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Distribution-led Growth through Methodological Lenses

by

Michalis Nikiforos*
Levy Economics Institute of Bard College

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* Contact: mnikifor@levy.org

Levy Economics Institute
P.O. Box 5000
Annandale-on-Hudson, NY 12504-5000
http://www.levyinstitute.org

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ABSTRACT

This paper presents a methodological discussion of two recent "endogeneity" critiques of the Kaleckian model and the concept of distribution-led growth. From a neo-Keynesian perspective, and following Kaldor (1955) and Robinson (1956), the model is criticized because it treats distribution as quasi-exogenous, while in Skott (2016) distribution is viewed as endogenously determined by a series of (exogenous) institutional factors and social norms, and therefore one should focus on these instead of the functional distribution of income per se. The paper discusses how abstraction is used in science and economics, and employs the criteria proposed by Lawson (1989) for what constitutes an appropriate abstraction. Based on this discussion, it concludes that the criticisms are not valid, although the issues raised by Skott provide some interesting directions for future work within the Kaleckian framework.

Keywords: Kaleckian Model; Distribution-led Growth; Abstraction

JEL Classifications: B22, B41, B50, E11, E12

1 INTRODUCTION

A standard workhorse of modern non-mainstream macroeconomics is what has come to be known as the Structuralist or the Kaleckian of growth and distribution. A central aspect of the model is the concept of distribution-led growth. Because of its particular closure—based on a Keynesian/Kaleckian emphasis on aggregate demand and on an (quasi-)exogenous distribution determined by institutions and social norms—an exogenous change in distribution does not have a certain *a priori* effect on income. An increase in the income share of capitalists may lead to higher or lower capacity utilization and growth. In the former case the economy is said to be profit led and in the latter wage led.

The model has been criticized on several fronts; some of the most common of these critiques are related to its pricing theory, the assumption that saving reacts less than investment to changes in utilization, and its inability to bring the actual capacity utilization to the level of the desired capacity even in the long run.[1] A relatively more recent front of criticism is related to the *endogeneity* of the distributional shares. If the shares are endogenous, it does not make much sense to talk about distribution-led growth, which presupposes an exogenous distribution. There are two variants of the critique. The first one comes from a neo-Keynesian point of view (Skott and Zipperer 2012; Ryoo 2015; Skott 2016). According to this variant—and along the lines of Robinson (1956) and Kaldor (1955)—distribution of income is *purely endogenous* and adjusts to bring the actual growth rate towards the natural rate of growth. In other words, this critique originates from a different closure of the macro system. The growth rate, which is endogenous in the Kaleckian model, is pinned down by the exogenous natural rate and distribution becomes endogenous to guarantee the adjustment.

[1] For critiques along these lines sees Steedman (1992), Skott (2010, 2012), Committeri (1986), Kurz (1986), Auerbach and Skott (1988), Duménil and Lévy (1999), and Shaikh (2009).

The second variant of the endogeneity critique is put forward in a recent paper by Skott (2016). In this paper, *contra-Kaldor(1955)/Robinson*(1956), Skott accepts the classical/Kaleckian theory of distribution but argues that the overall distribution is determined by several institutional factors and social norms, whose change taken individually might have differential effects on growth through different channels. In other words the effects are "shock dependent." Therefore, Skott concludes, it is "unhelpful" to talk about distribution-led growth and we should examine—theoretically and empirically—the effects of each of these factors and norms individually. If one thinks more carefully, Skott's argument is that the level of abstraction of the Kaleckian model (where distribution as a whole is taken as exogenous) is not appropriate and therefore we should move to a lower level of abstraction. At this lower level of abstraction, overall distribution is endogenous.

This kind of critique has an obvious methodological aspect: How can one asses a model based on the level of abstraction? Can we conclude that a model is "unhelpful" or it has fundamental weaknesses if its results are modified as we move towards less abstraction? The present paper takes up these issues.

I start with a generic discussion of the abstract method in economics and explain why abstraction is necessary for an economist in their effort to make sense of the complex economic and social reality. An abstract model serves as an entry point for this effort and in turn each level of abstraction serves as an entry point for the next, less abstract level. A corollary of this discussion is that as we move towards less abstraction several complications will arise. The reason for abstraction in the first place is to (temporarily) ignore these complications but these complications do not invalidate the more abstract model or make it any less helpful or valid. The appropriate level of abstraction has to be chosen within the context of what question or questions one wants to answer. The work of an economist employed by a regional government will generally be less abstract (or use different kinds of of abstraction) than the work of an economist who analyzes

macroeconomic trends.

Does this mean that anything goes? Can any kind of abstraction be justified as appropriate depending on the context of the questions we want to answer? The answer is negative. Lawson (1989) provides two criteria that demarcate appropriate from inappropriate abstraction. First, the abstraction has to be concerned with the *real*. A model or theory needs to suggest mechanisms that are real (albeit abstract and thus by definition idealized) and are themselves subject to empirical scrutiny. Second, the abstraction has to be concerned with the *essential* and isolate the most important elements of reality.

The discussion of abstraction leads to one more conclusion: closure—the direction of causality within a model—is a special form of abstraction. In reality all macroeconomic variables are endogenous and therefore closure abstracts from the endogeneity of some of them. This conclusion is important because we can evaluate if a closure is appropriate or inappropriate based on the aforementioned methodological criteria.

The discussion of the abstract method allows us to go back to the Kaleckian model. First, I explain that there is nothing specifically "Kaleckian" in the specification of the model. The assumptions employed are relatively standard within the classical and post-Keynesian economic traditions. The main innovation of the model is the hybrid closure that it employs, an eclectic combination of a demand-led economy (investment has an autonomous status and does not just follow from saving) and an emphasis on the role of institutions and social norms as the main determinants of distribution of income.

This kind of closure is the only one among the main alternative closures (classical, neoclassical, and neo-Keynesian) that can capture the three *essential* features of a *real* capitalist economy: i) relevance of aggregate demand; ii) elastic supply of labor; (iii) and distribution of income

primarily determined by institutions and social norms. If one accepts these features as essential, and based on the aforementioned methodological criteria for abstraction, the Kaleckian closure emerges as a more appropriate and general closure compared to the classical, neoclassical, and neo-Keynesian ones. This answers the first of the two endogeneity critiques.

Finally, I turn to the "shock-dependent effects" critique. The main conclusion of the methodological discussion was that one cannot criticize a model just by the complications that arise at a less abstract level, except if the abstract model fails the criteria for appropriate abstraction. The Kaleckian model does not fail these two criteria. Therefore, I conclude that the second "endogeneity critique" is also not valid, although it provides insights for future work within the Kaleckian framework.

The paper proceeds as follows. Section 2 discusses the concepts of abstraction and closure. Section 2.1 examines the use of abstraction as an indispensable methodological tool of the economist; section 2.2 explains Lawson's two methodological criteria for what constitutes an appropriate abstraction and section 2.3 argues that closure is also a special kind of abstraction. Section 3 discusses the Kaleckian model and section 4 shows why the model should be understood as a hybrid closure of classical and Keynesian origins. Section 5 argues that the Kaleckian closure can capture the basic and essential characteristics of the capitalist economy better than the closures proposed by the classical, the neoclassical, and the neo-Keynesian models. In section 6, we discuss the "shock-dependent effects" critique. Section 7 concludes.

2 ABSTRACTION AND CLOSURE

2.1 Abstraction

The economic phenomena are the result of complex and many times countervailing causal forces. An economic analysis that would try to understand, make sense of, and explain *all* these phenomena and the causal forces behind them *at once* would surely end up in a dead end. As Joan Robinson (1962, 33) famously put it: "A model which took account of all the variegation of reality would be of no more use than a map at the scale of one to one." *Abstraction* is thus an indispensable methodological tool for the economic theorist and practitioner.

In other words, the goal is always to understand the concrete, the whole, the real. But the only way to do that is to abstract from this concrete and start from certain aspects—or moments—of it. When these moments are established one can proceed by means of synthesis towards the real. This "is obviously the scientifically correct method," proclaims Marx when he discusses the method of political economy in the introduction of the *Grundrisse* (1993, 101). He continues:

> The concrete is concrete because it is the concentration of many determinations, hence unity of the diverse. It appears in the process of thinking, therefore, *as a process of concentration, as a result, not as a point of departure,* even though it is the point of departure in reality and hence also the point of departure for observation [*Anschauung*] and conception. (emphasis added)

The abstract is thus the necessary point of departure in the process of thinking about a real economic problem.

A few observations can be made here. First, reality has many different "dimensions," therefore so does abstraction. As a result, comparing the "level of abstraction" of two different models or theories is not always straightforward because it is possible that the abstraction level is the same in

one or more of these dimensions but different in others. For example, the classical and the Kaleckian models can never have the exact same level of abstraction as the neoclassical one because in the latter the fundamental social units are the households and the firms, while in the former they are the classes. Therefore, even if we ensure the same level of abstraction along one dimension (say by building models with the same variables), the neoclassical model will always differ because it abstracts from the class as an essential element of the capitalist economy. In other cases the comparisons of the level or degree of abstraction are easier. An analysis of a certain industry of an economy at a double-digit level is at the same level of abstraction as an analysis of another industry at the same classification level (both abstract from the lower decomposition).[2]

Second, each level of abstraction—at least along each dimension—serves as a prelude for the analysis at a lower level of abstraction. An abstract model provides the logical framework for dealing with issues at the lower level of abstraction. To use the previous example, the analysis of industries at the two-digit level serves as an entry point for the analysis of the industries at a three-digit or lower levels of classification. Or, a model that treats labor as homogeneous provides the analytical and logical framework for examining the implications of having different kinds of labor: skilled and unskilled, productive and unproductive, etc. This is the process of concentration that Marx talks about in the *Grundrisse*. Starting from the abstract, one can move—level by level—towards the concrete.

Third, as an analysis or a model becomes less abstract, several complications might arise. In fact, the reason for using the abstract method is to avoid—or at least postpone—dealing with these complications. For example, in the Computable General Equilibrium (CGE) models it is common

[2]Mäki (1992, 1994) defines "horizontal" and "vertical" isolation. "In *horizontal* isolation the level of abstraction remains unchanged, while in *vertical* isolation the level of abstraction changes" (Mäki 1992, 322–23). In the example above, the vertical isolation refers to the level of the classification system (double-digit, triple-digit, etc.) while the horizontal isolation refers to the specific industry that we "isolate" and examine. This two-dimensional classification of abstraction/isolation is appealing and useful in many cases, but there are other cases—like the first example in this paragraph—where it is not enough.

practice to start the analysis with a macro model and then introduce sectors. The results of the macro analysis are obviously modified when the sectoral analysis is taken into account. However, the complications that arise at the lower levels of abstraction do not make the abstract model *any more or less useful*.

This point is also important for the discussion below and a more-detailed example is in order here. Think of the simple Keynesian multiplier model:

Income:	$Y = C + I + G + X - M$
Consumption:	$C = \bar{C} + c \cdot Y_d$
Investment:	$I = \bar{I}$
Government Expenditure:	$G = \bar{G} - g \cdot Y$
Exports:	$X = \bar{X}$
Imports:	$M = \bar{M} - m \cdot Y$
Disposable Income:	$Y_d = Y - T$
Taxes:	$T = t * Y$

The equilibrium level of income is $Y^* = \mu \cdot [\bar{C} + \bar{I} + \bar{G} + \bar{X} - \bar{M}]$, where the multiplier is $\mu = 1/[1 - c(1-t) + g + m]$. Based on this very simple model at this very high level of abstraction one can talk about several interesting things, like the fiscal expenditure multiplier ($\partial Y^* / \partial \bar{G}$), the effects of austerity, etc.

However, one could argue that there are many different kinds of government expenditure that can have a differential impact on the several components of demand. For example, public investment in R&D can arguably have a secondary positive spillover effect on investment that government consumption does not have. On the other hand, some other kinds of government expenditure might even have a negative impact through distortion of incentives, increasing bureaucracy, etc. At this lower level of abstraction, let's assume that we decompose overall autonomous government expenditure into n kinds, so that $\bar{G} = G(\bar{g}_1, \bar{g}_2 ... \bar{g}_n)$. These different kinds of government

expenditure can have, as I explained, a differential impact on investment. More formally, $I = I(\bar{g}_1, \bar{g}_2 ... \bar{g}_n)$ and $\partial I / \partial \bar{g}_i \gtreqless 0$ is different for the various is.

The overall effect of changes in each of the components of government expenditure on income is different: $\partial Y^* / \partial \bar{g}_i = \mu[\partial I / \partial \bar{g}_i + \partial G / \partial \bar{g}_i]$ depends on the specific g_i. In some cases the secondary effect will reinforce the original expenditure effect, but in other cases it will move in the opposite direction. In extreme cases, if the secondary negative impact on investment is large, the overall effect of increasing certain kinds of government expenditure might even be negative. Therefore, at this lower level of abstraction it does not make much sense to talk about a fiscal multiplier. We should instead focus on the effect of changes in R&D, public consumption, subsidies, etc. Note that by the same logic one can always go one step further and ask, for example, what kind of R&D or what kinds of subsidies.[3]

These issues are indeed valid. Different kinds of government expenditure might have very different impacts on economic activity. At the same time these issues do not constitute a weakness in the concept of the fiscal multiplier or make it any more or less useful. Quite the opposite; the concept of fiscal multiplier remains useful both at a theoretical and empirical level at a certain level of abstraction and can be used as an entry point for less abstract models.

In another example, Keynes makes a similar point in a reply to a letter from R.G. Hawtrey, who criticizes his theory of the marginal efficiency of capital (see Keynes 1973a, 617–33). Hawtrey argues that the concept of the marginal efficiency of capital in chapter 11 of *The General Theory* (1936) does not apply to investment in new capital instruments because of discontinuities. It only applies in investment as a result of the creation of new enterprises or the extension of existing ones. Therefore, according to Hawtrey, Keynes should distinguish between investment in instruments and investment for the creation of new enterprises. Keynes (1973a, 629: emphasis

[3]One could make a similar point with other components of demand. For example, an increase in imports of capital goods is sometimes a necessary precondition for development. This is not the case for consumption goods.

added) replied as follows:

> A good deal of your criticism is based upon alleged ambiguity as to whether I mean marginal efficiency to apply to instruments or to enterprises. My intention is to apply to both indifferently. I do not see that, *at the level of abstraction* in which I am writing, any different treatment is required. In a realistic study it makes, of course, a difference whether one is considering what factors lead to the increase of industries and what lead to the establishment of new ones. But the sort of considerations which are relevant to this issue are a hundred miles away from the sort of things I am discussing.[4]

A corollary of this discussion is that *a priori* there is not a correct level of abstraction. The appropriate level of abstraction depends on the context and the issue at hand. A theoretical economist, an economist at a bank, one working at an international organization, or someone at a regional office will obviously work with models or analyses at different levels of abstraction. In fact, each one of them will be operating at different levels of abstraction in their effort to understand the concrete—or that part of the concrete that they are interested in. To use the above example, a theoretical economist might be satisfied with the abstract multiplier model, which treats government expenditure as homogeneous, but this is certainly not the case for an economist at the ministry of finance who works on the budget or has to design a development plan for their economy. Or, to use the Hawtrey-Keynes example, the distinction between the two kinds of investment did not matter for the argumentation of *The General Theory*, but—as Keynes admits—is relevant at lower levels of abstraction.

2.2 Appropriate (and Inappropriate) Abstraction

The fact that *a priori* there is not an appropriate and correct level of abstraction does not make any kind of abstraction justifiable and appropriate. The question then is what are the criteria for

[4]This excerpt and the one quoted in section 2.3 (below) were found in chapter 10 of O'Donnell (1989), which discusses the epistemological approach of Keynes.

appropriate (and thereof inappropriate) abstraction. An answer to this is provided by Lawson (1989) in a paper that discusses the methodological approach of Kaldor.[5] Lawson, who starts from a critical realist point of view, suggests that the goal of economic theory is to explain reality, which exists independently of human consciousness but can be identified by it—"true theories of real entities can be obtained" (61). Toward that direction, abstraction is necessary for the reasons explained above. Lawson then proposes two criteria that make an abstraction appropriate:

(i) the abstraction has to be concerned with the *real*, and

(ii) the abstraction has to be concerned with the *essential*.

According to the first criterion, a model or theory needs to suggest mechanisms that are real (albeit abstract and thus by definition idealized). In other words, for a theory to be good it is not enough to be able to explain reality (or the "stylized facts" of reality); it is also necessary to posit mechanisms that are real and are themselves subject to empirical scrutiny. This immediately comes in contrast with the *as if* methodological approach of neoclassical economists, as exemplified by the famous aphorism of Milton Friedman that "truly important and significant hypotheses will be found to have 'assumptions' that are wildly inaccurate descriptive representations of reality, and, in general, the more significant the theory, the more unrealistic the assumptions (in this sense)" (Friedman 1953, 14). For example, and to foreshadow the discussion of investment in the next section, it is common in many non-neoclassical macromodels to assume that investment is a positive function of profitability. This specification obviously contains a great deal of abstraction since investment is in reality a function of many different factors. At the same time though, the specification is real because of our belief and empirical evidence that profitability is indeed one of the major factors that is taken into account by an entrepreneur when they decide about investment.

[5] Kaldor, in some of his most significant writings, talks about "appropriate" abstraction (1961, 177), "abstract and unreal constructions" (1972, 1239), "the wrong kind of abstraction" (1975, 347), etc.

According to the second criterion, abstraction has to "isolate a significant element of the world." In most of his discussion, Lawson contrasts the essential to the *merely more general*. Although generality should be a goal of a model or a theory, *mere* generality is not enough because in many cases it is achieved by abstracting from the essential. As a result, what "abstraction gains in breadth it more than loses, as it were, in depth—in relevance to the particular situations which are the focus of interest" (Dobb 1937, 40). For example saying that labor and some instruments (capital) are necessary for production is a general and valid statement but at the same time very shallow and unhelpful if we want to understand capitalism (or previous modes of production). For that purpose one needs to put labor and capital into historical context.[6]

The problem with a theory that is built on general yet shallow assumption is that it then needs strong additional *ad hoc* propositions in order to get an explanatory bite. Lawson refers to Kaldor's criticism of neoclassical general equilibrium theory (Kaldor 1972). Kaldor argues that the axioms of the theory are so general and devoid of content that they have little explanatory power. Explanation is then contingent upon additional assumptions, like the specific properties of the production sets, the utility functions, etc.[7]

Lawson uses the essential mostly in opposition to the *mere* general, but essential can be also understood as a synonym for important or significant. In other words, an abstraction needs to isolate the most essential—the most important—aspects of reality. A theory that gives center stage to the unimportant is bound to be problematic. To go back to Kaldor's criticism of general

[6]Not surprisingly, these observations go back to classical political economy. For example, Marx (1993, 95–98). makes a similar point in the introduction of the *Grundrisse* when he talks about "Distribution and Production." A few pages later he focuses on labor and writes: "This example of labour shows strikingly how even the most abstract categories, despite their validity—precisely because of their abstractness—for all epochs, are nevertheless, in the specific character of this abstraction, themselves likewise a product of historic relations, and possess their full validity only for and within these relations" (105).

[7]The Sonnenschein–Mantel–Debreu theorem (Sonnenschein 1972, 1973; Mantel 1974; Debreu 1974) confirmed Kaldor's criticism shortly after. Although, the general equilibrium research program has faded since, the critique remains valid—for the same reasons—for modern "macroeconomic" incarnations of the theory like the Dynamic Stochastic General Equilibrium (DSGE) models, which dominate macro-policy analysis.

equilibrium theory:

> The difficulty with a new start is to pinpoint the critical area where economic theory went astray. In my own view, it happened when the theory of value took over the centre of the stage—which meant focusing attention on the *allocative* functions of markets to the exclusion of their *creative* functions—as an instrument for transmitting impulses to economic change (Kaldor 1972, 1240: emphasis in the orginal).

Or three years later:

> The first of these [things to object to] is that economic theory regards the essence of economic activities as an allocation problem—"the allocation of scarce resources among alternative uses"—to use Lord Robbins' famous definition of the subject matter of economics. This means that attention is focused on what are subsidiary aspects, rather than the major aspects, of the forces in operation (Kaldor 1975, 348: emphasis in the orginal).

Kaldor does not claim that markets do not have allocative functions, but that these allocative functions are secondary compared to the creative ones; therefore one of the reasons for the "irrelevance of equilibrium economics" is that they completely abstract from the essential and important (the creative functions) and prioritize the unimportant (the allocative ones).

2.3 Closure as Abstraction

A special kind of abstraction is the so-called "closure," the direction of causality among the variables of a model.[8] In reality every variable—or almost every variable—is endogenous. However, theorizing necessitates abstracting from the endogeneity of some of these variables. As Taylor and Lysy (1979) have demonstrated, the closure of a model or a theory is crucial for the determination of its outcomes. When it comes to macroeconomics and the theory of growth and

[8] In macroeconomics, an early treatment of the concept of closure (without calling it that) is provided by Kaldor (1955, 94) and Sen (1963). The term was coined by Taylor and Lysy (1979). More recent discussions can be found in Marglin (1984), Foley and Michl (1999), and Taylor (2004).

distribution, the choice of closure is a central distinctive characteristic of the approach the various economic traditions take on these issues.

If closure is understood as a special kind of abstraction it can then be evaluated based on the methodological criteria laid out in the previous section—it has to be real and focus on the essential. A difference here is that with regard to closure, the real and essential are more closely correlated with the general. The example that immediately comes to mind is Keynes's *General Theory*. The choice of the word "general" in the title is not accidental. By using it Keynes wants to stress his opposition to the assumption of full employment and Say's law, which Keynes considers as a special (as opposed to general) case. To put it differently, what Keynes called "classical" economics denies the possibility of unemployment, which however in reality is the general and thus more important/essential case. Similarly "classical economists" abstract from all these factors that make the investment decision independent from saving (which again is the real and essential feature of a modern capitalist economy). The rest of the neoclassical edifice (e.g., the theory of interest and the theory of money) becomes problematic because it is built on these two special abstractions, on this specific choice of closure.[9]

In a similar way, one can criticize the neoclassical, but also the "neo-Keynesian" theory of distribution, because they abstract from the institutional factors and focus only on the economic determinants of distribution of income. Economic experience and an assessment of the data show that economic determinants of distribution are indeed real, but at the same time are—to use Kaldor's word—subsidiary compared to the institutional factors.Therefore, a theory that focuses on the latter and completely abstracts from the former fails the second criterion laid out above

[9]In an essay on the theory of the interest rate, Keynes (1973b, 106–107: emphasis added) writes: "The orthodox theory, on the other hand, is concerned with a simplified world where there is *always full employment*, and where doubt and fluctuations of confidence are ruled out, so that there is no occasion to hold inactive balances, and prices must be constantly at a level which, merely to satisfy the transactions motive and without leaving any surplus to be absorbed by the precautionary and speculative motives, causes the whole stock of money to be worth a rate of interest equal to the marginal efficiency of capital which corresponds to full employment. The orthodox theory is, for example, particularly applicable to the stationary state."

because it ignores the essential and the important. I will come back to this in section 4, below.

3 THE KALECKIAN MODEL

This section presents a highly stylized version of the model, which will serve as a basis for the discussion that follows. The model is built on two main pillars: demand and distribution. Starting from the first one, the demand side of the system is defined by the investment behavior of the firms and the consumption/saving behavior of the—capitalist and workers—households.

Investment is assumed to be a function of profitability and capacity utilization:

$$g^i = g^i(r,u) \tag{1}$$

where g^i is investment normalized for the capital stock, r is the profit rate, and u is the rate of capacity utilization with $g^i_r > 0$ and $g^i_u > 0$ (the subscript denotes the partial derivative for this variable). Since the profit rate is the product of the profit share (π) and capacity utilization, $r = \pi u$, another generic form of the investment function is:

$$g^i = g^i(\pi,u) \tag{1a}$$

where $g^i_\pi > 0$. For the same reason—because $r = \pi u$— the second specification also covers the case:

$$g^i = g^i(r) \tag{1b}$$

Different authors have used some variation of the above function. For example, Rowthorn (1981), Taylor (1983), and Dutt (1984) use the first; Marglin and Bhaduri (1990) start from the third (1b)

and from there move to the second[10]; Taylor (1991: ch. 2) treats the first and the second as equivalent[11]; Taylor (2004: ch. 4) starts from the first and moves to second.

Finally, the specification usually includes an autonomous term (say γ) that expresses the autonomous component of investment, or sometimes expectations and animal spirits (if someone is willing to put animal spirits in algebraic form); alternatively γ can be thought as an error term that expresses all the other factors that affect investment but are not explicitly included in the specification of the investment function. Hence, to all the above specifications one could add the variable γ as an argument in the function:

$$g^i = g^i(\cdot, \gamma) \tag{1c}$$

Most of the time γ is treated as a constant and has a passive role in the analysis.[12] In the discussion below γ will play a more central role.

On the other hand, total saving (normalized for the capital stock) is:

$$g^s = g^s(\pi, u) \tag{2}$$

where g^s_u is positive because higher income leads—*ceteris paribus*—to higher savings and g^s_π is also positive since capitalists' saving rate is higher than workers'.

The two equations for investment and saving define the demand side of the economy. At equilibrium, investment is equal to saving: $g^i = g^s$. Based on this identiy we can define a demand

[10] Their specification is $g^i = g^i[r(\pi, u)]$. In the twin paper (Bhaduri and Marglin 1990) they begin with the second specification. For that reason the specification in equation (1a) is usually associated with these two authors. However, for the reasons explained here this is not accurate.

[11] He specifies investment demand as $g^i = g^i(r, u) = g^i(\pi, u)$.

[12] This is not always the case. If γ is taken to denote the expectations and the animal spirits it can be used to introduce Harrodian dynamics, which allow for the examination of cyclical dynamics or path dependence (e.g., Dutt 1997; Nikiforos 2015).

function as:

$$u = D(\pi) \tag{3}$$

By taking the total differentials of the basic macroeconomic identity, we get $dg^i = dg^s \Leftrightarrow g^i_u du + g^i_\pi \pi = g^s_u du + g^s_\pi d\pi$. Therefore,

$$du/d\pi = D'(\pi) = \frac{g^i_\pi - g^s_\pi}{g^s_u - g^i_u} \tag{4}$$

Given, the Keynesian stability condition ($g^s_u - g^i_u > 0$), the denominator of the fraction is positive, so the effect of a change in distribution depends on the numerator. An increase in the profit share leads to an increase in the utilization rate as long as the propensity to invest out of profits is higher than the propensity to save ($g^i_\pi - g^s_\pi > 0$). In this case demand is said to be profit led ($du \Big/ d\pi > 0$). In the opposite case (when $g^i_\pi - g^s_\pi < 0$), demand is wage led ($du \Big/ d\pi < 0$).

Notice, that these results are established without any specifically *Kaleckian* assumption. On the investment side one could motivate such a specification based on the Marx's discussion of accumulation in *Capital* or that of Keynes in *The General Theory*. Major postwar figures like Nicholas Kaldor (1961) or Joan Robinson (1962: for example in the famous "banana diagram") have also used it. On the saving side, the specification is also quite generic and can accommodate more specific forms like the so-called "Cambridge equation" (the other half of the "banana diagram") or the saving functions used by Kaldor (1955) and Pasinetti (1962).

Turning to the second pillar, the Kaleckian model follows classical political economy in the role of institutional factors and social norms for the determination of the real wage and distribution.[13] Such factors include the class struggle, the power of the unions, the degree of competition in the markets, fiscal and monetary policy, social insurance and pension policies, etc. *At a certain level*

[13] In the present paper we will not deal with technical change, and thus real wage and distribution (the wage and the profit shares) express the same thing.

of abstraction they are considered to be outside the system under examination and thus the real wage and distribution are treated as "exogenous" constants. Therefore, in the most stylized version of the model:

$$\pi = \bar{\pi} \tag{5}$$

where $\bar{\pi}$ is a constant. Thus, the exogeneity of distribution is not a sign of neglect to the importance of institutions. Quite the opposite. It is because of the recognition of the importance of institutions in the determination of distribution that distribution is treated as exogenous.

One more related comment is in order here. First, it is straightforward to model endogenous distribution, which reacts to changes in aggregate demand; in fact endogenous distribution is the rule rather than the exception in the related literature. There are several possibilities. A common approach is the so-called profit-squeeze hypothesis: as utilization and employment increase, the bargaining power of the workers increase, and the wage share increases (the profits are squeezed). This idea goes back to chapter 25 of the Marx's *Capital* (1867) and was formalized by Goodwin (1967). Kalecki (1971a) makes a similar point. Within the broader Kaleckian literature this point has been emphasized by Bowles and Boyer (1988), Gordon (1995), Barbosa-Filho and Taylor (2006), and Taylor (2004).

Another possibility is that due to overhead labor effects and if the bargaining position of workers is weak—and they cannot claim a higher share of income as utilization increases—the share of profits will increase as utilization increases. Kalecki (1971b: ch.6) famously distinguished between *salaries* and *wages*—the former "because of their 'overhead' character are likely to fall less during the depression and rise less during the boom." A third possibility is that the productivity-gain effect (due to overhead labor) dominates at low levels of utilization while the profit-squeeze effect takes over at higher levels. In this case the distribution has a hyperbolic behavior in the $< u, \pi >$ space. The profit share increases as utilization increases at low levels of u

and then increases at higher levels of u.[14]

Mathematically, this kind of endogeneity can be captured as:

$$\pi = \Pi(u) = \pi_0 + \pi(u) \tag{5a}$$

where π_0 is an exogenous constant—a shift variable. In the case of the profit squeeze $\Pi'(u) = \pi'(u) > 0$, while when there are productivity gains $\Pi'(u) = \pi'(u) < 0$. A non-linear function—with $\pi'(u) < 0$ for low levels of u and $\pi'(u) > 0$ at higher levels of u—can capture the third possibility. Obviously, equation (5) is a special case of (5a), where $\bar{\pi} = \pi_0$ and $\pi(u) = 0$.

The equilibrium levels of utilization and distribution (u^*, π^*) are simultaneously/endogenously determined as a result of the interaction of the demand and distribution functions. Mathematically u^* and π^* are the solutions of the system defined by equations (3) and (5a).

Despite the endogeneity of distribution, the concept of distribution-led growth remains well defined because of the exogenous term π_0, which now captures the aforementioned exogenous institutional characteristics and social norms of the economy. In other words, the economy is wage or profit led based on the derivative $du/d\pi_0$, the effect of an exogenous shift of distribution (a change in π_0) on the level of utilization.[15]

[14] Nikiforos and Foley (2012) find empirical evidence for such a behavior of distribution and discuss its implications.

[15] The endogenous determination of distribution also raises some other interesting issues. First, the institutional characteristics of an economy do not affect only the shift parameter (π_0) but also the the function $\pi(u)$. For example, the weakening of the position of workers over the last decades has manifested itself through an upward trend of the profit share over time (an upward shift of the distribution curve) but also through the inability of the workers to capture the gains of higher utilization along the business cycle (the upward sloping part of the distribution curve has vanished). Second, it affects the stability or instability of the system. For example a profit squeeze tends to stabilize a profit-led economy (a discussion of these two issues is provided in Nikiforos [2015]). Finally, a non-linear distribution curve creates the possibility of multiple equilibria. In this case Nikiforos and Foley (2012) suggest a restatement of the definition of wage- and profit-led growth: An economy is wage led (profit led) when a distributive change against the wage share leads to lower (higher) *equilibrium* capacity utilization. This definition coincides with the usual definition (with reference only to the slope of the demand curve) when the distributive schedule is linear.

Therefore, it is not the endogeneity of distribution *per se* that invalidates the concept of distribution-led growth. Distribution-led growth cannot be defined only in the case of a *purely endogenous* distribution, when distribution is determined solely by economic forces. In this case it obviously does not make sense to talk about the effect of an exogenous change of distribution, but it is exactly this approach that disconnects distribution from its social and institutional background. We discuss this in more detail in the next section.

4 THE KALECKIAN MODEL AS A HYBRID CLOSURE

The discussion in the previous section demonstrated that the Kaleckian model and the derivation of the concepts of distribution-led growth do not involve any particularly Kaleckian assumptions. Taken separately, the model combines a standard treatment of the demand side with an also-standard classical treatment of distribution. Its main innovation lies in the combination of these standard—but separate—approaches on demand and distribution. Hence, the model can be understood as a hybrid closure that combines: i) the Keynesian rejection of Say's law and thus the autonomous role of investment (and demand); and ii) the emphasis on the institutional aspects in the determination of distribution.

To understand this more clearly we can go through the different closures proposed by the three main schools of thought. In chronological order, classical political economists envisaged an exogenous real wage and distribution and Say's law (saving automatically creates an equal amount of investment).[16] The exogenous distribution of income and the also-exogenous saving propensities of the two classes, workers and capitalists, determine the overall saving and thus, through Say's law, investment and growth.

[16]The exogeneity of distribution is motivated either through the importance of the aforementioned institutional factors or though a Malthusian–type population equilibrium.

The principal differences of the neoclassical school are that it abstracts from class distinctions (the fundamental unit of analysis becomes the household and the firm) and it makes the additional assumption of full employment of labor. The growth rate of output is pinned down by the exogenous growth rate of the labor force (the natural growth rate) and distribution becomes endogenous in order to clear the labor market and satisfy the assumption of full employment.

Keynes's main innovation in *The General Theory* in the context of this discussion is the rejection of Say's law. The decision to invest is different from the decision to save and thus investment acquires an autonomous status. The equality of investment and saving is achieved through the endogenous adjustment of output and the growth rate. Keynes assumes that that the real wage is equal to the marginal product of labor (the profit maximization condition, which he calls the "first classical postulate"). Thus, distribution and employment are endogenously determined given the level of output.

The distributional story is secondary to Keynes's narrative. As Kaldor (1955, 94) writes: "Keynes [...] was never interested in the problem of distribution as such." It was up to the next generation of Keynesian economists to develop a theory of growth and distribution. The theory was developed in the 1950s, a time of robust economic growth and full employment and the Keynesian scholars made the uncharacteristically Keynesian assumption of full employment. At the same time, Say's law is rejected and investment maintains its autonomous status. More precisely investment maintains a quasi-autonomous status since investment is pinned down by the assumption of full employment and the growth rate of capital stock is equal to the exogenous natural growth rate. The exogenization of the growth rate is compensated for by the endogenization of the distribution: given the differential saving rate of the two classes the distribution adjusts to bring total savings in line with investment.[17] This is the distributional story put forward by Kaldor (1955) and Robinson

[17]The basic idea is that a change in the autonomous demand is accommodated through a change in the price level on top of a quasi-fixed nominal wage level. An increase in aunomous expenditure leads to an increase in the price level and thus a decrease in the real wage and an increase in the profit share.

(1956), which echoes the "forced saving" ideas of Schumpeter (1934), and Keynes in *The Treatise* (1930).

The point, which is relevant for our discussion, is that in the neoclassical model, but also in the economy of *The General Theory* and the neo-Keynesian model, distribution is *purely endogenous*, resulting solely from economic forces within the specified abstract system. Institutions and social norms, which set the tune in the classical world, play no role. As a result—and besides the rejection of the Kaleckian approach on behalf of the neoclassical economists—the Kaleckian model has received a lot of criticism on that ground from a "Kaldorian" or "Robinsonian" perspective. Since distribution is endogenous, the model in general and the concept of distribution-led growth in particular are fundamentally misguided and wrong.[18]

On the other hand, in the classical model, the concept of distribution-led growth becomes trivial. Say's law and the differential saving rates guarantee that an increase in the profit share will always increase the growth rate. The economy is always profit led.[19]

5 THE KALECKIAN MODEL AS THE MOST APPROPRIATE AND GENERAL CLOSURE

As it was discussed in section 2.3, closure is a special kind of abstraction. One can thus evaluate the different closures based on the criteria—put forward by Lawson (1989) and explained in section 2.2 of this text—of what constitutes an appropriate abstraction. An appropriate closure of a macro model and a theory of growth and distribution needs to capture the basic and essential features of the capitalist economy. There are three such important and essential features of

[18] Recent critiques along these lines include Skott and Zipperer (2012), Ryoo (2015), and Skott (2016).

[19] Some classical economists recognize that the Kaleckian results may hold, but only in the short run. The title of the paper by Duménil and Lévy (1999) is telling: "Being Keynesian in the Short Term and Classical in the Long Term."

capitalism:

(i) *Relevance of aggregate demand in the short and the long run.*

(ii) *Existence of unemployment and/or underemployment.*

(iii) *Distribution of income is primarily determined by institutions and social norms.*

It is beyond the scope of the present paper to provide a detailed treatment of these issues; something like that would be impossible in such a short space. Therefore, the discussion that follows provides some scattered evidence that points toward that direction, without the pretension that this evidence proves the validity of these points or settles the related issues. The point I want to make is that if someone accepts these three features as essential, then the Kaleckian closure naturally arises as the most appropriate.

Starting from the first of the above features, a strong indication for the importance of effective demand in growth is provided by the performance of most, if not all, advanced economies over the last decade. The economic analyses and forecasts made by the most prestigious institutions worldwide—the IMF, the CBO, the European Commision, etc.—have repeatedly failed mainly because the DSGE-type of models that they are using allow for demand to have an effect only in the short run (usually two or three years), after which the growth rate is determined completely from the supply side.[20] Ignoring demand was also a very basic reason for the failure of the majority of the profession to appreciate the signs of the upcoming crisis in the years before 2007. On the other hand, analyses and models where demand plays a significant role have performed

[20] One can have a look at the *World Economic Outlook* of the International Monetary Fund (IMF), the *Budget and Economic Outlook* of the Congressional Budget Office (CBO), the *Economic Forecasts* of the European Commission, and of course the forecasts of the various "troikas" for the peripheral European countries in crisis. Their inability to see the crisis of 2007 coming and their consistently overoptimistic projections post-crisis are, to a large extent, due to their ignoring aggregate demand.

much better.[21]

The experience of the last decade also shows that unemployment and underemployment are the *general* rule in a capitalist economy. In many European countries the unemployment rate is above or close to 10%, while in some of them (like Greece and Spain) it exceeds 20%. In the United States, where the situation is better in terms of the unemployment rate, eight years after the beginning of the recovery the employment-to-population ratio has increased by only 1.5%, while the U6 unemployment rate—which includes discouraged workers, other marginally attached workers, and those working part-time purely for economic reasons—is around 10%. To that, one could add the effectively infinitely elastic supply of unskilled labor by immigrants and refugees. For that reason, a theory that assumes full employment would be unable to capture the political economy of our times.

The elastic supply of labor has been the case even in periods with robust growth and employment, like in the first decades after World War II. At that time the advanced capitalist economies were able to compensate for the draining of the domestic reserves of labor—to a large extent due to the casualties of WWII but also due to the high income and employment growth rates—with immigration from abroad. The example of Germany at that time is telling. The famous German economic miracle (the so-called *Wirtschaftswunder*) of the time stumbled upon the labor shortages. As a result, Germany (and other Northern European economies) engineered a vast wave of immigration from Southern Europe and other countries of the Mediterranean basin. When the slowdown of the 1970s came, it led to the shutdown of the recruitment offices in Southern Europe and Northern Africa, harder attitudes toward foreign workers, and the (voluntary or not) repatriation of many of them.[22]

[21] The macro-econometric model of the Levy Institute, which is demand driven, is a case in point. For a discussion see Godley (1999), Zezza (2009) and Papadimitriou et al. (2014, 2015, 2016). A similar model for the Greek economy has also significantly overperformed the projections of the "troika."

[22] For a discussion, see Judt (2006: chapters X and XIV).

More generally, it is hard to see how the advanced capitalist economies are constrained—especially in the long run—by the supply of unskilled labor. Even if the developed economies experienced a second Golden Age of growth, in a world of more than seven billion people, the supply of workers willing to immigrate to the developed countries (or the developed part of their own countries) and work for the existing real wage would always be higher than demand.[23]

The assumption of full employment is dual to the assumption that the real wage and distribution are endogenous and adjust for the labor market to "clear." Therefore, a corollary of rejecting the assumption of full employment is that distribution is determined outside the economic sphere based on institutional factors and social norms. Periods with significant changes in distribution of income offer better insights into how it is determined. Data for the labor share are only available for a relative short time span.[24] We can utilize the data for the size distribution of income in the United States from the World Wealth and Income Database (Alvaredo et al. 2016) which are available for a longer period of time. Obviously, size and functional distribution are not the same. However, for the period and countries that we have data on both of these, there seems to be a very strong correlation. Second, the size distribution of income in many cases offers better insight about what we mean by the shares of income of workers and capitalists in an abstract model.[25] In the United States we observe that the biggest shift in the distribution of income took place in the late 1930s and in the first half of the 1940s (during WWII). The relatively egalitarian distribution that was determined by the end of that period persisted until the end of the 1970s. The period of change was a period with very robust aggregate demand and growth—in the decade 1934–44, the average growth rate was 10.25% with only one year of negative growth. Therefore, the

[23] It is also clear that in such a counter factual scenario, the reactions against immigrants and refugees would be significantly weaker.

[24] In the US, the Bureau of Labor Statistics provides consistent data for the period after 1947.

[25] For example, the wage income of the CEOs of large corporations is included in the wage bill, but from a political economy point of view should be counted in the income of the capitalists.

neo-Keynesian story does not offer a convincing explanation. Moreover, an explanation based on the adoption of more capital-intensive techniques, which lead to higher real wages, as the neoclassical theory would maintain is not convincing either. The change in income distribution of that period can only be understood in the context of the New Deal and the mobilization for the war and their effects on the institutional background and the social norms of the US economy.[26]

The other big change in the distribution of income has taken place during the last three-and-a-half decades, the so-called neoliberal era. Neoliberalism reversed the decrease in inequality that took place in the late 1930s and in the first half of the 1940s. Neoclassical economists have tried to explain this increase in inequality with differential technical change for high- and low-skilled labor (e.g., Acemoglu 2002). This explanation cannot account for international differences in income inequality since the same technology has been available in other countries with little or no change in distribution of income. It is also unable to account for the fact that the biggest part of the increase in income inequality has been due to an increase in the share of income for people at the very top of distribution and not of "skilled workers." A neo-Keynesian explanation is also not convincing because the neoliberal period is not a period with particularly buoyant aggregate demand; if anything it was the opposite. Again, the most convincing explanation is provided by the changes in the institutions and the social norms. All of the well-known studies of neoliberal capitalism—Harvey (2007), Kotz (2015), Duménil and Lévy (2004, 2011)—have emphasized the importance of institutional change. As a matter of fact, Duménil and Lévy suggest that the primary objective of the neoliberal order was precisely the (re)concentration of income in favor of the very rich.[27]

[26] A similar story can account for the changes in the distribution of income in Europe during the first decades after the war.

[27] For example, Duménil and Lévy (2011, 8) write: "the overall dynamics of capitalism under neoliberalism, both nationally and internationally, were determined by new class objectives that worked to the benefit of the highest income brackets, capitalist owners, and the upper fractions of management. The greater concentration of income in favor of a privileged minority was a crucial achievement of the new social order."

This kind of interpretation of the dynamics of income distribution are not confined to economists within the classical or Kaleckian tradition. Piketty and Saez (2003, 34: emphasis added), in the paper that commenced their now-famous research project, write:

> We think that this pattern of evolution of inequality [during the war and the early postwar period] is additional indirect evidence that *nonmarket mechanisms* such as labor market institutions and social norms regarding inequality may play a role in the setting of compensation at the top. The Great Depression and World War II have without doubt had a profound effect on labor market institutions and more generally on social norms regarding inequality [...]. Similarly, the huge increase in top wage shares since the 1970s cannot be the sole consequence of technical change.

If one accepts these three points as important and essential features of capitalism, then the Kaleckian model clearly qualifies as the *most appropriate* and *general* closure that can capture all of them. On the other end, the neoclassical closure does not satisfy any of the three features. The classical model is satisfactory in its treatment of the labor markets and distribution but ignores aggregate demand, while the neo-Keynesian closure rejects Say's law but falls short in the theory of distribution because of its assumption of full employment.

With the above, I do not mean to say that models with a non-Kaleckian closure are necessarily inappropriate or wrong. Models are tools that allow us to approach actual economic problems and models with different closures allow us to approach a problem from different perspectives if they are treated as such. For example, Pasinetti (1962, 279: emphasis added) writes about the neo-Keynesian approach to distribution:

> Whether we are or whether we are not prepared to accept the model in this behavioural sense, there are important practical implications which are valid in any case. I should look, therefore, at the previous analysis simply and more generally as a logical framework to answer interesting questions about what ought to happen if full employment is to be kept over time, more than as a behavioural theory expressing what actually happens.

If seen from this point of view, the neo-Keynesian closure does not come into conflict with the Kaleckian one, but can allow for the examination of the same issues from a different perspective. Moreover, under *certain* circumstances a model that employs a different closure can provide better insights for the examination of a *specific* economic problem. However, this does not invalidate the Kaleckian closure as the *general* one.

6 ANOTHER CRITIQUE: "SHOCK-DEPENDENT EFFECTS"

6.1 The Critique

In a recent paper, Skott (2016: section 4) puts forward another critique. The main idea is the following: income distribution is determined by several institutional factors and social norms. Within the model, the effect of a change in these factors and norms is captured through the profitability argument in the investment and saving functions. However, Skott argues, these changes may (or may not) have a secondary effect on the investment decision of the firms, outside of the profitability channel. For example, an increase in the power of the labor unions will decrease profitability but may also separately dampen the "animal spirits" of the entrepreneurs. On the other hand, if the decrease in profitability comes from higher competition and enforcement of antitrust policies, this secondary effect might be negligible or even positive for investment. Therefore, the effect of a change in distribution will be "shock dependent," meaning it will crucially depend on the factor or the norm that has changed.

Moreover, in some cases the secondary effect might be so strong that it will dominate the overall result and thus the change in growth might be in the opposite direction from that predicted by the simple model that abstracts from the secondary effects. This, according to Skott, is an important "*weakness*" of the Kaleckian model, which makes the concept of distribution-led growth

"*unhelpful*." One should instead focus one "shock-specific-led growth." In our example, growth might be labor-union-power-increase led (or labor-union-power-decrease led) and competition-increase led (or competition-decrease led).

More formally, assume that $\mathbf{x} = \{x_1,\ x_2, ..., x_n\}$ is the vector of n different institutional factors that determine distribution, stated in such a way that an increase in x_j for $j = 1...n$ decreases π:

$$\pi = \pi(\mathbf{x}) \qquad and \qquad \pi_{x_j} = \partial\pi/\partial x_j < 0 \tag{6}$$

Each of these factors also affects the autonomous term γ of the investment function:

$$\gamma = \gamma(\mathbf{x}) \tag{7}$$

The partial derivative $\gamma_{x_j} = \partial\gamma/\partial x_j$ varies for for different js, both in terms of the sign and the magnitude.

The model is described by equations (6) and (7), together with (1c) and (2). The demand schedule now is:

$$u = D[\gamma(\mathbf{x}), \pi(\mathbf{x})] = D(\mathbf{x}) \tag{8}$$

Demand is eventually a function of the various institutional factors and social norms and distribution appears only as an intermediate step. By taking the total differentials of the basic macroeconomic identity we get:

$$dg^i = dg^s \Leftrightarrow g^i_u du + \big[\sum_{j=1}^{n} g^i_\pi \pi_{x_j} + \sum_{j=1}^{n} g^i_\gamma \gamma_{x_j}\big] dx_j = g^s_u du + \sum_{j=1}^{n} g^s_\pi \pi_{x_j} dx_j. \tag{9}$$

If we focus on one of these factors (say $j = k$), then *ceteris paribus* we have:

$$du/dx_k = D'(x_k) = \frac{(g^i_\pi - g^s_\pi)\pi_{x_k} + g^i_\gamma \gamma_{x_k}}{g^s_u - g^i_u} \tag{10}$$

Assuming again the Keynesian stability condition, we can see how the effect of a change in x_j depends not only on the propensities of investment and saving out of profits, the term $g^i_\pi - g^s_\pi$ (which also appeared in the model of section 3), but also on the secondary effect, which is captured by the term $g^i_\gamma \gamma_{x_k}$. This term has obvious effects on the magnitude of distributional changes on demand, and in certain cases, if it is big enough, it can even change its overall sign. More precisely, the overall effect will be in the opposite direction of the one predicted by the propensities if $g^i_\gamma \gamma_{x_k} > (g^i_\pi - g^s_\pi)\pi_{x_k}$, if the effect through the secondary channel ($g^i_\gamma \gamma_{x_k}$) is in the opposite direction and large enough to counteract the effect through the propensities ($(g^i_\pi - g^s_\pi)\pi_{x_k}$).

Therefore, we should not talk about π-led growth (distribution-led growth), but rather x_j-led growth (institutional-factor-specific-led growth).

6.2 A Methodological Discussion

The points raised by Skott are interesting and require some further reflection. First of all, it is worth mentioning that this point of view is diametrically opposed to the neo-Keynesian/ "Kaldorian" approach, which Skott usually advocates. From a Kaldorian point of view, the Kaleckian model is wrong and the concept of distribution-led growth is misguided because distribution is *purely endogenous* and it is completely determined by economic factors within the model; institutional factors and social norms play no role. On the other hand, the "shock dependent effects" critique outlined in the previous section accepts the classical closure and doubles down on it. The critique now originates from a lower level of abstraction. Essentially,

Skott is arguing that the models working at the overall-distribution level of abstraction are "unhelpful" and have fundamental "weaknesses." Schematically, one could say that the Kaldorian critique is horizontal, coming from the same level of abstraction (other than closure), while the "shock dependent effects" critique is vertical, it accepts the basic closure but criticizes from below (from a lower level of abstraction).

This brings us to the discussion of abstraction in section 2. As it was explained there, as a model moves towards a lower level of abstraction it is to be expected that several complications might arise. Remember the example of the multiplier model or the exchange between Hawtrey and Keynes. The complications raised by moving from the level of abstraction of overall distribution to the level of the individual determinants of distribution are to be expected; they do not constitute a weakness of the Kaleckian model and they do not make it any more or less helpful.

That would be the case only if one would argue that any analysis at the higher abstract level—the level of distribution as a whole—violates the criteria for appropriate abstraction that we set out in section 2.2. However, this is not the case. One can capture real and essential characteristics of the capitalist economy even at this high level of abstraction. The conclusions that are drawn here can then be used as an entry point for less abstract analyses.

It is also worth mentioning that if we take Skott's criticism at face value we should discard the majority of macroeconomic analysis as not helpful and characterized with inherent weaknesses. Besides the Kaleckian model, one could address the same critique to other models that combine the classical theory of distribution at this level of abstraction with investment and demand. For example, Marx's (1885) circuit of capital analysis from the second volume of *Capital* and its contemporary formulations (e.g., Foley 1982; Basu 2014) are susceptible to the same critique. However, the critique is more far-reaching. If this higher abstraction level is rendered wrong, then all classical analysis and models that work on that high level of abstraction are wrong as well. The

same for Keynesian model. For example, any model with an investment function like that in section 3—which does not take into account the complications of analyzing the determinants of profitability and treats γ as constant and exogenous—faces the same problems. This is the case, for example, in the models of Kaldor (1961) or Joan Robinson (1962) but also in a significant portion, if not the vast majority, of the heterodox macro models—including the majority of Skott's models. If we go one step further, rejecting that level of abstraction as not essential, means that we would also reject every model that operates at that level, including abstract neo-Keynesian (e.g., Kaldor 1955; Pasinetti 1962) or neoclassical models such as Solow's (1956).

Furthermore, one can make the same kind of "critique" to the new lower level of abstraction. For each x_j in $\mathbf{x}$, we could define a vector $\mathbf{x_j} = \{x_{j1}, x_{j2}, ..., x_{jm}\}$ with the determinants of x_j as its elements, and investigate the potential implications and complications that arise at this lower level of abstraction. If, for example, x_j refers to the power of trade unions, the elements of $\mathbf{x_j}$ would refer to variables like the structure of the trade union movement in an economy, the relation between the trade unions and political parties, corruption in the trade unions, the relation between the power of the trade unions and the structural characteristics of the economy, etc. These are obviously interesting and legitimate concerns but the analytical complications that they give rise to do not invalidate the usefulness of the more abstract model. More generally, any economic model is susceptible to this kind of critique for the simple reason that any model entails a significant element of abstraction. We can always move to a lower level of abstraction and this invariably will lead to complications, but these complications do not negate the usefulness of the more abstract model (except if the abstract model itself violates the methodological criteria of section 2.2). To give a final example, one can criticize the Solow (1956) model for abstracting from classes, which is a essential feature of capitalism, and thus violates our criteria for appropriate abstraction. However, they cannot criticize it on the grounds that if we distinguish between two kinds of labor (say low- and high-skilled labor instead of treating labor as homogeneous, as Solow does) the

comparative statics exercises of the model are altered and some complications arise. This might be a useful and necessary extension of the model for certain issues and applications, but it cannot be taken as a critique of the original model and does not make it any more or less helpful.

To sum up, Skott's argument is not valid as a *critique* against the Kaleckian model. A model cannot be criticized based on the complications that arise in a less abstract version of the model. These kinds of complications are to be expected in any model and they neither make the Kaleckian model and the concept of distribution-led growth any more or less helpful nor constitute a fundamental weakness of them. To paraphrase Keynes (from section 2.1): *I do not see that, at the level of abstraction in which the Kaleckian model works, any different treatment is required. In a realistic study it makes, of course, a difference whether one is considering what institutional factors and social norms lead to changes in distribution. But the sort of considerations that are relevant to this issue belong to a different level.*

To be sure, the issues raised by Skott point to interesting future directions for theoretical and empirical research around the Kaleckian model. A theoretical and empirical investigation of the role of the various institutional factors and social norms is such a potentially interesting future direction that can also allow for a more operational definition of the concept of distribution-led growth and a better empirical estimation of the effects of changes in distribution on utilization and growth.

7 CONCLUSION

This paper discussed two "endogeneity" critiques against the Kaleckian model of growth and distribution. The first one, coming from a neo-Keynesian point of view, proposes a different closure to the macro system, and maintains that income distribution becomes purely endogenous

so that total savings adjust to a full employment level of investment. A different, more recent critique, put forward by Skott (2016), accepts the overall closure of the Kaleckian model, but criticizes the concept of distribution-led growth because several of the social norms and institutional factors that determine distribution might have differential effects on investment. Therefore economic theory needs to focus on these norms and factors individually and ditch the concept of distribution-led growth.

I argued that both these critiques have some obvious methodological aspects, related to the use of abstraction in economic theory, and thus can be approached from a methodological angle. For that reason, I discussed in some detail how abstraction is used in science and economics. Part of that discussion explained why closure is a special kind of abstraction. I also explained the two criteria proposed by Lawson (1989) for what constitutes an appropriate (and inappropriate) abstraction.

This discussion allows us first to argue that the closure of the Kaleckian model is the most general and appropriate compared to the classical, the neo-classical, and the neo-Keynesian closure, because it alone can capture the essential characteristics of modern capitalism, namely the importance of effective demand, the elastic supply of labor, and the importance of institutions and social norms in the determination of distribution.

Regarding the more recent issues raised by Skott (2016), I showed that they are not valid as a critique because they originate at a lower level of abstraction. The complications that arise are to be expected, as in every model compared to its less abstract progenitor. At the same time, these issues point to an interesting direction for future theoretical and empirical research within the Kaleckian approach.

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