The Sraffian Supermultiplier and the Exogenous Growth Debate

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Abstract

In this chapter, we will discuss the recent criticism made by Blecker and Setterfield (2019) that the demand-led Sraffian Supermultiplier growth model is an undesirable turn towards exogenous growth theory. To do so, we discuss the meaning of endogenous growth in neoclassical theory and its meaning in demand-led growth models, with a focus on the latter. We clarify that endogenous growth in neo-Kaleckian models resorts to autonomous business investment, which is explained by economic factors such as distribution and competition. We argue that in the Sraffian Supermultiplier, by assuming that business investment is induced in the long run, autonomous business investment plays no role in determining the trend rate of growth, the latter depending on the evolution of autonomous but non-creating capacity components of demand. We also claim that the latter components (and distribution) can be partly endogenized within the model. Also, other determinants of the growth of autonomous demand are explained by factors, that are exogenous to the supermultiplier mechanism, but have definite economic and political determinants,depending on power relations and the institutional setup. Finally, we discuss to what extent, according to the Sraffian Supermultiplier theory, distribution can exert an indirect influence on demand-led growth via economic policy.

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[1] Draft prepared for the Handbook of Alternative Theories of Economic Growth, Second Edition, edited by Mark Setterfield.

The Sraffian Supermultiplier and the Exogenous Growth Debate

> "'my criticism of capitalism goes even further than that of Karl Marx. Marx took an expansion of capitalism for granted, whereas I think that you have to explain this by some exogenous factors'" Kalecki,M. in: Kowalik, 2003, p. 50

1   Introduction

In the demand-led Sraffian Supermultiplier growth model, functional income distribution is determined separately from output (along Sraffian lines), and business investment is a fully induced expenditure. In this model, thus, the distributive setup and the degree of competition play no systematic role in the trend rate of growth of the economy, which is driven by the expansion of autonomous components of demand that do not create productive capacity for the business sector (Serrano, 1995, Freitas and Serrano, 2015). This feature of the model was criticized by Blecker and Setterfield (2019), as they claim that this is an undesirable turn towards exogenous growth theory.

In this chapter, we will address this criticism made by Blecker and Setterfield (2019). We will discuss the meaning of endogenous growth in neoclassical theory and its meaning in demand-led growth models, with a focus on the latter. We will clarify that endogenous growth in neo-Kaleckian models relies on autonomous business investment, which is explained by economic factors such as distribution and competition[2]. We will argue that since the Sraffian Supermultiplier assumes induced business investment in the long run, autonomous business investment plays no role in determining the growth trend of the economy, the latter depending on other autonomous but non-creating capacity

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[2] When we use neo-Kaleckian in the paper we are referring to those canonicals models in which business investment is (at least in part) autonomous and the equilibrium degree of capital utilization is endogenous to the equilibrium growth rate of the economy. We are thus not referring here to the 'neo-Kaleckian Supermultiplier' models with non-capacity creating autonomous components of demand and a mechanism of adjustment of actual degree of utilization to an exogenous normal degree of utilization, as Allain (2015) and Lavoie (2016).

components of demand. On the other hand, we will suggest that the latter components (and distribution) can be partly endogenized within the model. Also, other determinants of the growth of autonomous demand are explained by factors, that are exogenous to the supermultiplier mechanism, but have definite economic and political determinants, depending on power relations and the institutional setup. We will clarify that what is considered as exogenous growth drivers in the theory is what is left with no closed explanation within the theory, instead of being reduced to a single mechanical rule, to accommodate different institutional and political elements that can influence the trend rate of growth. Finally, we will reflect on what extent, in the Sraffian Supermultiplier theory, distribution can exert an indirect influence over demand-led growth through economic policy.

The rest of the chapter is organized as follows. In section 2 we will address the neoclassical exogenous growth debate and the relation with heterodox demand-led growth models. We then proceed in section 3 to criticize the role of autonomous business investment as determinant of the trend rate of growth from the Sraffian Supermultiplier perspective. In section 4, we will discuss possible economic and political explanations for the growth rate of autonomous non-capacity creating demand (as well as its constraints). In section 5, we reflect on the extent to which distribution can indirectly affect demand-led growth via economic policy. The last section contains brief final remarks.

2 The exogenous growth debate

The 'exogenous growth debate' refers to developments in neoclassical growth theory. This theory primarily attributes the trend growth rate of output to supply-side factors, such as the evolution of the quantity of factors of production and productivity. The seminal model within this tradition was proposed by Solow (1956), which posited that growth relies on the exogenously given growth rates of the labor force and productivity. While this model can be viewed as an initial approximation, it also paved the way for further research into the economic determinants of productivity and population growth, a view supported by Solow himself (1992). However, it has been commonly labeled in the literature as an 'exogenous growth model' due to one of its outcomes: an increase in the saving rate affects

the level of output permanently, but, due to diminishing returns to capital accumulation, does not have a permanent impact on the growth rate of output.

This result was considered undesirable by several authors, as there is a strong empirical correlation between the growth rate of output and the investment rate—a significant stylized fact in the empirical analysis of long-term growth trends. This dissatisfaction played a crucial role in propelling the development of neoclassical models of endogenous growth (see Solow, 1992; Cesaratto, 1999a, 1999b). The idea of the latter models was thus to find some role for the propensity to save (or for other decisions affecting the availability of reproducible factors of production through time) to affect growth.

The assessment of this debate from a Sraffian standpoint was presented in Cesaratto and Serrano (2002), where it is argued that neoclassical endogenous growth theory shares with the exogenous growth all the shortcomings of the marginalist explanation of the levels of output, employment and income distribution and add a number of assumptions about externalities. Those extra assumptions are required in order to mitigate the intrinsic tendency towards decreasing marginal returns to capital accumulation in full employment models and are completely ad-hoc.

On the other hand, the Sraffian Supermultiplier provides the analytical result that the investment share in output is positively related to growth (Freitas & Serrano, 2015), and some empirical evidence confirms this property of the model (Girardi & Pariboni, 2020; Haluska et al., 2021). Moreover, according to the model, and the empirical evidence, the causality runs from the opposite side as that of neoclassical endogenous growth models: it is the growth rate that explains the investment share.

The meaning of 'endogeneity' within heterodox demand-led growth theory cannot but be very different from that which it has in the neoclassical resource contrained gowth theories, as noticed by Roberts and Setterfield (2007)[3].

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[3] "The distinction between supply-led (neoclassical) and demand-led (Keynesian) growth theory is every bit as important as the distinction between exogenous and endogenous growth theory, and the existence of

According to them, for demand-led growth models, we would have three possible definitions for endogenous growth in demand-led growth theory: (1) "the rate of growth is determined by the (equilibrium) solution of the growth model itself, rather than being imposed upon the model from without" (Roberts & Setterfield, 2007, p.15); (2) "technical progress is explicitly modelled, rather than being treated as exogenously given 'manna from heaven'"; (3) "the enterprise that seeks to analyze growth as a historically contingent process, eschewing traditional equilibrium analysis in favour of organizing concepts such as cumulative causation, lock-in, hysteresis and evolutionary change as the basis for growth modelling" (Roberts & Setterfield, 2007, p.23).

We believe that Blecker and Setterfield (2019) had in mind the definition (1) when they criticized the Sraffian Supermultiplier as an exogenous demand-led growth model. First, because there are Sraffian Supermultiplier models with explicit endogenous productivity growth (e.g., Nah and Lavoie, 2019), and also neo-Kaleckian models with exogenous (or zero) productivity growth. Second, the post-Keynesian literature recognizes that the Sraffian Supermultiplier has important consequences for the analysis of traverse (Lavoie, 2016, p. 183) and hysteresis (Serrano et al., 2020; Fazzari & Gonzalez, 2023). Finally, because the neo-Kaleckian theory is understood as endogenous in the sense of definition (1) because the functional distribution of income affects growth (Roberts & Setterfield, 2007, p. 21). Since income distribution can be explained by changes in economic behavior (e.g., as a result of conflicting claims over income distribution), the Neo-Kaleckian theory is considered endogenous. The same can be extended, for example, to animal spirits, which is important to growth in the latter theory and can be explained by economic behavior, e.g., competition. Thus, since the solution of the neo-Kaleckian growth model depends on distribution and competition as explained by economic behavior, while the solution of Sraffian Supermultplier depends on the autonomous demand that does not create capacity, which seems to be considered by Blecker and Setterfield to be imposed

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demand-led or Keynesian endogenous growth theory must be taken into account if the full meaning and variety of endogenous growth theory is to be properly understood." (Roberts and Setterfield, 2007, p.16)

upon the model from without, the former solution is considered by them as endogenous while the latter as exogenous.[4]

3   Autonomous versus induced business investment

As we discussed in the last section, the neo-Kaleckian theory sees distribution and animal spirits as important sources of growth. The channel through which these variables impact growth is via autonomous business investment. If we go deep into the explanations of distribution, a change in the institutional setup, which can change the bargaining power of workers (e.g., such as unions, labor laws, the minimum wage, and other social policies), will have a direct effect on growth through autonomous investment. The main difference between the two demand-led growth theories, the neo-Kaleckian and the Sraffian Supermultiplier, in the end, regards the acceptance or not of the impact of autonomous investment in the **long-run, or trend, growth.**

For the Sraffian Supermultiplier theory, the determination of the levels of capacity-creating investment by firms is seen as totally induced by demand in the long run. Undesired underutilized capacity is expensive, and firms as a whole are compelled by capitalist competition not to invest too much relative to demand. On the other hand, when demand increases, firms will not want to lose market share and thus are bound to increase investment (Garegnani (2015[1962], pp. 12-3). Competition impels firms to invest to try to adjust capacity to the trend of demand, both at the sectoral and aggregate levels

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[4] When we pass from the theory to closed models, however, it is necessary to have exogenous variables. The two variables mentioned above, distribution and animal spirits, were taken as exogenous as a first approximation in many neo-Kaleckian models. Some developments to endogenize them were made in the neo-Kaleckian literature, e.g., distribution was explained by an endogenous variable, the employment rate, and a set of institutional variables, such as unions, labor laws, the minimum wage and other social policies, which are considered exogenous in the model (Blecker & Setterfield, 2019; Hein, 2023). This was noticed by Setterfield and Roberts (2007, p.23), because "according to these definitions, rendering growth 'endogenous' would seem to amount to little more than taking what was once treated as exogenous (technical progress, or even the growth rate itself) and describing it in terms of foreclosed explanation in terms of other exogenous givens".

(Serrano, 1995; Freitas & Serrano, 2015; Serrano & Freitas, 2017). In other words, gross business investment is driven by the capital stock adjustment principle (Matthews, 1959; Freitas, 2022).

Therefore, the more persistent levels of output explained by effective demand determine, through the normal capital-output ratios, the desired capital stock of firms and govern their gross capacity-generating business investment. The relevant normal capital-output ratios for the different capital goods and sectors depend on the technical capital-output ratio and the normal or planned degree of capacity utilization (Ciccone, 1986; Freitas, 2022; Haluska et al, 2023).

As a consequence of considering business investment induced, income distribution will have no significant direct role in the determination of the volume of investment in a longer period. For example, a negative effect of a persistent reduction of the profit margins on the expected profit rate of new investments cannot be attenuated by aggregate demand expansion, as in the case of existing installed capital stock, since the rise in capacity utilization rate is by its nature temporary.[5,6]

This occurs because capitalist competition would prevent business firms from investing in such a way to intentionally install excess capital stock in relation to the expected effective demand. On the other hand, real or potential competition from other business firms also prevents persistent under-sizing of the capital stock in relation to expected demand, since, in this case, firms would risk losing market share to incumbent firms and/or new entrants. Competition thus pushes firms to invest, attempting to make the

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[5] Some "neo-Kaleckian" authors believe that it would be possible in what they call wage-led growth regime that the realized profit rate would increase permanently because of a drop in profit share, in what has become known as the "paradox of costs". In this case, the actual degree of capacity utilization should increase relatively more than the fall in the profit share and stabilize in this higher level.

[6] The "paradox of costs" would depend on the hypothesis that the effect of the increase in workers consumption on investment is sufficiently large in order to compensate the negative effects over the amount of aggregate profits, and would only happen in an economy in which the productive capacity remains always over-dimensioned and business firms as a whole would never be capable of adjusting productive capacity to aggregate demand. For a theoretical criticism of this view see Serrano (1995), Serrano and Freitas (2017).

actual degree of capacity utilization rate tend to its normal or planned level (that is, the one that minimizes costs, taking into account the necessary margins of planned spare capacity). For these reasons, the expected profit rate in new investments will be what is known as the normal profit rate, that is, the one obtained at the normal or planned degree of capacity utilization. The reduction in profit margins that results from real wages increasing more than productivity growth directly reduces the normal profit rate, and, therefore, also lowers the general rate of profits that can be expected on new investments, regardless of the expansionary effect of these higher real wages on aggregate demand and output levels.

But the fact that the long-run effect of a rise in wage share has on decreasing the normal profit rate and, thus, on the expected profitability of new investments does not mean, contrary to what may seem at first sight, that the level of investment will be reduced because of this change in functional income distribution. On the contrary, in this case, competition between firms will lead to an increase in the level of investment to match the size of the capital stock with the higher levels of aggregate demand which came from higher workers' consumption described above. In this view, profitability (profit margins or profit rate at normal utilization rates of capital stock) is a constraint and not a determinant of investment. If expected profitability remains above a certain minimum level given by the interest rate plus a risk premium, changes in gross or net profit margins will not directly affect the amount of business investment.[7]

Two additional implications follow from these broad theoretical principles, which are worth mentioning here. First, as the profitability reduction does not diminish the levels of business investment, policies that attempt to directly stimulate investment through increases in net profit margins - such as business tax cuts and reductions in investment costs (for example, a decrease in the real interest rate), or exchange rate devaluations which allow higher profit margins for business firms in the tradable sector – do not by themselves have a direct positive and persistent effect on investment, since if they are not accompanied by a perspective of aggregate demand expansion, they do not make it

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[7] Note that persistent reductions in the level of the real interest rates decrease the lower bound of financial and opportunity cost of investment.

necessary to expand the productive capacity of business firms. And to the extent that some business firms, by chance, actually expand their investments only because the expected profitability has increased, without an increase in the expected demand for their products, the effect will be the creation of costly and undesired idle productive capacity which certainly will reduce the actual profitability of these business firms and would probably lead to a subsequent contraction of investment.[8]

A second implication of this view of business capacity creating gross investment as a derived magnitude is that it leads to a reconsideration of the role of credit as a determinant or, more precisely, as a constraint on investment. Since investment creates productive capacity, the amount of credit approved or borrowed to finance investment projects cannot reasonably be seen as totally independent from expected demand. In general, the amount of investment will depend on which one is the most pessimistic, the expectations about demand of the business firm or of the bank that will finance the investment project. Evidently, during a major short-run financial crisis, aggregate investment is affected by financial conditions. For instance, it is highly unlikely that business firms fearing imminent bankruptcy will not postpone their expansion plans. However, even these effects are extremely asymmetrical since the higher availability of credit for investment does not by itself create expected levels of effective demand in the future and, thus, would not justify the expansion of productive capacity. Finally, it is worth emphasizing that business firms are extremely heterogeneous relating to their financing constraints: small firms, in general, tend to face some difficulties in financing all their desired investment projects. But for large business firms (especially transnational ones) in general, the limits regarding profitable demand are much more important than financing constraints. Moreover, in the aggregate, it is highly unlikely that the investment opportunities lost by small firms due to finance constraints are not mostly taken by larger firms, in a context of perspectives of generally expected and actual demand expansion. Therefore, except in very short-run intense financial crisis situations, the role of credit constraints seems much more important to define the evolution of the size distribution of firms and particularly

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[8] These are the elementary criticisms to the profit-led growth regime models, in which business investment would be strongly and permanently affected in the long run by some indicator of profitability (like profit margin, share or normal rate).

who will invest and not so much about how much the total business investment will be either in a sector or in the aggregate (Serrano, 2001).

Elements other than income distribution, which impacts autonomous capacity-creating business investment, also cannot generate **sustained growth** by itself from this perspective. Autonomous increase in optimist "animal spirits" or waves of innovations will impact investment and output (and temporary growth), but the important point is that capital stock adjustment tends to correct such exogenous shocks over time according to actual experience (Cesaratto et al., 2003).

Summing up, income distribution and competition are the main growth drivers in neo-Kaleckian theory, and, according to the latter theory, they exert their influence on the trend rate of output growth through their effect on business investment. In the Sraffian Supermultiplier theory, however, private investment is essentially an induced expenditure in the analysis of the trend growth rate. Therefore, income distribution and competition can only affect the trend rate of output growth via their influence on the pace of expansion of non-capacity creating autonomous expenditures.

4 On the exogeneity of the non-capacity creating Autonomous components of demand

In the Sraffian Supermultiplier theory, the trend rate of growth of output depends on the evolution of the autonomous components of demand that do not directly create capacity for the capitalist sector of the economy. In the baseline Sraffian Supermultiplier models, these variables are grouped and treated as exogenously growing at a given rate. In more recent works, however, there has been an effort to explain the determinants of such expenditures based on more fundamental economic and policy factors (Serrano et al., 2023).

Autonomous expenditures are those that fulfill two requirements. First, they are *not* financed by the purchasing power introduced in the circular flow of income of the economy by current capitalist production decisions (Serrano, 1995a, p. 71). Secondly,

they have components that do *not* depend, in a general and regular way, on capitalist production decisions over time. The first requirement above excludes from the definition of autonomous expenditures the expenses financed by the contractual (wage and salary) incomes generated by production decisions and includes all those expenses financed by credit relations, past accumulated wealth, and income transfers (e.g., from the government).

Notice that capitalist business investment satisfies the first requirement, although, as we saw in the last section, it is considered an induced expenditure in the Supermultiplier theory. The reason is, of course, that capitalist business investment does not satisfy the second requirement above. The general and persistent influence of capitalist competition on these investment expenses implies that the behavior of these expenses depends on the evolution of output over time, as captured by the capital stock adjustment principle discussed in the last section.

From the supply-side viewpoint, capitalist business investment creates capacity for the capitalist business sector of the economy. The capital stock adjustment principle promotes a tendency for the reconciliation between the productive capacity of the capitalist sector and the demand for its production at a normal degree of capacity utilization. It follows that, after the exclusion of capitalist business investment from the expenditures classified as autonomous, what remains is the autonomous demand that does not create capacity for the capitalist business sector of the economy. As already suggested, these autonomous demand components are the main transmission mechanisms for the more fundamental growth drivers of the expansion process of capitalist economies according to the Sraffian Supermultiplier theory.

Among these 'non-capacity creating autonomous expenditures', we find household´s residential investment, discretionary business expenditures that do not generate capacity (as expenditures in research and development, for instance), consumption financed by credit, the discretionary consumption expenditures of the wealthy, government expenditures (including government investment), the part spent of consumption of government transfers to households, and exports. These expenditures have multiple determinants that reflect economic, social, political, and institutional forces. However, they have in common the fact that they represent fresh autonomous injections of

purchasing power in the economy and are, at least partially, independent of the level and pace of expansion of output over time.

Autonomous demand components such as residential investment or consumption financed by credit may, for instance, depend on the relevant interest rates, and exports depend on many economic variables such as price and non-price competitiveness and the levels of output of other countries. This would then raise the interesting question of whether a non-capacity creating component of autonomous demand in this financial sense is also somehow related behaviorally to the level of output. The answer is that some such partial dependence can easily be included in the Supermultiplier framework, as long as the level of output and income are not seen as the *single* determinant of *all* autonomous non-capacity creating demand components of the economy, as this would imply that the whole of aggregate demand is exclusively endogenous to the level of output which, anyway, would be incompatible with the idea that output is determined by demand.

Any demand-led growth model will always have at least a part of a demand component that is autonomous and exogenous relative to output. The consequences of including such possible feedback effects between the level of output and some of the components of autonomous non-capacity generating demand can easily be seen in terms of our simple baseline Supermultiplier model, by making Z (taken here to represent total autonomous non-capacity creating demand) to depend, in part, on the level of output (measured by a parameter $\rho > 0$) and, in part, on other variables $\bar{Z}$.

(1) $Z = \bar{Z} + \rho Y$

The fully adjusted position of economy with equation (1) is:

(2) $Y^* = Y = \left(\dfrac{1}{1 - \rho - c - (v/u_n)(d + \bar{z})} \right) \bar{Z}$

where c is the marginal propensity to consume, v is the technical capital-to-output ratio, u_n is the normal degree of capacity utilization, d is the depreciation rate, and $\bar{z}$ is the exogenous (from the viewpoint of the baseline model) rate of growth of the non-capacity creating autonomous demand. The term within the parenthesis is the Supermultiplier in the fully adjusted equilibrium path of the baseline model.

From the above, we see that the presence of this endogenous element in autonomous non-capacity generating demand increases the marginal propensity to spend and the size of the supermultiplier (and, as we saw above, this would also reduce the rate of growth at which the model is dynamically stable) and the rate of growth of the economy would tend to be equal to the rate of growth $\bar{z}$ of the exogenous part of the autonomous non-capacity generating demand Z.

There are some examples in the literature of attempts to endogenize some components of autonomous demand. For example, fiscal policy rules – such as a balanced budget rule or a particular primary surplus (or deficit) target as a ratio of aggregate output – may endogenize government spending if, for instance, the tax rate (as a share of output) is also taken as given (Serrano & Pimentel, 2019). Another example would be the so-called repercussion effects on the exports of a large open economy because of the increase of its own level of output. This happens when the increase in output of the large economy increases the level of imports from another economy, and the corresponding increase in the economy`s exports leads to an expansion of its own aggregate demand and output, which, in turn, induces an increase of its imports from the large economy. The latter, of course, means an increase in the exports of the large economy, which, in fact, is an indirect effect of its own level of output. Thus, when repercussion effects are present, exports of the large economy are in part and indirectly affected by its level of output (e.g., see Portella-Carbo, 2016; Portella-Carbo & Dejuán, 2019).

Also, part of non-capacity creating autonomous demand that is not systematically related to output, $\bar{Z}$, are explainable by other economic variables. For example, non-capacity creating autonomous demand depends negatively on the real interest rate, reflecting the idea that the monetary policy can influence credit-financed expenditures on durable goods consumption and residential investment (Serrano et al., 2020; Deleidi & Mazzucato, 2019). Financial elements and feedback from indebtedness to autonomous demand expansion were included in the Sraffian Supermultiplier by Pariboni (2016), Mandarino et al. (2020), Freitas and Christianes (2020), Hein and Woodgate (2021), Teixeira and Petrini (2023) and Pedrosa et al. (2023).

Also, the growth rate of the economy can be limited by the balance of payments constraint. When this constraint is binding, the government will have to take measures to

slow down the growth of demand to control the loss of foreign reserves and guarantee the sustainability of the path of the external debt (in foreign currency) of the economy, as discussed in Bhering et al. (2019), Dvoskin and Torchinsky (2022 and 2023), and Morlin (2022).

Growth may also be constrained by several institutional economic policy rules, particularly fiscal policy. The need to comply with such may be central to understanding the rate at which government spending and transfers, very important determinants of autonomous demand, are allowed to grow not only in the short run but also for longer periods (Summa, 2024). This is an essential topic in the growing Supermultiplier literature, and many contributions are now available. Among them, Allain (2015) and Serrano and Pimentel (2019) examined long-run growth under balanced budget rules, and Freitas and Christianes (2020) and Aspromourgos (2014) looked at internal debt sustainability issues. Dutt (2019) and Ligiéro et al (2021) deal with rules requiring primary surpluses. Morlin (2022) discusses fiscal rules to simultaneously stabilize internal and external debt. Finally, Serrano and Braga (2022) discuss rules for planning the expansion of government spending and a possible cap on interest payments on public debt. In all these papers, the central theme is that the rate at which the economy grows will not be independent of the rules and targets set for fiscal policy, even in the long run.

Other important policy constraints on demand-led growth following the Supermultiplier approach may come from the perceived need to control conflict or cost-push inflation, whether or not a formal inflation targeting regime is adopted. As an example of this type of policy constraint on growth, Serrano (2019) combined a conflict-augmented Phillips curve with a simple Supemultiplier model to show that policies of controlling demand to generate enough unemployment to moderate wage claims may have permanent negative effects on the long run rate of growth of both actual and potential output. Inflation targeting as a policy constraint will impact the economy depending on the effect of an

unemployment reduction on the relative bargaining power of the different social classes (see also Morlin and Pariboni, 2023)[9].

We thus consider the analysis of policy-constrained growth using Supermultiplier models as the most promising route to analyze the impact of political and social forces and institutional aspects on economic growth. (c.f., in particular, Morlin, Passos & Pariboni, 2022). In fact, recently, there has been an enriching debate among post-Keynesians economists and authors of the comparative political economy literature regarding the importance of economic policy for growth, as well as the social and political forces that influence the experiences of growth in different countries (Baccaro & Pontusson, 2022; Stockhammer & Kholer, 2022; Morlin et al, 2023; Hein, 2023b).

The openness of the analysis based on the Sraffian Supermultiplier for dealing with different institutional and political elements derives directly from the fact that, in the mechanism of the model, the levels and growth of autonomous demand are "exogenous" instead of being reduced to a single mechanical rule. Therefore, we consider this a positive feature of the model.

5   Distribution, 'political aspects' and growth

In the Sraffian Supermultiplier model, 'policy' thus affects the trend growth rate of output via autonomous components of demand that do not create capacity. This seems to be the crucial difference with the alternative demand-led neo-Kaleckian growth theory, where 'policy' affects growth through autonomous investment. While the latter sees a direct systematic impact of some measure of profitability on business investment of firms, policies that change distribution will have a systematic impact on trend growth, in the

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[9] See also Summa (2016) for a Sraffian Supermultiplier model with inflation targeting in which this policy rule can constrain growth depending on external factors, such as world inflation and international interest rates.

Sraffian Supermultiplier, on the other hand, there is no general and regular relationship between policy, distribution and growth.

This does not mean, however, that distribution will always be unrelated to growth from the Sraffian Supermultiplier perspective. The fact that reductions in the expected profitability (normal profit rate) do not tend to affect the size of private investment which creates productive capacity does not mean that entrepreneurs will not become unhappy with the fall in the expected and realized profitability, caused by increases in real wages higher than productivity growth. But, as Kalecki said, 'capitalists do not invest as a class', and any individual capitalist firm who refuses to invest because the expected profit rate has fallen (but it is still above the opportunity cost of capital) will be giving up the best opportunity still available to earn profits and allowing its rivals to take its previous market share. In this context, the best available alternative for the firms is to continue investing as demand expands. At the same time, capital owners can organize themselves as a class to convince the government to adopt economic policies that help to compensate or even to revert the undesirable distributive change. And the degree of success of this kind of initiative depends strictly on political, not economic, factors.

Therefore, we argue that we can think about an indirect channel in which distribution can affect growth. This indirect channel involves the effects of political forces and class conflicts on the decisions concerning the rules and the stance of the government's economic policies.

These latter considerations are related to the contributions made by Kalecki (1943) in his famous paper about the political aspects of full employment, in which he had foreseen that economic policies that eventually reduce the unemployment rate and strengthen workers' bargaining power may be reverted due to the growing opposition of the property-owning class that could end up persuading the government to change the direction of the economic policy stance.

Notice that according to Kalecki, this opposition would *not* manifest itself directly through the reduction of business investment, but by shifting economic policies towards

austerity, which would end up affecting capitalist investment indirectly.[10] These kinds of policies would slow down the growth rates of effective demand and reduce the degree of capacity utilization, and only then affect business investment.[11,12]

In the last paragraph of Kalecki (1943), the author said that if someday the capitalist countries could adapt their social and political institutions to the conditions of more or less permanent full employment and the consequent growth of the workers´ bargaining power, a most "fundamental reform" would have then occurred to capitalism. When Kalecki returns to the discussion of political aspects of full employment in a 1971 paper (Kalecki & Kowalik, 1971) he explores exactly the last point of his earlier work. The success of this post-war compromise makes him coherently argue that, indeed, there has been a "crucial reform" in the capitalist countries. According to Kalecki, the capitalist countries had "learned the trick" of avoiding crises and the disorder of unregulated capitalism through government intervention, which would explain the good economic

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[10] Notice that our view is different from the one proposed by Streeck (2011), who sees a direct economic reaction from entrepreneurs against the expansionary and progressive economic policies via autonomous investment. Streeck (2011) believes that this reaction (the 'Kaleckian reaction' as he calls it) materializes as an 'investment strike' motivated by purely political reasons, which would lead the economy directly toward a recession. The idea of an 'investment strike' is a highly implausible one since it requires a total and coordinated suspension of capitalist competition, that is, an agreement among all the business firms, which must give up profitable opportunities of investment for political reasons while trusting that all their rivals will do the same. In Kalecki (1943), there are no references to such a thing as an "investment strike." The only textual evidence presented by Streeck is part of a sentence in which Kalecki mentions that investment depends on the capitalists' "state of confidence." But even in this excerpt, Kalecki seems only to be explaining that capitalists do not want the government controlling the level of employment of the economy with public spending because this would weaken the political power of the capitalist class over the government policy agenda and the workers. In our opinion, this notion of "investment strike" in no way represents what Kalecki says in his seminal article, as the author makes it clear in the whole paper that investment only falls when the economy slows down because of the change in economic policy stance.

[11] There are many differences between the Sraffian and Kaleckian views about the determinants of income distribution and investment, such as the impact of nominal wages on real wages (which Kalecki considered quite limited), and from real wages to the expected profitability of investment (which he also considered quite limited because for him investment would depend on the realized profit rate, which would not be much affected by an increased wage share).

[12] For a criticism of Kalecki's view on investment from the Sraffian standpoint, see Petri (1993). However, for our purposes, what interests us is that Kalecki believed that progressive economic policies would be contained by a political reaction from the capitalist class, and not directly by a fall in private investment.

performance of the capitalist economies in the post-Second World War (i.e., the so-called 'Golden Age of Capitalism'). At the end of this article, however, Kalecki draws attention to the fact that the relative stability of reformed capitalism depended crucially on a high degree of "social conformism" and that this perhaps was beginning to change with the contestation led by social movements that started in the late sixties – although in his view this contestation did not seem to threaten the existence of capitalist property.

Based on the intellectual background of these two Kaleckian works, Kowalick (2003, p. 48) reflects on the end of the Golden Age of Capitalism by saying that "the Kaleckian explanation of the long downturn seems to be very simple and fully symmetrical to the explanation of the long upturn: Kalecki would most probably say, that the essence of 'crucial reform' was the successful governance of overall demand. Withdrawal of this type of state intervention or its radical reduction must have caused a return of strong business fluctuations and hence a decline in the rate of economic growth. I would like to mention some evidence showing that political rulers indeed acted in this direction and were prepared to pay the recession price for reducing inflation and disciplining the workers." (Kowalik, 2003, p.48)

In a similar perspective, Josef Steindl, also a Kalecki follower,[13] interpreted the end of the 'Golden Age of Capitalism' in advanced countries in this way:

> "[…] the internal stress of groups contending for shares in the national income have shown themselves as inflationary; instead of placating the masses by a steady increase in living standards, the aim has become to dampen their spirits by unemployment, which hits hardest at those who are considered to be the most unruly elements. The arguments against full employment have got the upper hand in the councils of the power, and thus we witness stagnation not as an incomprehensible fate, as in the 1930s, but stagnation as policy" (Steindl, 1976, p. xvii).

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[13] There are some differences between the theoretical analysis of income distribution and business investment in Kalecki and Steindl, but they do not interfere with the point in common that we want to stress here, namely that increases in wage share do not harm investment and the economic slowdown results indirectly from a political reaction to the intensification of the distributive conflict, by shifting the economic policy stance.

Also, in a similar vein, we have the analysis made by Garegnani and some of his associates (Cavalieri et al., 2008) about the end of the Golden Age of advanced economies after the Second World War. In this view, the intensification of the distributive conflict at the end of the sixties led to a rising wage share and a reduction in the expected and realized profit rates. But business investment, instead of falling, initially increased as a result of the positive effect of higher real wages over aggregate demand.[14]

The partial pass-through of wage increases led to higher inflation (even before the oil shocks) and, over time, to a political reaction to change the direction of economic policy towards austerity and inflation control, abandoning the previous priorities of rapid output growth and full employment which had been successfully followed by more than two decades. This change in the economic policy regime had the objective of generating enough unemployment to curb wage inflation and resolve the distributive conflict in favor of capital. Only after the adoption of these contractionary economic policies was aggregate demand growth reduced, which in turn induced a deceleration of business investment (Serrano, 2004).[15]

As we discussed above, capitalists do not act "as a class" to reduce investment if their profit margins and rates decrease as a result of growing real wages. But one thing they do as a class is to exert political pressure on the government to stop and, if possible, to revert to economic policies that generate social and distributive results that are unpleasant for them. Thus, we believe that the analysis of policy-constrained growth may lead to a more

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[14] Some "neo-Marxists" (see Marglin & Schor, 1990) try to mechanically associate the squeeze in profit margins to a reduction in the pace of investment by assuming that investment is a direct function of the level of the profit share. The fact that lower profit margins lead to lower normal rates of profit does not imply that the most lucrative option in this situation will be a reduction of investment and the size of productive capacity. The adequate size of productive capacity does not depend on the level of the normal rate of profit but on the size of the demand of those who can pay the prices that guarantee that the minimum normal profitability requirement is met, regardless of whether this normal rate is high or low. It is important to note that Marglin (1990: 19-20) himself admits that the fall in the profit share was not followed by a fall in the investment share, which only started to fall in the industrial countries many years later (he, however, attributes this discrepancy to a presumed non-observable divergence between the actual and expected profit share).

[15] For the same approach used to explain the end of the brief golden age of the Brazilian economy (2004-2014), see Serrano and Summa (2022).

satisfactory discussion of the political economy of growth (and stagnation) along the lines suggested by Kalecki (1943 and 1971), Steindl (1979), and Cavalieri, Garegnani & Lucci (2008). Our interpretation thus sees the possibility of 'policy' as an outcome of class and political conflicts within a society, affecting the trend rate of output growth through the pace of autonomous components of demand that do not create capacity for the capitalist business sector of the economy.

Notice that the view adopted here is quite different from the one proposed by Hein (2022). The author follows Steindl interpretation of a "'political trend' causing or contributing to stagnation" (Hein, 2022, p.5). However, contrary to us and following a neo-Kaleckian perspective, the transmission channel from austerity policies to growth is through autonomous investment. For him, stagnation policies can weaken animal spirits, change functional income distribution, and reduce internal means of finance, reducing trend growth via autonomous investment (Hein, 2022, p.15).Finally, observe that our viewpoint goes against the criticism of the Sraffian Supermultiplier put out by Michl (2009). According to him, by "[t]reating all investment as induced by demand growth demotes the entrepreneur to a supporting role in the drama of accumulation, while elevating the rentiers and politicians who control private and public autonomous consumption to the status of prime movers". However, as we argued, Capitalists, entrepreneurs, and rentiers can try to influence 'politicians' and actively participate, although more behind the scenes, in the drama of accumulation by influencing economic policy to make their interests prevail.

6   Final Remarks

In this chapter, we discussed the criticism made by Blecker and Setterfield (2019) that the demand-led Sraffian Supermultiplier growth model is an undesirable turn towards exogenous growth theory. We argued that the main difference between the two demand-led growth theories, the neo-Kaleckian and the Sraffian Supermultiplier, in the end, regards the acceptance or not of the impact of autonomous investment in the long-run, or trend growth, and not if they see growth as exogenous or endogenous. It is the acceptance of the importance of autonomous investment to explain the trend growth rate of output in

neo-Kaleckian theory which makes distribution and competition relevant in this theory, and identified as endogenous by the authors.

We argued that the same set of institutional and policy variables that affect distribution and competition, and directly and systematically the trend growth in the neo-Kaleckian model via autonomous investment, can influence growth in the Sraffian Supermultiplier in a more indirect way via non-capacity creating autonomous demand. We consider the openness of the Sraffian Supermultiplier for dealing with this set of policy variables in a non-mechanical way a positive feature of the model.

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