

FMM WORKING PAPER

No. 24 · June, 2018 · Hans-Böckler-Stiftung

DISTRIBUTION-LED GROWTH THROUGH METHODOLOGICAL LENSES

Michalis Nikiforos*

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, it is criticized because it treats distribution as quasi-exogenous, while in Skott (2017), 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 uses the criteria proposed by Lawson (1989) for what constitutes an appropriate abstraction. Based on this discussion, it concludes that the criticisms are weak, although the issues raised by Skott provide some interesting directions for future work within the Kaleckian framework.

* Levy Economics Institute of Bard College. Email address: mnikifor@levy.org.

A previous version of this paper was published in the Levy Economics Institute working paper series (No. 879).

Distribution-led growth through methodological lenses

Michalis Nikiforos*

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, it is criticized because it treats distribution as quasi-exogenous, while in Skott (2017), 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 uses the criteria proposed by Lawson (1989) for what constitutes an appropriate abstraction. Based on this discussion, it concludes that the criticisms are weak, although the issues raised by Skott provide some interesting directions for future work within the Kaleckian framework.

Keywords: Kaleckian model, distribution-led, abstraction, closure

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

*Levy Economics Institute of Bard College. Email address: mnikifor@levy.org. A previous version of this paper was published in the Levy Economics Institute working paper series (No. 879). The paper has benefited from long discussions with Peter Skott. For useful discussions, comments and suggestions I would also like to thank three anonymous referees, Duncan Foley, Jan Kregel, Tom Michl, Yannis Dafermos, as well as participants in the 43rd EEA annual conference in New York, the 20th FMM conference in Berlin, and the Crotty Hall Celebration Conference at the University of Massachusetts, Amherst. The usual disclaimer applies.

1 Introduction

A standard workhorse of modern non-mainstream macroeconomics is what has come to be known as the Structuralist or the Kaleckian model 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, 2017). According to this variant—and along the lines of Kaldor (1955) and Robinson (1956)—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.

The second variant of the endogeneity critique is put forward in a recent paper by Skott (2017). 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

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

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 assess 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 choice between the endogenous and exogenous variables of a model or a theory—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. One of the main innovations of the model is the hybrid closure that it employs. On the one hand there is a demand-led economy, where investment has an autonomous status (and in the simplest specification reacts to profitability and utilization). On the other hand there is an emphasis on the role of institutions and social norms as the main determinants of distribution of income (through their effect on the ability of the firms to set the mark-up on unit costs).

This kind of closure 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 an appropriate and general closure. 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 weak, although it provides insights for future work within the Kaleckian framework.

The paper proceeds as follows. Section 2 discusses the concepts of abstraction and clo-

sure. 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, p. 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, p. 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 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).

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 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:	$T = t \cdot Y$

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 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 expen-

diture into n kinds, so that $\bar{G} = G(\bar{g}_1, \bar{g}_2 \dots \bar{g}_n)$. These different kinds of government expenditure can have, as I explained, a differential impact on investment. More formally, $I = I(\bar{g}_1, \bar{g}_2 \dots \bar{g}_n)$ and $\partial I / \partial \bar{g}_i \gtrless 0$ is different for the various i s.

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.²

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 a 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, p.617-633). 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 to 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, p. 629, emphasis added) replied as follows:

²One 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.

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.³

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 appropriate (and thereof inappropriate) abstraction. An answer to this is provided by Lawson (1989)

³This 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.

in a paper that discusses the methodological approach of Kaldor.⁴ This discussion forms the basis for the discussion of the abstract method in Lawson's later work (e.g., 1997, ch. 16). 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" (p. 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 produce predictions that are in line with reality (or the "stylized facts" of reality); it is also necessary to posit mechanisms that are real and are themselves subject to empirical scrutiny. The requirement for real abstraction comes straight from the basic principles of the critical realist program. As mentioned above, critical realists postulate that reality exists independently of human observation and experience. The goal of science is to understand this reality and uncover the mechanisms that lead to what we observe and experience. Hence the explanation itself—abstract as it may be—is equally important to the prediction. 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.

⁴Kaldor, in some of his most significant writings, talks about "appropriate" abstraction (1961, p. 177), "abstract and unreal constructions" (1972, p. 1239), "the wrong kind of abstraction" (1975, p. 347), etc.

This immediately comes in contrast with the *as if* methodological approach of neoclassical economics, 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, p. 14). For Friedman, the only thing that matters is the *predictions* of the model or the theory. Theory is to be judged only by its predictive power.

There are two main problems with Friedman’s methodological approach—and more generally with methodological positivism. The first is related to what sometimes is called Duhem-Quine underdetermination thesis (Quine, 1951), which states that any theory can be shielded against contrary empirical evidence. The basic idea is that the empirical testing of a theory always requires making a series of auxiliary hypotheses. The failure of a theory to pass the empirical tests can always be attributed to these auxiliary hypotheses and not the theory itself. Second, as pointed out by Thomas Kuhn in *The Structure of Scientific Revolutions* (1962), observation is not neutral; what is seen and how it is explained is crucially determined by the paradigm the scientist comes from. Kuhn also stresses the sociological aspects of the scientific community. These factors lead to scientists holding to a certain paradigm even if there is towering evidence against it. Hence science does not progress as positivism posits, in a continuous and harmonious fashion, with the development of theories that are then tested against empirical evidence (some pass, some fail), but rather through scientific revolutions where the old paradigm is completely (or almost completely) abandoned. These two criticisms of positivism are useful to keep in mind for understanding the reaction (or the lack thereof) of the economics profession to the recent crisis.

To go back to Lawson’s criteria for abstraction; according to the second criterion, abstraction has to “isolate a significant element of the world” (Sayer [1984] quoted in Lawson [1989, p. 126]).⁵ In most of his discussion, Lawson contrasts the essential to the *merely more general*. Al-

⁵Lawson (1989) uses in several instances the word “isolate,” as it is commonly understood, to describe the process of abstraction. A few years later Mäki (1992, 1994) proposed the method of *isolation*: “In an isolation, something, a set X of entities, is “sealed off” from the involvement or influence of everything else, a set of Y entities; together X and Y comprise the universe” (Mäki, 1992, p. 321). Mäki’s process of isolation has been criticized by Lawson on ontological

though 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, p. 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) 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 equilibrium theory:

grounds, because it requires that the social system can be broken down into parts and reconstructed mechanically as the sum of these parts taken separately. However, social reality is an internally related whole and it cannot be understood that way (Lawson, 1997, p. 131-133, 234-237, 2009, p. 203-206). It is beyond the scope of this paper to provide a detailed account of this debate. It suffices to say that the word isolate is used throughout this paper in its common meaning as in Lawson (1989), and not with reference to Mäki’s process of isolation.

⁶Not surprisingly, these observations go back to classical political economy. For example, Marx (1993, p. 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” (p. 105).

⁷The 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.

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, p. 1240, emphasis in the original).

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, p. 348, emphasis in the original).

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.” Closure refers to the choice between the endogenous and exogenous variables of a model or a theory. In the case of economics, at the most basic level the closure rules of the model specify what variables are determined within the economic system of the model under examination and what variables are determined outside. Closure rules supplement the accounting identities of the system—in a basic macroeconomic model these are the decomposition of output from the expenditure and income sides—with additional information that

make its solutions determinate.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 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

⁸In macroeconomics, an early treatment of the concept of closure (without calling it that) is provided by Kaldor (1955, p. 94) and Sen (1963). The term was coined by Taylor and Lysy (1979). More recent discussions can be found in Marglin (1984), Dutt (1990), Foley and Michl (1999), and Taylor (2004).

⁹In an essay on the theory of the interest rate, Keynes (1973b, p. 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.”

distribution because they abstract from the institutional factors that have a direct impact on distribution and focus only on its economic determinants. In this case institutions can affect distribution only indirectly, through their effects on other economic variables. 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 directly related institutional factors. Therefore, a theory that focuses on the latter and completely abstracts from the former fails the second criterion laid out above 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—capitalists’ 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 $g_r^i > 0$ and $g_u^i > 0$. The subscript denotes the partial derivative for this variable. Realized profitability matters for investment for two reasons. First, investment decisions are determined based on expected profitability. In an uncertain world the expectations of the entrepreneurs for future profitability is based to a large extent on current profitability. Hence realized profitability affects investment through its effect on expected profitability. Second, according to the principle of increasing risk (Kalecki, 1937b), the marginal risk rises with the size of the investment. Two factors account for that: i) the higher the investment is the most severe would be its effect on

the balance sheets of the firm if it is unsuccessful and ii) the new capital is an illiquid asset—it cannot be easily sold if there is a sudden need for funds—thus the risk of “illiquidity” rises with the size of investment. Higher profitability by allowing a larger share of investment to be financed through internal funds eases both these constraints and thus *ceteris paribus* leads to a higher level of investment.¹⁰

The positive effect of utilization on investment can be understood in terms of the acceleration principle. Moreover, firms desire to have excess capacity to face unexpected increases in demand. Therefore, a rise in the rate of utilization will induce accumulation (Steindl, 1952).

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

$$g^s = g^s(\pi, u) \quad (2)$$

where π denotes the profit share. A higher profit share increases saving because capitalists' saving rate is higher than workers' ($g_\pi^s > 0$). Also, higher income leads—*ceteris paribus*—to higher savings ($g_u^s > 0$).

The two equations for investment and saving define the demand side of the economy. At equilibrium, investment is equal to saving ($g^i = g^s$), thus we can define a demand function as:

$$u = D(\pi) \quad (3)$$

By taking the total differentials of the equilibrium condition, we get $dg^i = dg^s \Leftrightarrow g_u^i du + g_\pi^i \pi = g_u^s du + g_\pi^s d\pi$. Therefore,

$$du/d\pi = D'(\pi) = \frac{g_\pi^i - g_\pi^s}{g_u^s - g_u^i} \quad (4)$$

Given the Keynesian stability condition ($g_u^s - g_u^i > 0$), the denominator of the fraction is positive,

¹⁰In many of Kalecki's writings (e.g., 1937a) there is the distinction between investment decisions and actual investment. This is one of the main underlying mechanisms of his theory of the business cycle. Such a distinction is not made here, where actual and planned investment coincide.

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 ($g_{\pi}^i - g_{\pi}^s > 0$). In this case demand is said to be profit led ($du/d\pi > 0$). In the opposite case (when $g_{\pi}^i - g_{\pi}^s < 0$), demand is wage led ($du/d\pi < 0$).

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.¹¹ Kalecki himself emphasized the price-setting behavior of the firm as the main mechanism for the determination of income distribution (Kalecki, 1940, 1954, 1971b). The individual firm sets its price as a mark-up over unit cost (mostly wages and intermediate inputs). In turn, under certain assumptions, the individual price-setting behavior of firms can be aggregated to the industry or macro level and provide a theory of distribution (Basile and Salvadori, 1984). In the simplest case, assuming that wages are the only variable cost, the price level can be written as:

$$p = (1 + m)w/x \quad (5)$$

where p is the price level, m is the mark-up, w is the nominal wage and, x is labor productivity. The mark-up is determined by various institutional and structural factors, such as the degree of competition in the markets, the class struggle, the power of the unions, fiscal and monetary policy, social-insurance and pension policies, etc. *At a certain level of abstraction* these are considered to be outside the system under examination and thus the real wage and distribution are treated as “exogenous” constants. Therefore, based on equation (5), we can write:

$$\pi = \frac{m}{1 + m} = \bar{\pi} \quad (6)$$

where $\bar{\pi}$ is a constant. The aforementioned institutional factors affect the profit share through their effect on the ability of the firms to set the mark-up. Thus, a change in distribution implies some sort

¹¹In 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 institutional change. Importantly, this 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. It is straightforward to model endogenous distribution, which reacts to changes in aggregate demand (or other economic variables); 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 $\langle u, \pi \rangle$ space. The profit share increases as utilization increases at low levels of u and then decreases at higher levels of u .¹²

Mathematically, this kind of endogeneity can be captured as:

$$\pi = \Pi(u) = \pi_0 + \pi(u) \tag{6a}$$

where π_0 is an exogenous constant—a shift variable. In the case of the profit squeeze $\Pi'(u) =$

¹²Nikiforos and Foley (2012) find empirical evidence for such a behavior of distribution and discuss its implications.

$\pi'(u) < 0$, 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 (6) is a special case of (6a), 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 (6a).

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.¹³

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 in 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.

Finally, it is important to note that the concept of wage- and profit-led growth can be established based on more general theoretical premises that are not, strictly speaking, Kaleckian. On the investment side it requires that investment is affected by profitability. One could motivate such a

¹³The 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 few 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 [2017]). 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.

specification based on the discussion of accumulation in Marx’s *Capital* or Keynes’s *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, it is necessary to assume that capitalists save more than workers. This 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). Lastly, on the distribution side it is enough to accept that distribution is determined exogenously—in the way discussed above—based on institutional factors and social norms, but without necessarily referencing the pricing behavior of the firms.

4 Closure in different economic traditions

The discussion in the previous section demonstrated that the Kaleckian model and the derivation of the concept of distribution-led growth rest on a hybrid closure that combines: i) the Keynesian rejection of Say’s law and thus the autonomous role of investment (which, as specified above, responds to profitability and utilization); and ii) the emphasis on the institutional aspects in the determination of distribution through their effects on the ability of the firms to set prices above unit labor costs. To understand this more clearly we can go through the different closures proposed by different economic traditions. The taxonomy adopted here is based on Sen (1963), Marglin (1984), Dutt (1990), Foley and Michl (1999), and Taylor (2004). Besides the Kaleckian model, we examine the classical, neoclassical, and neo-Keynesian approaches to growth and distribution, as well as the closure of Keynes’s *General Theory* (1936).

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).¹⁴ The exogenous distribution of income and the also-exogenous saving propensities of the two classes,

¹⁴The exogeneity of distribution is motivated either through the importance of the aforementioned institutional factors or through a Malthusian-type population equilibrium.

workers and capitalists, determine the overall saving and thus, through Say's law, investment and growth.

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 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, p. 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 (this is why Sen [1963] calls it *neo*-Keynesian as opposed to Keynesian). 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.¹⁵ This is the

¹⁵The 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 autonomous expenditure leads to an increase in the price level

distributional story put forward by Kaldor (1955) and Robinson (1956), which echoes the “forced saving” ideas of Schumpeter (1934), and Keynes of *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, have no direct impact; they play a role only through their effects on the economic variables that determine distribution. For example, in the neo-Keynesian model institutions can affect distribution only to the extent that they affect the (exogenous) accumulation rate or the saving rates. 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.¹⁶

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.¹⁷

Before moving on, I should note that the taxonomy employed here is generic and therefore it is not exhaustive either in breadth or depth. To begin with, the classical approach is diverse and heterogeneous and includes models that are demand led. The example that comes first to one’s mind is the circuit of capital model from Volume II of *Capital* Marx (1885) and its recent formulations (e.g., Foley, 1982). From that point of view it is not surprising that Basu (2014), using a discrete-time version of Foley’s model, is able to derive wage- and profit-led regimes.

Second, the aforementioned taxonomy does not include the neo-Sraffian approach to growth and thus a decrease in the real wage and an increase in the profit share.

¹⁶Recent critiques along these lines include Skott and Zipperer (2012), Ryoo (2015) and Skott (2017).

¹⁷Some 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.”

and distribution stemming from the work of Pierangelo Garegnani (1962).¹⁸ This approach shares the Kaleckian the rejection of Say's law and the classical theory of distribution. With respect to the discussion of the present paper, an important difference is that in Sraffian models profitability is not an argument of the investment function, and therefore the economy is always wage led in a reversal of the classical model.¹⁹ Other important differences include the endogeneity or not to demand of the level of capacity utilization in the long run (Committeri, 1986, Kurz, 1986, Nikiforos, 2013, 2016), the firm's pricing behavior (Steedman, 1992), and the role of the so-called autonomous demand.²⁰

Finally, it is also well-known that the neoclassical model can be demand led, have unemployment, and/or have exogenous distribution if certain frictions or rigidities are in operation.²¹ Most often, institutions and their effect on distribution are viewed through these lenses. For example, the power of trade unions or certain government policies (minimum wage, unemployment benefits, etc.) lead to frictions in the labor market, which have an effect on income distribution and allow for demand effects, at least in the short run. At the same time they increase the rate of unemployment or the non-accelerating inflation rate of unemployment (NAIRU). In the context of our discussion the neoclassical frictions can be understood as *ad hoc* closure rules that add one or more dimensions (equations) to the model and thus allow for more variables (e.g., investment) to become endogenous. This kind of chameleon-like approach to economic theorizing is highly problematic but it has served very well the neoclassical paradigm from an evolutionary point of view.²²

¹⁸More recent contributions within this tradition include Garegnani (1992), Serrano (1995), Bortis (1997), Cesaratto et al. (2003), Palumbo and Trezzini (2003), de Juan (2005), Garegnani and Trezzini (2010), Freitas and Serrano (2015), Cesaratto (2015), and Serrano et al. (2017).

¹⁹In most of these neo-Sraffian models changes in distribution have only *level* but not *growth* effects on the long-run equilibrium.

²⁰For a recent critical discussion of a strand of this literature, the so-called Sraffian Supermultiplier, see Nikiforos (2018).

²¹This idea goes back to Pigou (1933)—against whom Keynes argued in *The General Theory*—and then to the neoclassical synthesis models *à la* Hicks (1937) and Modigliani (1944), where nominal wages are rigid, and has been adopted in more recent New-Keynesian models. Apart from nominal wages, rigidities in these kinds of models are also related to other nominal prices, which in the baseline neoclassical model are supposed to adjust and clear the related market, such as the goods prices (Taylor, 1980, Calvo, 1983), the nominal interest rate (Krugman, 1998, Eggertsson and Krugman, 2012), or the nominal exchange rate (Obstfeld and Rogoff, 1996).

²²There are at least three problems with this kind of frictions-based approach to growth and distribution. First, it is

5 The Kaleckian model as an appropriate 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 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 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 an appropriate one.

questionable to what degree some of these frictions are important or even real. For example, the hype around the zero lower bound of the nominal interest rate, as an explanation of the stagnation post-crisis, suddenly evaporated when the European Central Bank and the Bank of Japan introduced negative interest rates. Second, the logical conclusion of these models is that we should try to get rid of the rigidities to allow the system to work more efficiently. So, the new-Keynesian models recognize the potential negative effects of austerity on economic activity, but they advocate for “structural reforms,” which will weaken the rigidities and mitigate these negative effects. This comes in stark contrast to the policy recommendations stemming from a non-neoclassical framework. Third, in theory and practice these rigidities are considered to be only short-run problems; in the long run the economy is assumed to behave according to the canonical neoclassical model. For example, at a theoretical level, Paul Samuelson, a neoclassical-synthesis Keynesian, argued that distribution can be understood based on technology and scarcity (these are the famous “three parables” in Samuelson [1962]). Robert Solow was also a neoclassical-synthesis Keynesian, and at the same time the designer of the canonical neoclassical model of growth and distribution (Solow, 1956). Or, in another example, the economic forecasts based on new-Keynesian models are demand led only for a short-run horizon (usually of two to three years) and then they explicitly switch to a supply-side determination. 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 these closure assumptions they make.

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 Commission, 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. 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 much better.²³

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, nine years after the beginning of the recovery the employment-to-population ratio has increased by only 2% while the U6 unemployment rate—which includes discouraged workers, other marginally attached workers and those working part-time purely for economic reasons—is around 8%. 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—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 stum-

²³The macro-econometric model of the Levy Institute, which is demand driven, is a case in point. For a discussion see Godley (1999), Zezza (2009), Papadimitriou et al. (2014, 2015, 2016) and Nikiforos and Zezza (2017, 2018). A similar model for the Greek economy has also significantly over-performed the projections of the “troika” (Papadimitriou et al., 2013).

bled 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.²⁴

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.²⁵

In the classical, neoclassical, and neo-Keynesian theories of distribution 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.²⁶ 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.²⁷ We can utilize the data for the size distribution of income in the United States from the *World Inequality Database* (Alvaredo et al., 2016) which are available for a longer period of time. Obviously, size and functional distribution are not the same. However, first, 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

²⁴For a discussion, see Judt (2006, chapters X and XIV).

²⁵It is also clear, that in such a counter-factual scenario, the reactions against immigrants and refugees would be significantly weaker.

²⁶The exception to this duality is the closure of *The General Theory*, where both distribution and employment are endogenously determined. The basic model of *The General Theory* has one more dimension than the basic model of the classical, neoclassical, and neo-Keynesian theories. This allows Keynes to treat both distribution and employment as endogenous. As I mentioned above, distribution was not a major concern for Keynes.

²⁷In the US the Bureau of Labor Statistics provides consistent data for the period after 1947.

of income of workers and capitalists in an abstract model.²⁸

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 1934-1944 the average growth rate was 10.25% with only one year of negative growth. Therefore, the 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 neo-classical 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.²⁹

The other big change in the distribution of income has taken place during the 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 during that period 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 of 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.

²⁸For example, the wage income of the CEO 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.

²⁹A similar story can account for the changes in the distribution of income in Europe the first decades after the war.

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.³⁰

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, p. 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 post-war 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 an appropriate 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, p. 279 emphasis added) writes about the neo-Keynesian approach to distribution:

³⁰For example, Duménil and Lévy (2011, p. 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.”

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 to 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 validity of the Kaleckian closure as a *general* one.

6 Another critique: “shock-dependent effects”

6.1 The critique

In a recent paper, Skott (2017, 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 Kaleckian 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 on “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).

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 a role only to the extent that they affect these factors. On the other hand, the “shock dependent effects” critique 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 also all classical analysis and models that work on that high level of abstraction are wrong as well. For example, any model with an investment function like that in section 3—which does not take into account the complications of analyzing individually the determinants of profitability 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 Solow (e.g., 1956).

Furthermore, one can make the same kind of “critique” to the new lower level of abstraction. For each of the aforementioned institutional factors we could think of its various determinants, and investigate the potential implications and complications that arise—at this even-lower level of

abstraction—when these determinants change. For example, if one of the institutional factors that determine distribution is the power of trade unions, there are several factors that in their turn determine the power of the trade unions: 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 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 an 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 weak 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 (2017), 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 a general and appropriate one because it 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 (2017), I showed that they are weak 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.

References

- Acemoglu, D. (2002). Technical Change, Inequality, and the Labor Market. *Journal of Economic Literature* 40(1), 7–72.
- Alvaredo, F., A. B. Atkinson, T. Piketty, E. Saez, and G. Zucman (2016). Distributional National Accounts (DINA) Guidelines: Concepts and Methods used in WID. world. WID. world Working Paper, url: <http://www.wid.world>.
- Auerbach, P. and P. Skott (1988). Concentration, Competition and Distribution - a Critique of Theories of Monopoly Capital. *International Review of Applied Economics* 2(1), 42–61.
- Barbosa-Filho, N. H. and L. Taylor (2006). Distributive and Demand Cycles in the U.S. Economy- A Structuralist Goodwin Model. *Metroeconomica* 57(3), 389–411.
- Basile, L. and N. Salvadori (1984). Kalecki's pricing theory. *Journal of Post Keynesian Economics* 7(2), 249–262.
- Basu, D. (2014). Comparative Growth Dynamics in a Discrete-time Marxian Circuit of Capital Model. *Review of Radical Political Economics* 46(2), 162–183.
- Bortis, H. (1997). *Institutions, behaviour and economic theory: a contribution to classical-Keynesian political economy*. Cambridge, UK: Cambridge University Press.
- Bowles, S. and R. Boyer (1988). Labor Discipline and Aggregate Demand: A Macroeconomic Model. *The American Economic Review* 78(2), 395–400.
- Calvo, G. A. (1983). Staggered prices in a utility-maximizing framework. *Journal of Monetary Economics* 12(3), 383–398.
- Cesaratto, S. (2015). Neo-Kaleckian and Sraffian controversies on the theory of accumulation. *Review of Political Economy* 27(2), 154–182.

- Cesaratto, S., F. Serrano, and A. Stirati (2003). Technical change, effective demand and employment. *Review of Political Economy* 15(1), 33–52.
- Committeri, M. (1986). Some comments on recent contributions on capital accumulation. *Political Economy* 2(2), 161–186.
- de Juan, O. (2005). Paths of accumulation and growth: towards a Keynesian long-period theory of output. *Review of Political Economy* 17(2), 231–252.
- Debreu, G. (1974). Excess demand functions. *Journal of mathematical economics* 1(1), 15–21.
- Dobb, M. (2012 [1937]). *Political Economy and Capitalism: Some Essays in Economic Tradition*. New York: Taylor & Francis.
- Duménil, G. and D. Lévy (1999). Being Keynesian in the Short Term and Classical in the Long Term: The Traverse to Classical Long-Term Equilibrium. *The Manchester School* 67(6), 684–716.
- Duménil, G. and D. Lévy (2004). *Capital resurgent: Roots of the neoliberal revolution*. Cambridge, MA: Harvard University Press.
- Duménil, G. and D. Lévy (2011). *The Crisis of Neoliberalism*. Cambridge, MA: Harvard University Press.
- Dutt, A. K. (1990). *Growth, Distribution and Uneven Development*. Cambridge, UK: Cambridge University Press.
- Eggertsson, G. B. and P. Krugman (2012). Debt, deleveraging, and the liquidity trap: A Fisher-Minsky-Koo approach. *The Quarterly Journal of Economics* 127(3), 1469–1513.
- Foley, D. K. (1982). Realization and Accumulation in a Marxian Model of the Circuit of Capital. *Journal of Economic Theory* 28(2), 300–319.

- Foley, D. K. and T. Michl (1999). *Growth and Distribution*. Cambridge, MA: Harvard University Press.
- Freitas, F. and F. Serrano (2015). Growth rate and level effects, the stability of the adjustment of capacity to demand and the Sraffian supermultiplier. *Review of Political Economy* 27(3), 258–281.
- Friedman, M. (1953). The Methodology of Positive Economics. In *Essays in Positive Economics*, pp. 3–34. Chicago, IL: University of Chicago Press.
- Garegnani, P. (1962). Il problema della domanda effettiva nello sviluppo economico italiano. Svimez, Rome.
- Garegnani, P. (1992). Some notes on Capital Accumulation. In J. Halevi, E. J. Nell, and D. Laibman (Eds.), *Beyond the Steady State: A Revival of Growth Theory*. New York: St. Martin's Press.
- Garegnani, P. and A. Trezzini (2010). Cycles and growth: a source of demand-driven endogenous growth. *Review of Political Economy* 22(1), 119–125.
- Godley, W. (1999). Seven unsustainable processes: medium-term prospects and policies for the United States and the World. Technical report, Levy Economics Institute.
- Goodwin, R. M. (1967). A Growth Cycle. In C. Feinstein (Ed.), *Socialism, Capitalism and Economic Growth*, pp. 54–58. Cambridge, UK: Cambridge University Press.
- Gordon, D. M. (1995). Growth, Distribution, and the rules of the game. In G. A. Epstein and H. Gintis (Eds.), *Macroeconomic Policy after the Conservative Era*, pp. 335–383. Cambridge, UK: Cambridge University Press.
- Harvey, D. (2007). *A brief history of neoliberalism*. Oxford, UK: Oxford University Press.
- Hicks, J. R. (1937). Mr. Keynes and the "classics"; a suggested interpretation. *Econometrica* 5(2), 147–159.

- Judt, T. (2006). *Postwar: A History of Europe Since 1945*. Penguin Books: History. Penguin Books.
- Kaldor, N. (1955). Alternative Theories of Distribution. *The Review of Economic Studies* 23(2), 83–100.
- Kaldor, N. (1961). Capital Accumulation and Economic Growth. In F. Lutz and D. Hague (Eds.), *The Theory of Capital: Proceedings of a Conference held by the International Economic Association*, New York, NY. St. Martin's Press.
- Kaldor, N. (1972). The Irrelevance of Equilibrium Economics. *The Economic Journal* 82(328), 1237–1255.
- Kaldor, N. (1975). What is Wrong With Economic Theory. *The Quarterly Journal of Economics* 89(3), 347–357.
- Kalecki, M. (1937a). A Theory of the Business Cycle. *The Review of Economic Studies* 4(2), 77–97.
- Kalecki, M. (1937b). The Principle of Increasing Risk. *Economica* 4(16), 440–447.
- Kalecki, M. (1940). The Supply Curve of an Industry under imperfect competition. *Review of Economic Studies* 7(2), 91–112.
- Kalecki, M. (1954). *Theory of Economic Dynamics*. London: Allen and Unwin.
- Kalecki, M. (1971a). Class Struggle and the Distribution of National Income. *Kyklos* 24(1), 1–9.
- Kalecki, M. (1971b). *Selected Essays on the Dynamics of the Capitalist Economy*. Cambridge, UK: Cambridge University Press.
- Keynes, J. M. (1973a). *The General Theory and After: Part I Preparation*. The Collected Writings of John Maynard Keynes, Volume XIII. London: The MacMillan Press.

- Keynes, J. M. (1973b). *The General Theory and After: Part II: Defence and Development*. The Collected Writings of John Maynard Keynes, Volume XIV. London: The MacMillan Press.
- Keynes, J. M. (2013 [1930]). *A Treatise on Money*. The Collected Writings of John Maynard Keynes, Volumes V & VI. Cambridge University Press.
- Keynes, J. M. (2013 [1936]). *The General Theory of Employment, Interest and Money*. The Collected Writings of John Maynard Keynes, Volume VII. Cambridge University Press.
- Kotz, D. M. (2015). *The rise and fall of neoliberal capitalism*. Cambridge, MA: Harvard University Press.
- Krugman, P. R. (1998). It's baaack: Japan's slump and the return of the liquidity trap. *Brookings Papers on Economic Activity* 1998(2), 137–205.
- Kuhn, T. S. ([2012] 1962). *The structure of scientific revolutions*. Chicago, IL: University of Chicago press. 50th anniversary (4th edition).
- Kurz, H. (1986). Normal positions and capital utilisation. *Political Economy* 2(1), 37–54.
- Lawson, T. (1989). Abstraction, tendencies and stylised facts: a realist approach to economic analysis. *Cambridge Journal of Economics* 13(1), 59–78.
- Lawson, T. (1997). *Economics and Reality*. London: Routledge.
- Lawson, T. (2009). On the nature and roles of formalism in economics: reply to Hodgson. In E. Fullbrook (Ed.), *Ontology and Economics: Tony Lawson and his critics*, pp. 189–231. London, UK: Routledge.
- Mäki, U. (1992). On the Method of Isolation in Economics. *Poznan Studies in the Philosophy of the Sciences and the Humanities* 26, 19–54.

- Mäki, U. (1994). Isolation, idealization and truth in economics. *Poznan Studies in the Philosophy of the Sciences and the Humanities* 38, 147–168.
- Mantel, R. R. (1974). On the characterization of aggregate excess demand. *Journal of Economic Theory* 7(3), 348–353.
- Marglin, S. A. (1984). *Growth, distribution, and prices*. Cambridge, MA: Harvard University Press.
- Marx, K. (1976 [1867]). *Capital: A Critique of Political Economy, Vol. I*. London, England: Penguin Books.
- Marx, K. (1978 [1885]). *Capital: A Critique of Political Economy, Vol. II*. London, England: Penguin Books.
- Marx, K. (1993). *Grundrisse: Foundations of the Critique of Political Economy*. London: Penguin.
- Modigliani, F. (1944). Liquidity preference and the theory of interest and money. *Econometrica* 12(1), 45–88.
- Nikiforos, M. (2013). The (Normal) Rate of Capacity Utilization at the Firm Level. *Metroeconomica* 64(3), 513–538.
- Nikiforos, M. (2016). On the ‘utilisation controversy’: a theoretical and empirical discussion of the Kaleckian model of growth and distribution. *Cambridge Journal of Economics* 40(2), 437–467.
- Nikiforos, M. (2017). Uncertainty and Contradiction: An Essay on the Business Cycle. *Review of Radical Political Economics* 49(2), 247–264.
- Nikiforos, M. (2018). Some comments on the Sraffian Supermultiplier approach to growth and distribution. *Journal of Post Keynesian Economics*. Forthcoming. a previous version has been published as Levy Economics Institute of Bard College, Working Paper No. 907.

- Nikiforos, M. and D. K. Foley (2012). Distribution and Capacity Utilization: Conceptual Issues and Empirical Evidence. *Metroeconomica* 63(1), 200–229. Special Issue on Kaleckian Growth Theory.
- Nikiforos, M. and G. Zezza (2017, April). The Trump Effect: Is This Time Different? Strategic Analysis, Levy Economics Institute.
- Nikiforos, M. and G. Zezza (2018, April). "America First," Fiscal Policy, and Financial Stability. Strategic Analysis, Levy Economics Institute.
- Obstfeld, M. and K. S. Rogoff (1996). *Foundations of international macroeconomics*. Cambridge, MA: MIT press.
- O'Donnell, R. (1989). *Keynes: Philosophy, Economics and Politics: The Philosophical Foundations of Keynes's Thought and their Influence on his Economics and Politics*. New York: St. Martin's Press.
- Palumbo, A. and A. Trezzini (2003). Growth without normal capacity utilization. *European Journal of the History of Economic Thought* 10(1), 109–135.
- Papadimitriou, D. B., G. Hannsgen, M. Nikiforos, and G. Zezza (2015, May). Fiscal Austerity, Dollar Appreciation, and Maldistribution Will Derail the US Economy. Strategic Analysis, Levy Economics Institute.
- Papadimitriou, D. B., M. Nikiforos, and G. Zezza (2013, July). The Greek economic crisis and the experience of austerity. Strategic Analysis, Levy Economics Institute.
- Papadimitriou, D. B., M. Nikiforos, and G. Zezza (2016, April). Destabilizing an unstable economy. Strategic Analysis, Levy Economics Institute.
- Papadimitriou, D. B., M. Nikiforos, G. Zezza, and G. Hannsgen (2014, April). Is Rising Inequality a Hindrance to the US Economic Recovery? Strategic Analysis, Levy Economics Institute.

- Pasinetti, L. L. (1962). Rate of Profit and Income Distribution in Relation to the Rate of Economic Growth. *The Review of Economic Studies* 29(4), 267–279.
- Pigou, A. C. (2013 [1933]). *Theory of unemployment*. New York: Routledge.
- Piketty, T. and E. Saez (2003). Income inequality in the United States, 1913–1998. *The Quarterly Journal of Economics* 118(1), 1–41.
- Quine, W. v. O. (1951). Two dogmas of empiricism. *The Philosophical Review* 60, 20–43.
- Robinson, J. (1956). *The Accumulation of Capital*. Homewood, Illinois: Richard D. Irwin Inc.
- Robinson, J. (1962). *Essays in the Theory of Economic Growth*. London: The MacMillan Press.
- Ryoo, S. (2015). Inequality of Income and Wealth in the Long Run: a Kaldorian Perspective. University of Massachusetts Amherst, Department of Economics Working Papers Series 2015-09.
- Samuelson, P. A. (1962). Parable and realism in capital theory: the surrogate production function. *The Review of Economic Studies* 29(3), 193–206.
- Sayer, A. (1984). *Method in Social Science: A Realist Approach*. London, UK: Hutchinson.
- Schumpeter, J. (2011 [1934]). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Social Science Classics. Piscataway, NJ: Transaction Publishers. introduction by J.E. Elliott.
- Sen, A. (1963). Neo-Classical and Neo-Keynesian Theories of Distribution. *Economic Record* 39(85), 53–64.
- Serrano, F. (1995). Long period effective demand and the Sraffian supermultiplier. *Contributions to Political Economy* 14, 67–90.

- Serrano, F., F. Freitas, and G. Bhering (2017). The Trouble with Harrod: the fundamental instability of the warranted rate in the light of the Sraffian Supermultiplier. Grupo de Economia Política do Instituto de Economia, Federal University of Rio de Janeiro, Discussion Paper 018-2017.
- Shaikh, A. (2009). Economic policy in a growth context: a Classical Synthesis of Keynes and Harrod. *Metroeconomica* 60(3), 455–494.
- Skott, P. (2010). Growth, Instability and Cycles: Harroddian and Kaleckian Models of Accumulation and Income Distribution. In M. Setterfield (Ed.), *Handbook of Alternative Theories of Economic Growth*. London, UK: Edward Elgar.
- Skott, P. (2012). Theoretical and Empirical Shortcomings of the Kaleckian Investment Function. *Metroeconomica* 63(1), 109–138. Special Issue on Kaleckian Growth Theory.
- Skott, P. (2017). Weaknesses of 'wage-led growth'. *Review of Keynesian Economics* 5(3), 336–359.
- Skott, P. and B. Zipperer (2012). An empirical evaluation of three post-Keynesian models. *European Journal of Economics and Economic Policies: Intervention* (2), 277–308.
- Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics* 70(1), 65–94.
- Sonnenschein, H. (1972). Market Excess Demand Functions. *Econometrica* 40(3), 549–563.
- Sonnenschein, H. (1973). Do Walras' identity and continuity characterize the class of community excess demand functions? *Journal of economic theory* 6(4), 345–354.
- Steedman, I. (1992). Questions for Kaleckians. *Review of Political Economy* 4(2), 125–151.
- Steindl, J. (1952). *Maturity and Stagnation in American Capitalism*. Oxford: Basil Blackwell.
- Taylor, J. B. (1980). Aggregate Dynamics and Staggered Contracts. *Journal of Political Economy* 88(1), 1–23.

Taylor, L. (2004). *Reconstructing Macroeconomics: Structuralist Proposals and Critiques of the Mainstream*. Cambridge, MA: Harvard University Press.

Taylor, L. and F. J. Lysy (1979). Vanishing income redistributions: Keynesian clues about model surprises in the short run. *Journal of Development Economics* 6(1), 11–29.

Zezza, G. (2009). Fiscal policy and the economics of financial balances. (569). Levy Economics Institute Working Paper No. 569, Levy Economics Institute of Bard College.

Impressum

Publisher: Hans-Böckler-Stiftung, Hans-Böckler-Straße 39, 40476 Düsseldorf, Germany

Contact: fmm@boeckler.de, www.fmm-macro.net

FMM Working Paper is an online publication series available at:

https://www.boeckler.de/imk_108537.htm

ISSN: 2512-8655

The views expressed in this paper do not necessarily reflect those of the IMK or the Hans-Böckler-Foundation.

All rights reserved. Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.