. The 1931 article was published in *KoniunSura Gospodarcza* [Business Review], the bulletin of the Institute for the Study of Business Cycles and Prices.

<sup>2</sup> Kalecki also includes net income transfers from abroad in his equation. Since they play no role in his theoretical analysis, they are omitted from the equation here. Consumption and investment embody both government and private consumption and investment.

<sup>3</sup> Kalecki's analysis of increased saving from higher income because of lower dole payments is reminiscent in part of Keynes and Henderson (1929) and of Kahn's (1931) "savings on the dole" as an "alleviation" to increased expenditure in his famous *Economic Journal* multiplier article.

<sup>4</sup> Regarding these substitution effects Kalecki writes:

Obviously part of the purchasing power [from higher real wages and unemployment benefits], though not very significant [sic], will be spent on foreign products but this will probably be compensated for by increased sales of industrial goods at the cost of reduced imports [due to a lower domestic price level], which we have not taken into account in our argument. (Kalecki 1930, p. 23, note 1)

<sup>5</sup> This is either a typographical slip in the translation or in the original article. The increase in money purchasing power will be 50 per cent of  $4ax$ .

<sup>6</sup> For simplicity, expenditure by the agricultural sector on industrial consumer goods is ignored. If it were considered, it would merely add another constant money expenditure to the equation.

<sup>7</sup> On this model see Robinson (1977, pp. 192-193) and Kriesler (1987, pp. 89-90).

<sup>8</sup> Kalecki was dealing with an issue which was of importance to the Polish economy at the time. From the mid-1920s onwards there was considerable growth of cartelization in the Polish economy, especially in the export trades. Cartels often indulged in dumping on foreign markets:

The whole export policy was based on the cartels. Many export branches, especially sugar, coal, steel, oil, zinc, were based on the price discrimination between internal and export prices, the deficit in export prices being covered by the excess of internal prices. (Zweig 1944, p. 102)

On the issue of price discrimination in Poland during the inter-war period by cartels between export and home markets see in addition Landau and Tomaszewski (1983, pp. 65-6), in his pre-1929 career as an economic journalist Kalecki had written many short articles on these cartels, as can be seen from the bibliography in Feiwel (1975).

<sup>9</sup> A numerical example can clarify Kalecki's arguments. Consider a dumping industry producing 100 units of value added which it sells on the domestic market. Prior to dumping it is assumed that the dumping industry does not export.  $m$  is defined by Kalecki as profit per unit output + wages per unit output in the dumping industry.  $m$  is assumed to be fixed. For the purposes of the numerical example it is assumed that  $m = \$1$ . Thus the industry's contribution to gdp is \$100. Suppose the industry sells 20 more units of value added to foreigners at a price of 50 cents. The average price  $m$  is considered to be fixed so that the industry's contribution to gdp is now \$120. This implies that the domestic price must have risen to \$1.1. Losses on dumping are  $20(m - n) = \$10$  and these are passed on to domestic purchasers of the product at higher prices. Now the change in the value of output of the dumping industry of \$20 must be equal to the change in the value of expenditure on the output of the dumping industry. The change in the value of expenditure is equal to the change in domestic expenditure plus the change in export expenditure. Domestic buyers have to pay a higher price for the product of the dumped industry. As Kalecki implicitly assumes that there is no substitution, they pay a higher price for the same quantity, so their spending rises on the dumped commodity by the amount of dumping losses,  $20(\$1 - \$0.5) = \$10$ . At the same time export expenditure rises by the increase in volume of exports (20) multiplied by the price (\$0.5). Thus total expenditure rises by the amount of the rise in output. The value of the wage bill in the dumping industry changes by the rise in units of value added (\$20) multiplied by the average value added price (\$1) and the average wage share  $\alpha$ . The value of profits changes by  $(1 - \alpha)\$20$ .

<sup>10</sup> Kalecki (or the translator) is incorrect. For secondary production to be generated  $S' > P'$ . If no secondary production is generated  $S' = P'$ . Kalecki (1931, p. 31) makes a similar slip when he argues "if the total reduction in consumption affects only domestic output, leaving import [sic] unchanged,  $P' = S'$ ." If imports are unchanged,  $P' = 0$ . Kalecki's equation  $K' = Nn$  follows.

<sup>11</sup> Again, there are similarities to Richard Kahn's work in Kalecki's use of the terminology of primary and secondary production. Kahn (1931) uses the terms primary and secondary employment.

<sup>12</sup> It is tempting to view Kalecki's early articles as bearing a similar relationship to his later writings as Kahn's multiplier article does to the *General Theory*. They were written about the same time, they involve a similar terminology, and both deal with multiplier processes in an open economy. Furthermore, they both capture a transitional period in the development of the ideas of Kalecki, and Keynes and his Cambridge colleagues. Both Kalecki and Kahn are searching for that not quite achieved inspirational simplification - a simple, elegant and more fully formed theory of effective demand.

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