



Recent controversies on the Sraffian supermultiplier: the international and Brazilian debate

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EN Abstract. The present work provides a detailed investigation of how the Sraffian Supermultiplier (hereafter SSM) was developed, and the critiques around the theme. The theory initially presented by Serrano in 1995 and linked to the neo-Kaleckian approach by Lavoie (2015), was essentially based on the works of Sraffa and Garegnani. According to the last mentioned paper, the model is supported by autonomous consumption delivered from the rentiers side, which drives capacity utilization to its normal level. Therefore, some schools such as neo-Harrodians (like Skott), neo-Kaldorians (like Oreiro), and others, pointed out that this assumption does not fit the literature. In this vein, our investigation works on the historical development of the theory showing the evolution of the Supermultiplier in an international and Brazilian debate.

Keywords: Supermultiplier; neo-Kaleckian; History of Economic Thought

JEL Code: B10, B24

PT Controvérsias recentes do supermultiplicador sraffiano: o debate internacional e brasileiro

PT Resumo. O presente trabalho fornece uma investigação detalhada de como o Supermultiplicador Sraffiano (doravante SSM) foi desenvolvido e as críticas em torno do tema. A teoria inicialmente apresentada por Serrano em 1995 e vinculada à abordagem neo-Kaleckiana por Lavoie (2015), foi essencialmente baseada nos trabalhos de Sraffa e Garegnani. De acordo com o último artigo mencionado, o modelo é sustentado pelo consumo autônomo proveniente dos rentistas, o que leva a utilização da capacidade ao seu nível normal. Portanto, algumas escolas, como os neo-Harrodianos (como Skott), os neo-Kaldorianos (como Oreiro) e outras, apontaram que essa suposição não se encaixa na literatura. Nesse sentido, nossa investigação trabalha no desenvolvimento histórico da teoria, mostrando a evolução do Supermultiplicador em um debate internacional e brasileiro.

Palavras-chave: Supermultiplicador; neo-Kaleckiano; História do Pensamento Econômico

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ES Resumen. El presente trabajo proporciona una investigación detallada de cómo se desarrolló el Supermultiplicador Sraffiano (en adelante SSM) y las críticas en torno al tema. La teoría inicialmente presentada por Serrano en 1995 y vinculada al enfoque neo-Kaleckiano por Lavoie (2015), se basó esencialmente en los trabajos de Sraffa y Garegnani. Según el último artículo mencionado, el modelo está sustentado por el

¹ I would like to thank all the participants of the “UnB Webinar” and the “IX Encontro Científico do PPGE da UNESP” for their valuable comments and suggestions. I dedicate this paper to Professor Mauro Boianovsky (in memoriam) for his guidance. Obviously, they bear no responsibility for any errors or opinions presented herein. This paper does not reflect the political or theoretical views of the executive directors, member countries, or the presidency of the World Bank.

consumo autónomo proveniente de los rentistas, lo que lleva la utilización de la capacidad a su nivel normal. Por lo tanto, algunas escuelas, como los neo-Harrodianos (como Skott), los neo-Kaldorianos (como Oreiro) y otras, señalaron que esta suposición no se ajusta a la literatura. En este sentido, nuestra investigación trata sobre el desarrollo histórico de la teoría, mostrando la evolución del Supermultiplicador en un debate internacional y brasileño.

Palabras clave: Supermultiplicador; neokaleckiano; Historia del pensamiento económico

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Sumario: 1. Introduction. 2. The Sraffian Supermultiplier from Garegnani to the neo-Kaleckians. 3. The Recent Controversies around the Theory. 4. The Brazilian Debate. 5. Final Remarks. References.

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1. Introduction

Here we dealt with two objectives, the first one is to present the development of the SSM, which started with Serrano's (1995a and 1995b)¹. The author was inspired by the works of Sraffa (1960) and Garegnani (1962); their approaches look at both the demand and supply sides of the economy. The second one is to present the international and Brazilian debate around the theme. It is important to reach out to the importance and presence of Latin American researchers in the debate. On one side, we have a Brazilian working group formed by Serrano, Summa, Bhering, and others (neo-Sraffians) which are responsible to disseminate the idea of this framework. On the other side, Oreiro, Dávila-Fernández, Santos and other (neo-Kaldorians) Brazilian researchers who disagree with the long-term solution presented by the model, especially those who defend the ideas of New Developmentalism.

The origin of the Supermultiplier begins with Hicks (1950) and Harrod (1951 and 1965) by assuming that the investment has an accelerative behavior on Growth theory. This concept, to the post-Keynesian school, extends the original Keynesian multiplier by incorporating the role of autonomous demand component². Garegnani (1962) assumes that in premise, investment is determined independently of distribution of income which is an original Sraffian concept. This perspective, combined with the Keynesian view that demand drives long-term economic growth, highlights autonomous spending as the key element.

Thirlwall (1979) and McCombie (1985) demonstrate in their approaches that the only possible autonomous component should be exports (the only truly exogenous expenditure).

Therefore, Serrano (1995a, 1995b)³ assumes that exists an autonomous expenditure which came from the riches and, in his words, it is described as the contribution as an alternative result to the growth theory by considering both the demand and supply sides. According to him, the Supermultiplier results are:

- (i) long-period effective demand determines normal productive capacity, and (ii) autonomous component of final demand (those expenditures that are neither financed by contractual wage income nor can create capacity) generate induced consumption via the multiplier and induced (capacity creating) investment through the accelerator. (Serrano, 1995a, p. 1)

The last definition shows how the approach behaves and, in part, is closer to the definition presented by Hicks (1950) (see Wood, 2018)⁴. Nonetheless, according to McCombie (1985), the Supermultipliers type of model only works from an Open Economy perspective. This issue was not approached in Serrano's 1995 original article, but it is central to the international debate as we can see in Skott (2017).

However, this formulation has some important contributions to the neo-Ricardian⁵ theory, offering

¹ There is no intention to discuss the entire formulation of the Supermultiplier *per se* in this paper. Our focus is to clarify the contemporary discussion and demonstrate the most recent debate on the subject. In this sense, we are focusing on the recent literature and, at times, providing the reader with a summarized version of the origin of the SSM, from Hicks and Harrod to the present days, clarifying the interpretation of central concepts such as the autonomous component, capacity utilization, investment share, and so on.

² The autonomous demand component refers to the portion of total demand in an economy that is independent of the current level of income or output. There is a wide range of definitions regarding which components of the economy can be considered autonomous. Part of this paper presents a discussion on this topic, where some authors argue that exports, certain segments of high-income consumption, or non-modeled financial markets, among others, can be defined as autonomous components, depending on the perspective of the author or the economic school of thought.

³ The first appearance of the Sraffian Supermultiplier is in Serrano's Philosophical Dissertation, so called "The Sraffian Multiplier", defended in 1995.

⁴ Harrod (1951, p. 267) says: "16. Mr. Hicks's system total activity is related to autonomous plus induced investment by the ordinary multiplier principle in the short run; but in the long run it is related directly to autonomous investment by a 'Supermultiplier'", which agrees with Serrano's designed investment function: .

⁵ We are not differentiating the neo-Ricardians and Sraffians, since, in our view, they have important theoretical differences, but in this context, we are only looking to the critique of neoclassical economics, which are quite identical.

contributions in the long run perspective and capital accumulation. These accomplishments can be linked to the neo-Kaleckians⁶ and post-Keynesian line of thinking, as presented by Lavoie (2015). According to the last author, one of the central views tapped by these schools is that Autonomous Consumption (hereafter AC) guarantees the convergence of the capacity utilization to its normal level, but, it is important to emphasize that, for the neo-Kaleckians, this is not the central concern. To the neo-Kaleckians, the long-term utilization rate (desired) is endogenous rather than the natural capacity utilization rate (exogenous)⁷. The adjustment between the desired and natural utilization rates does create a steady-state equilibrium in a long-term perspective, between capacity utilization and investment share, which depends on the level of the autonomous component.

This argument was sustained by De-Juan's (2005) article, which tested the robustness of the model using computational simulation to prove that, in a long-run perspective, the AC does converge the capacity utilization to its normal level, agreeing with the theoretical results presented by Serrano, and reinforcing the Garegnani's ideas. Notice that De-Juan's simulation was defended in 1989, according to his Philosophical Dissertation, but it confirms the SSM mathematical formalization published in 1995 only. The first author mentioned here did not publish the paper until 2005 and updated the work quoting Serrano (1995a) as is presented in his conclusions.

The SSM became interesting to support the neo-Kaleckian model when Lavoie (2015) considered the autonomous demand in his article. This argument does contribute to both Kaleckian and Keynesian perspectives, since consumption is an important component of the demand-driven approach, especially when we consider the rentiers consumption part. For him, "there is no doubt that most post-Keynesians have not paid enough attention to the autonomous or semi-autonomous components of household consumption or household investment" (Lavoie, p. 197, 2015). Based on all these arguments, our intention here is to explain how the autonomous part can or cannot drive the economy, which is an important issue in this paper.

The AC is defined by Serrano (1995a, p. 1) as "lumping together both rentiers' consumption and the part of 'investment' that does not have any capacity generating effects", and since it does not create capacity, this component has to be independent of the income. This definition confronts the current one specified by literature. According to Rose (2018), the definition should be consumption related to the planned expenses of unemployed workers. In this case, the income automaticity is explained by considering that workers will not earn their income but

consume the one saved to survive. However, the SSM does not consider the workers' savings [see Serrano (1995a), Serrano and Freitas (2017), Lavoie (2015), and others] and assume that the AC could be a non-modelled financial market, government expenditures or exports (in the case of an Open Economy). Rose's definition is plausible but is by far to be the only one considered, Skott (2019) presents some possible alternatives, including foreign income defended by some Structuralism researchers. Nikiforos (2018) pointed out that such components hardly can be considered autonomous in a long-run perspective which creates serious problems in an empirical valuation.

In this vein, authors who defend Structuralism or the Harrodian Instability, have argued that the consideration of this autonomous component harms the theory and also guarantees the instability of the model. Skott (2019, p. 4) says: "In fact, it may be difficult to think of any consumption component of the rich that is truly autonomous"; for him, all consumption depends on income. According to his point of view, these components, except for the government activities and foreign income, are extremely volatile and hardly could stabilize the economy. Each one of these mechanisms will guarantee the Harrodian Instability [see Skott, Santos and Oreiro (2022)]. The international and Brazilian debate around the SSM is the core of this paper.

This paper is divided into five sections: the first one is this introduction, which presents the objectives and justification of the research, by briefly presenting a historical overview which is expanded below. The second one shows the historical evolution of the SSM and the link with the neo-Kaleckian approach. The third part presents the critiques around the AC component and the debate started by Skott (2017). In the fourth part, we present Brazilian theoretical and empirical economic discussion. The final section is to discuss grounded on the historical perspective.

2. The Sraffian Supermultiplier from Garegnani to the neo-Kaleckians

Garegnani (1962) explored in his theoretical approach the determination of the aggregate product over time and connected it with the theory of accumulation developed by Sraffa (1960). The latter, re-started to look at to surplus concept⁸, which re-constructs the theory of distribution and the relative prices based on the classical synthesis. On one hand, he looks to the productivity side, on the other, Garegnani shows that both (aggregate production and accumulation processes) are driven by demand, showing a long-run perspective of the effective demand delivered by Keynes and Kalecki. His central work is to understand the development problem of

⁶ The neo-Kaleckian approach started with the works by Rowthorn (1981) and Dutt (1984), by considering that the capacity utilization does not necessarily is in its normal level in the short and medium period. In light of this, they claim that the investment function is defined by the capacity utilization and profit-rate. The post-Kaleckian approach started by the work of Bhaduri and Marglin (1990), defining that the neo-Kaleckian model only could define their investment function when the capacity utilization is in its normal level, and this function is defined by the capacity utilization and the profit-share. A synthesis of both theories can be found in Hein (2014), Chapter 6.

⁷ It is the rate that the productivity capacity is fully utilized, balancing supply and demand. This concept is related to potential output and is used to access efficiency of an economy.

⁸ Sraffa shows that the assumption of perfect competition must be disregarded and looked at to the monopolistic digression which produces a surplus in the economy. For this theme, we do recommend Obrinsky (1983) book CH 8 named "Sraffa and the Surplus Revival".

Italy and can be found in the SVIMEZ 1962 report. He was concerned on how the effective demand can explain the limited growth of the country, proposing that the Sraffian Surplus theory is an alternative to overcome such a problem and these concepts was central to Serrano's Philosophical Dissertation.

It is obvious that the contact with Professor Garegnani was extremely important to develop Serrano's framework, as he presents in his Philosophical Dissertation Acknowledgement section:

During the long gestation period of this work (its main ideas began to take shape in late 1989) I have been fortunate to have the help and support of several colleagues and friends. I would like to start by thanking Dr. G. C. Harcourt for his friendly and liberal supervision (and his detailed comments on a first draft of this work) and Mr. K. Coutts who was my Faculty advisor at Cambridge. I have benefitted from many stimulating discussions with Prof. P. Garegnani first in Cambridge and then later in Rome, where I also had very useful discussions with Prof. R. Ciccone. (Serrano, 1995b, Acknowledgement section)

As we can see, the author "drank from the fountain" to obtain his results. The approaches mentioned before the quotation analyze the effective demand by considering the surplus in the long run and criticizing the marginalist theory. Thus, to extend those contributions, Serrano (1995a, 1995b) presented the SSM, and his framework stands from two principals' assumptions. The first one is that the model works in a long-run perspective, where the effective demand determines the standard productivity capacity. The second considers part of the rentiers consumption as autonomous, which does not create capacity, and works with an investment accelerator. Those assumptions were delivered by the author, to solve the instability of the warranted growth rate presented by Harrod (1939)⁹, and Domar (1947). Studying both results, Cesaratto (2015) indicates that Harrod's problem was solved by the new result, but it was only possible in the case of considering the autonomous component of the theory. For him, p. 169; "Serrano approaches this question (Harrodian problem) by noting the surprising neglect of the autonomous/non-capacity-creating components of aggregate demand in the Post-Keynesian literature".

Nonetheless, it is only possible to understand the development of the Supermultiplier if the definition of Harrod's (1965, p.70) multiplier is clear, thus: "the ratio of increment income (= increment of output) required to make people save an amount equal to the increment of investment is called the Multiplier"¹⁰. Such a definition agrees with the Keynesian multiplier, where the determination of the income is faced with the savings rate, increasing economic activity.

In fact, according to Harrod's book, "Mr. Keynes" got it right about this definition. Kaldor (1940, p. 78), says: "that economic activities always tend towards a level where savings and investments are equal", which proves the point presented by Harrod.

This concept leads to the formal concept presented by Hicks (1950) about the Supermultiplier, which, for him, is a multiplier with accelerator characteristics. Such a view was used in the original formulation considering that expected autonomous demand is driven by the marginal propensity to consume and the accelerator came from the investment share. Thereby, the Hicks Supermultiplier, according to McCombie (1985)¹¹, works better when an Open Economy is considered. Determining the basis of the export-led growth theory. However, the SSM model only considers a closed economy, ignoring this fact.

The approach designed by Serrano assumes a long-run perspective and avoids the Harrodian Instability¹². To correct the level of investment-share to provide the balance between the natural and desired capacity utilization, solving the knife-edge problem, he proves the stability of the model, even considering excess capacity. His argument was structured in the following formulas:

$$Y = \min \left\{ \frac{K}{v}; \frac{L}{l} \right\} \quad (1)$$

$$DA = Y = C + I \quad (2)$$

$$C = Z + cY \quad (3)$$

$$I = hY \quad (4)$$

Where (1), (2), (3), and (4) are a Leontieff productivity function, Effective (aggregate) Demand, Aggregate Consumption, and Aggregate Investment, respectively. Z , c , h , K , v , L , l are the Autonomous Component, Marginal Propensity to Consumption, Investment Accelerator Mechanism, Capital Stock, Capital-Output ratio, Labor, and Labor-Output ratio, respectively. After some mathematical manipulations, the result is:

$$Y = \frac{Z}{1-c-h} \quad (5)$$

Where $\frac{Z}{1-c-h}$ is the Sraffian Supermultiplier¹³ and, in this case, the growth of the economy is provided by the autonomous component and the behavior of the accelerator mechanism, determining both product and aggregate demand level.

His result opened doors to extensions and empirical analysis. One important result was presented De-Juan (2005), which tested the model computationally, and proved that AC does converge the capacity utilization to its normal level. All the articles

⁹ Skott (2010) presents the resurgence of the Harrodian instability problem into the neo-Kaleckian debate. In his point of view, the model designed by Dutt (1984) does not guarantee a sustainable long-term growth since it is hard to prove that in this kind of model the capacity utilization will converge to its normal level, even considering steady-state values, producing an instability.

¹⁰ From this point of view, what we present is that the model consists of the Keynesian multiplier, see Keynes (1936, p. 166).

¹¹ "The most satisfactory basis of the export-led growth theory is the operation of the Hicks' Supermultiplier", McCombie (1985).

¹² The Harrodian Instability proposes that when investment is higher than the level that would allow normal capacity utilization, the actual growth rate is higher than the warranted growth rate.

¹³ The HSSM was presented, at first, by Serrano (1995a). However, Bortis (1997) also developed, independently, an identical result. Serrano and Freitas (2017) claimed his pioneering spirit.

presented above are responsible for the beginning of the SSM approach, therefore, the theme was forgotten in the first 2000' decade. However, it returned as an alternative to the neo-Kaleckian framework by Lavoie (2015). He updated Dutt's model by introducing the autonomous component and also showing the convergence of capacity utilization to its normal level. This contribution was inspired by Serrano and Freitas's 2015 paper.

The model was initially developed by Rowthorn (1981) and Dutt (1984) to analyze market imperfections (like Monopoly), unemployment of factors, and others. This approach explores such assumptions in the short, medium, and, in some cases, the long run, always considering the level of capacity utilization of less than one [see Amadeo (1986)], which differs from the Kaldorian perspective. The last standpoint assumes full capacity utilization and a perfectly competitive market. Many economists have defended the neo-Kaleckian theory as the most reliable alternative to post-Keynesianism, such as: Dutt, Lavoie, Hein, and Cesaratto, among others. However, the theory has been rigorously criticized, especially, by the neo-Harrodians, Structuralisms, and Neo-Kaldorians.

In defense of the perspective, Lavoie (2015) analyzed the stability of the adjustment of capacity presented by Serrano and Freitas (2015, 2017). The first author developed an alternative response to the criticism¹⁴, by considering the non-capacity creating autonomous expenditures. In such a paper, he also proved that the level of capacity utilization leads to its normal level and the Keynesian stability stands in the short-run. These results invalidate Skott's (2012) initial proposal, guaranteeing that the Harrodian instability does not present to be overly strong. According to Lavoie:

Some Sraffian economists have long been arguing that the presence of non-capacity-creating autonomous expenditures provides a mechanism that brings back the model to normal rates of capacity utilization, while safeguarding the main Keynesian message and without going back to classical conclusions. (Lavoie, 2015, Abstract)

His approach expands the canonical investment function delivered by Dutt (1984). Furthermore, Allain (2014, 2019) reinforced the proposal by developing a framework, where the Harrodian thought is stabilized by considering the autonomous expenditure in the Kaleckian model and concluding that his approach is the right candidate as an autonomous aggregate demand component. Improving these results, Serrano, Freitas, and Bhering (2019) show that Instability does not occur in the SSM, since autonomous non-capacity creation impacts the investment in an initial situation of imbalance between the capacity and the demand, affecting both growth rates. All articles since Skott (2012, 2017), and Lavoie (2015) presented here, generated a systematic debate around the model. The discussion has questioned if the new framework can or cannot guarantee the equalization between the normal and the actual capacity utilization, and also if the model controls the

Harrod Instability [Skott (2019) argued these issues which are replied by Lavoie (2016)].

Until here, the original approach and extensions were only concerned with a closed economy and without government activity; however, the model was also expanded to an Open Economy. Summa (2016) presents a heterodox macroeconomics "New Consensus" intending to respond to mainstream monetary economics. His article introduced inflation to the SSM model and analyzed its monetary policy implications, in a structure considering international trade. Before his approach, only fiscal policies were implemented in this kind of model. He proved that the monetary system affects productivity capacity and functional income distribution.

Nah and Lavoie (2017) extended the framework by introducing the real exchange rate and dividing the export into two parts. The first one is an initial autonomous export, which states stationary, and the second one is an export function concerning the real exchange rate. By these introduced concepts, on page 3 of their paper, they confirm that wage-led growth "can be limited by the sensitivity of the real exchange rate to changes in income distribution". Although, all these models still consider AC as an essential concept to ensure that capacity utilization goes or goes not to its normal level. The central problem, as was presented by Skott (2019), is that the rentiers do not, or hardly will have such a component.

The neo-Harrodians argue that considering exports as an autonomous component should be a plausible solution, especially in light of Thirlwall's proposition regarding the elasticities of both exports and imports. This perspective highlights the exogeneity of these elasticities and, in fact, even empirically, both variables seem to behave autonomously. The neo-Kaldorians, particularly those associated with New Developmentalism, consider Thirlwall's solution to be efficient and to provide a solid and robust framework. In this context, one of the issues to be addressed by the HSSM is to properly incorporate these elasticities, which are determined by productive capacity, and to specify the existence of structural heterogeneity.

Besides the current debate from the demand side, the HSSM is about the interaction between demand and supply. Recently, De-Juan (2023) has made an important contribution to the supply side, using input-output techniques and the concepts of vertically hyper-integrated sectors to analyze the significant empirical evidence over the past decades concerning the Sraffian foundations. This approach is justified by the fact that, within input-output analysis, assumptions about investment are more plausible than at the macroeconomic level. It is important to mention that not all HSSM literature is covered here, but rather the seminal articles that initiated the discussions and are most frequently cited. Our intention is to demonstrate how this subject has developed and to support new ideas with the evolution of the discussion over the past two decades. The next section is intended to show how the recent controversy has been driven.

¹⁴ At this time, the post-Kaleckians and neo-Harrodians researchers, like Bhaduri, Skott and others were the major neo-Kaleckian critics.

3. The Recent Controversies around the Theory

The previous section shows the development of the SSM and its interaction with the neo-Kaleckian framework. As we saw, the necessity to consider the autonomous component of the demand is crucial and determines economic growth in the original approach. However, to the second line of thinking, the AC led the capacity utilization to its normal level, and guaranteed stability conditions in the long run, reinforcing the robustness of the theory and as a response to the post-Kaleckian criticism. However, the new formulation started to be criticized by some heterodox economists, such as the members of neo-Harrodian and neo-Kaldorian schools. They agree that the autonomous demand in the proposed condition does not sustain the stability of the neo-Kaleckian model and should not be considered part of rentiers consumption.

Thus, to continue our exposition, we follow the definition of the AC presented by Rose (2018). According to her, this component should only be delivered from workers' consumption when unemployment is considered and not from rentiers. In this sense, unemployed people should consume their planned savings until they find jobs. Serrano's original approach characterized the AC as part of the consumption of the rentiers, as we presented in the section above, which is unusual in the literature. This issue became the central point of the discussion started by Lavoie (2015; 2016) and Skott (2019)¹⁵. On one side, Lavoie used the SSM as an alternative in defense of the neo-Kaleckian model, on the other, Skott shows that, if the autonomous part is considered, the model tends to be unstable and agrees with the Harrodian Instability defended by the author. Here, we present the criticism around the Supermultiplier and why the debate is historically relevant to construct this new framework on Heterodox Economic Thinking from a post-Keynesian perspective.

The first analysis made by Skott (2019) about the AC, is:

Capitalists—or more generally, the rich—can draw on their wealth and need not be constrained by current income. Indeed, it may seem reasonable to assume that the rich leave some components of their consumption untouched in bad times. But that is not sufficient to make these components autonomous in the sense of the literature. [...] It may be difficult to think of any consumption component of the rich that is truly autonomous. (Skott, 2019, p. 4)

In the sentence above, he seems to agree, in part, with the definition presented by Rose, which says that AC can only be a part of the workers' expenses. Therefore, Serrano's assumption not only indicates that rentiers consumption is in part autonomous, but also does not create capacity (which means that is income free), and this is another issue to be pointed

out here. Lavoie seems to agree with this definition since he does not argue with which the concept in his 2016 reply.

Skott (2019) concludes that both theoretical and empirical evidence of the Kaleckian model is weak, even considering the autonomous component. For him, the framework did not correctly specify the investment function and in the short run, did not satisfy the stability condition, resulting in the so-called "knife-edge problem"¹⁶. However, his arguments were disproved by Lavoie's (2016) reply.

Following the argument presented by Lavoie (2016) and Serrano and Freitas (2017) the justification for the use of the autonomous component in the theory, is that the AC brings the capacity utilization to its normal level, and guarantees the stability of the model. Serrano and Freitas (2017) linked both theories (SSM and neo-Kaleckian) to provide a more satisfactory closure to the heterodox framework. Thus, to defend the theory, it was shown that Skott tried to present three central points which supposedly invalidate the argumentation of Lavoie's (2015) article, but he did not succeed.

Summarizing, Skott (2016) makes three claims. First, when calibrating with plausible parameter values, the stabilizing mechanism is unlikely to operate. Second, in the analysis of the simple model, I have omitted the second stationary solution. Third, and this is presented as his most damning condemnation, he seems to imply that the constraints that need to be imposed on the simple and the complex models are in contradiction with each other. (Lavoie, 2016, p. 195)

In his 2016 paper he also did augment by saying that "Skott takes overly seriously the worth of the little models that we build for exposition and heuristics purposes", justifying each critique made by the second author. For the first claim, Lavoie, in his own words, indicates that the model is a prototype. Second, the author agrees with Skott, that he omitted the second stationary solution, but it is justified since it seems that he wrongly assumed a positive solution. The correct result is null and because of this was omitted. Finally, after all the exposition, the mentioned paper proved, from a graphical solution, the complexity of the model.

However, those initial aspects pointed out by Skott, seem to elucidate some other critiques around the AC, especially considering that such a component will lead the capacity utilization to its normal level. According to Dávila-Fernández, Oreiro and Punzo (2019)¹⁷:

If it is not true that autonomous consumption brings capacity utilization to its normal level (as in fact it is the case), [...] The simple introduction of non-capacity generating autonomous demand is no sufficient condition to solve the inconsistency problem nor to bring

¹⁵ The original work was published as an early draft in 2016, *Metroeconomica* only organized the issue in 2019.

¹⁶ The "knife-edge problem" sustains that, for the model to be stable, the warranted and natural growth rates must be equal. This is a challenging task, since those variables are determined only by exogenous variables (savings, capital-output and the population growth rate). Such "problem" was solved by Solow (1956) and Kaldor (1956), composing the first two solutions to the Growth Theory. From one side, the neo-classical proposal and the other determine the income distribution theory.

¹⁷ The article was posted in a volume in 2019, the early draft was published online in October 2017.

capacity utilization to its normal level. (Dávila-Fernández, Oreiro and Punzo, 2019, p. 316)

These arguments reflected the fragility of the model. The authors do agree with the points made by Skott, and they choose to reinforce the debate calling inconsistencies the possible mistakes presented by Lavoie. In response, the last author named his article "Inconsistencies in the note of Dávila-Fernández, Oreiro and Punzo" in 2019 to reply to their critiques. He decomposed their note, showing, in his own words, "All three of their claims are wrong" (Lavoie, 2019, p. 320). These debates became the central discussion for the post-Keynesian framework, being the theme of a few volumes of international prestigious journals, such as *Metroeconomica* volume 70, issue 2, 2019 and *Review of Keynesian Economics* volume 8, issue 3, 2020.

However, even considering this as an initial debate, both sides have shown that it is hard to defend an AC being part of rentiers consumption; autonomous to the income; and that it does not generate capacity. Besides, the capacity is generated by the necessity to employ labor in the economy, reducing the sub-utilization of the capital, as was presented by Amadeo (1986) when he shows the behavior of capacity utilization in the income distribution and capital accumulation process. Based on the presented above, considering the AC as a private part of the rentiers, which does not generate capacity, is nonsense to the theory of growth for some authors, but it makes sense for others. This debate still occurs, and a winner has not been defined yet. In the next section, we will present the Brazilian participation in the debate.

4. The Brazilian Debate

As was presented above, the SSM is the Philosophical Dissertation Serrano's contribution, in 1995. Such principle, as was pointed out by Lavoie, was unfairly neglected for 20 years, but revived by Lavoie's (2015) work. The first critique around the theme in response to Lavoie (2015) was the Dávila-Fernández, Oreiro and Punzo (2019), where the two first authors are Brazilian economists. The central argument presented by the authors is the impossibility of the model to converge capacity utilization to its normal level by using the AC growth rate as support. Therefore, Lavoie responded to the authors by concluding that they did not understand his approach. In this episode, he replied directly to the authors, but the authors did not respond to his arguments.

Furthermore, Serrano, Freitas and Bhering (2019)¹⁸ indirectly replied to the instability concerns presented by Skott (2017, 2019) and Dávila-Fernández, Oreiro and Punzo (2019) papers. The first authors published a paper which concludes that the model cannot be unstable in the case of considering the autonomous component, such as in the SSM. Their conclusion says:

[...] if there is an autonomous demand component that does not create capacity in the model, as shown by the Sraffian Supermultiplier, demand-led growth at the rate at which this component grows is fundamentally (or

statically) stable. (Serrano, Freitas and Bhering, 2019, p. 280).

The authors reinforce the arguments presented by Serrano and Freitas (2015, 2017), which inspired Lavoie to link the SSM and the neo-Kaleckian framework. They believe that their approach can be an alternative closure to the Heterodox Growth Theory.

This discussion opened a debate between the researchers who follow the Sraffian/neo-Ricardian line of thinking and the ones who follow the new Developmentalist school or Harrodianism in Brazil. On one side, we have a stronger defense by the academic staff concentrated in some Departments of Economics in Brazil and, on the other, the intellectual attack by isolated economists around Brazil. This approach was published only a few months after Lavoie's 2015 article. His analysis shows the effects of inflation on the growth rate of the economy, considering the SSM, and in his conclusion, he shows that the limits of the demand-led growth path are the choices about their external economic policies made by the countries, where the international inflation has an important effect on the national productivity growth.

His article raised an important question of how inflationary targeting affects the growth rate, allowing the author to develop another work, which was published in the special edition of the *Review of Keynesian Economics* dedicated to the SSM. This paper named "Stagnation and Unnaturally Low-Interest Rate: a Simple Critique of the Amended New Consensus and the Sraffian Supermultiplier Alternative" written by Serrano, Summa and Moreira (2020) reinforces the arguments presented by Summa (2016) and shows that the inflation and the real exchange rate does affect the growth, which is determined by the AC growth rate.

Such monetary principles are defended by the new Developmentalist school of thinking. However, they do not agree with Summa and the group about the mechanism which imposes an autonomous component to define growth. In light of this, Oreiro, Silva and Santos (2020), replied to their argument of a "New Consensus" indicating, besides the monetary side, that all the growth theory developed by the SSM has weakness and, instead the theory defended by the Sraffians, the Developmentalist Macroeconomic Theory is a more plausible alternative to determine the road for the Heterodox approach. In their own words:

Finally, we argue that the Kaldorian models of growth, the basis of the so-called developmentalist macroeconomics; and stock-flow consistent (SFC) models appear to be much more promising alternatives for the development of heterodox theories of growth and income distribution than the Sraffian Supermultiplier approach. (Oreiro, Silva and Santos, 2020, p. 529).

Those arguments and critiques were reinforced and increased by the recent paper of Skott, Oreiro, and Santos (2021). Their argument is that; the autonomous component is possible in the short-run but definitely is not in the long period [like was shown

¹⁸ The first draft published online was in 2018.

by Skott (2019)]. Thus, they show mathematical arguments and computational simulation of the model to reinforce that in a long-run perspective, the SSM is unstable, and agrees with the Harroddian Instability. They also introduced government expenditures, one of the possible justifications for the AC, but even for this case, they obtained the same result.

As we can see, the debate is not finished yet. Therefore, all these authors (in favor or not) agree that one possible autonomous component of the model (maybe the most plausible), is the exports. The next section presents the central discussions.

5. Final Remarks

Our intention here is to contribute to the literature by demonstrating the intense debate around the Supermultiplier, its importance to the current theoretical and empirical economic discourse, and the Brazilian presence in the discussion. Even considering the vast range of papers on the theme, our aim is to cover only the seminal ones, which either introduce or are more incisive in the argument. The question about the autonomous component remains open, and there is no consensus on which economic variable should be considered autonomous according to the central post-Keynesian schools of thought (neo-Kaldorians, neo-Ricardians, neo-Sraffians, and neo-Kaleckians). Additionally, there is a divergence among these schools regarding long-period equilibrium and its stability. We are not attempting to solve any of these problems but rather to provide an overview of the debate, summarizing it and potentially opening ideas for new future research agendas.

The first section of this paper, after the introduction, shows the development of the SSM and its interaction with the neo-Kaleckian approach, especially presenting the use of the Hicks (1950) definition of the Supermultiplier. The key contributions of the Hicks-Supermultiplier are the investment and income relationship, dynamic modelling, a Keynesian long-term equilibrium the importance of investment as a driver of economic growth and to expand the original Keynesian short-term approach to a long-term perspective. Thus, the SSM theory claims that the AC component is indispensable to delivering his solution for the “knife-edge problem”. For him, the autonomous component explains how the product/income behaves and gives the theory a stable result in a long-run period avoiding and correcting the Harrod-Domar problem.

Thus, when Lavoie (2015) introduced the concept to the neo-Kaleckian model, the autonomous component passes to justify how the capacity utilization tends to its normal level and reveals the SSM as a solid alternative to the Heterodox Theory of Growth. Therefore, all the authors who defended this ap-

proach did not present an unquestionable definition of the AC and, according to one presented by Rose (2018), the AC would not be derived from rentier consumption, but from the necessity of the worker's class to survive the unemployment, or as was interpreted here, in the case of retirement, when they would consume their planned savings. In this sense, the AC is a questionable variable by the definition given by Serrano (1995a, 1995b), which supported the controversy attacked by Skott and other authors, when the model is integrated into the neo-Kaleckian framework by Lavoie (2015).

Based on these arguments, in section three, we presented the initial debate around AC, which did not cheer up part of the post-Keynesians. Skott (2016) started the debate around the theme, showing that the investment function presented by Lavoie led the model to the Harroddian Instability, and the autonomous component does not agree with the one defended by the current literature. Besides, to Dávila-Fernández, Oreiro and Punzo (2019), AC also cannot guarantee that capacity utilization will tend to its normal level. The authors also defended that the autonomous component hardly came from the rentier side.

The international debate around this theme raises some important questions, two of them are: How do we define the AC to the theory? Is it possible to consider the AC as was supported by Rose (2018)? However, in this case, the model would consider the differences between class savings and a mechanism of retirement. Another solution is government intervention to guarantee income to the workforce in the case of unemployment. This concept has been the center of the discussion and divides among the heterodox authors, even the one who composes the same post-Keynesian School.

Thus, section four presents the Brazilian debate about the SSM. On one side, the neo-Ricardian group and defends the SSM as an alternative to the heterodox approach. For them, the SSM answer all the problems involving the growth theory, especially correcting the knife-edge problem. On the other, some important economists, especially those related to the new developmentalist group, constantly attack the theory, intending to prove the model's weakness, by showing that does not correct the knife-edge problem and results in the Harroddian Instability. For them, it is unlikely that the AC came from the rentier side or that this assumption even exists. Besides, these authors confront the idea that the AC would converge the capacity utilization to its normal level. The methodology divergence between the authors presented in this paper expresses some fragilities of the model.

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