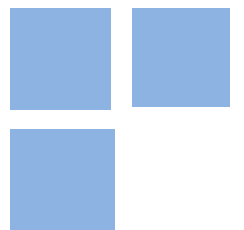# Growrh, distribution, and sectorial heterogeneity: reading the Kaleckians in Latin America

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The aim of this paper is to explore a parallelism between two episodes in the history of economic thought in order to suggest that the interaction between them can contribute to the research on Kaleckian growth and distribution models. First, a brief summary of the theoretical development from Steindl's stagnationist claims to the debate about demand regimes is offered. Then, a more detailed account is provided of the Latin American debate that began with Furtado's stagnationist claims and resulted in the formulation of models of social articulation and disarticulation. Finally, an analytical classification of Kaleckian and Latin American growth and distribution models is provided, indicating the way in which sectoral heterogeneity and demand composition can act as a plausible link between growth and distribution.

GROWTH, DISTRIBUTION, AND SECTORAL HETEROGENEITY
reading the Kaleckians in Latin America

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Keywords: income distribution, demand regimes, sectoral heterogeneity, demand composition, distributive schedule

JEL Codes: E11, E20, O11

This paper has as its starting point two episodes in the history of economic thought that show an interesting parallelism. Both of them began with forecasts that ended up being unambiguously inaccurate. More concretely, they were both initiated by claims that economic growth had its days counted and stagnation was unavoidable. Ironically, these claims were made in the run-up to periods of extraordinarily high growth. However, these failed predictions pointed towards some illuminating characteristics of capitalist economies that would be the basis of later theoretical elaborations, which succeeded in keeping the useful insights while shedding away the mistaken forecast.

The first of these episodes is well known. It began with Josef Steindl's (1952/1976) stagnationist argument and eventually led to the debate on demand and growth regimes, based on Kaleckian growth and distribution models (see Blecker, 2002, for a summary). The second, relatively more obscure, is a Latin American version of the first one. It began with stagnationist views of the prospects of Latin American development (see, for instance, Furtado, 1965), was followed by a revisionist attempt to interpret the failed prediction (most famously by Tavares and Serra, 1971/1976) and resulted in the formulation of models of

social articulation or disarticulation, that is, of cumulative processes involving growth and inequality (Taylor and Bacha, 1976, De Janvry and Sadoulet, 1983)[1].

By exploring this parallelism, this paper aims to provide a classification of Kaleckian and Latin American growth and distribution models that goes beyond the one based on a conventional understanding of the demand and distributive schedules (Taylor, 2010: 188). Examining the way in which sectoral heterogeneity can be incorporated in this framework and the cumulative processes that it may generate, this analysis points towards an additional mechanism connecting growth and distribution that may be important to interpret particular historical developments, but that is largely overlooked by the Kaleckian literature, despite notable exceptions (Taylor, 1989; Dutt, 1990: chaps. 6-7). Even if abstracting from these issues might be adequate in certain cases, a reinterpretation of the demand and distributive schedules that incorporates sectoral heterogeneity (both in the production and in the consumption dimensions) seems to give a powerful contribution to the attempts to understand the dynamic interaction between growth and distribution.

1. From stagnationist claims to demand regimes: the Kaleckian thread

With hindsight, it seems incredible that in the aftermath of World War II there was widespread concern with a potential economic stagnation of the rich countries (or "mature economies," as they were then called). After all, the following two decades would be characterized by an extraordinary prosperity and would be called the "golden age" of capitalism (Armstrong et al., 1984/1991). But the economic troubles that plagued Europe after World War I were still too recent to be ignored and averting their repetition was a widely shared objective.

Steindl's (1952/1976) *Maturity and Stagnation in American Capitalism* is a product of this context. Its characterization of postwar capitalism did not sink into oblivion, in spite of the ensuing "golden age," surviving in a branch of Marxism initiated by Paul Baran and Paul Sweezy's *Monopoly Capital* (1966). Steindl's argument is the postwar version of a much older underconsumptionist tradition. According to him, in a competitive economy, if the growth rate and capacity utilization decreased, competitive pressure would ensure that the less efficient producers would be eliminated by the more efficient ones in a price war that tended to diminish the average profit margins (Steindl, 1979: 5-8). These reduced margins would, in

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[1] The connection between the Kaleckian models and the Latin American literature from Furtado to Taylor and Bacha has also been suggested by Taylor and Arida (1988/1998: 166-168).

their turn, stimulate the resumption of growth and the recovery of the capacity utilization ratio. However, in an oligopolistic economy this stabilization mechanism would no longer work, because profit margins become rigid, and a deceleration of growth would not face any countervailing force. As a result, stagnation could become permanent. But why does increasing concentration make the profit margins rigid? In Steindl's (1979: 7) words, in an oligopolistic economy "aggressive price strategies become very risky, because the few main producers all have substantial margins, and to drive out one of them would require a ruinous price war. If the growth rate declines, the oligopolists are therefore more prepared in most cases to accept low long-term rates of utilization than to engage in cut-throat competition."[2]

Commenting Steindl's and Baran and Sweezy's arguments, Robert Brenner (1998/2006: 54) claims that "[t]he notions of 'monopoly capital' and 'capitalist stagnation' soon revealed themselves (…) to be reification of quite *temporary* and specific aspects of the economy of the US in the 1950s." Steindl (1979: 8-13) himself had defended his argument against this kind of criticism, claiming that the growth rates observed in the 1950s and 1960s did not contradict his interpretation, since they could be explained by resorting to other factors. And, since the 1970s, the tendency towards stagnation could once more be clearly identified, according to him.

Relatively apart from this controversy, in the early 1980s the Kaleckian framework that was the basis for Steindl's argument would be combined with an adaptation of Steindl's own ideas about capacity utilization and the investment function to formulate the early versions of what is now called Kaleckian growth and distribution models (Rowthorn, 1981, Dutt, 1984, Taylor, 1985)[3]. The objective was no longer to provide an epochal diagnosis of capitalism, but rather to give a mathematical representation of the relationship between growth and the functional distribution of income, that might be useful to throw light on concrete economic developments (Amitava Dutt's paper addresses an episode of economic deceleration in India, for instance). Moreover, while Kalecki and Steindl put a lot of emphasis on the theoretical understanding of cyclical dynamics, the 1980s literature was based on more simple steady state analyses.

Lance Taylor (1985) called his model "stagnationist," but the label was only a sign of its Steindlian heritage. The model did result in a positive relation between the wage share and aggregate demand, but he did not argue that there was a secular tendency to a reduction of the

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[2] See, also, Lee (1999: 186-197).
[3] The original versions were developed independently by Rowthorn and Dutt. Taylor was Dutt's advisor at MIT and the latter's 1984 paper is based on work done for his dissertation.

wage share and, as a result, to stagnation, in contrast to Steindl. This positive relation had an affinity with social democrat and Keynesian inclinations to argue for the compatibility between growth and income redistribution[4]. But, in the mid-1980s, with the neoliberal backlash under way, these ideas were losing favor.

A few years later, Amit Bhaduri and Stephen Marglin (1990) used a more general model to show that the mentioned positive relation was just one possibility among others (something that had also been suggested by Robert Blecker, 1989). The novelty of Bhaduri and Marglin's work was not to show that there could be an inverse relationship between the wage share and growth, since this was a common view, shared by most classical economists and by the Cambridge Keynesians. Their contribution was simply to demonstrate that it could also be derived from the Kalecki-Steindl framework, if investment was assumed to respond to the profit share instead of the profit rate[5]. Similarly, Blecker (1989) showed that the inverse relationship could also come about if the effect of international competition on the mark-up was taken into consideration. Bhaduri and Marglin (1990:184) were explicit about the politics behind their argument:

> "The social democrats and their academic allies, the Left Keynesians, put forward the political and intellectual case for the view that high capacity utilization would resolve the contradiction between high wages and high profits. Emphasizing the demand side, neglecting the cost side, they believed that high wages would contribute not only to high levels of output and employment but also to high levels of profits and accumulation. (…) the co-operative interpretation of Keynes became increasingly inconsistent with facts."

Their formulation, thus, included two cases: one with the positive relation between the wage share and aggregate demand and the other with a negative relation[6]. They called the former the "stagnationist" case, following Taylor, and named the latter the "exhilarationist" one. At this point, these terms were not at all illuminating. In a survey from 2002, Robert

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[4] According to some of these models, not only growth and redistribution were compatible, but also both classes could benefit from redistribution, given that an increase in the wage share, through its effect on capacity utilization, could raise the profit rate. This case was called the cooperative wage-led demand regime. The models also allowed for the conflictive case, however. See Bhaduri and Marglin (1990: 388-390) and Blecker (2002: table 8.1) for this taxonomy.

[5] Formally, Bhaduri and Marglin's (1990: 380) investment function can be represented as $g^i = \alpha + \beta\pi + \gamma u$, in which π and u denote, respectively, the profit share and the utilization ratio, while α, β and γ are parameters. Dutt's (1984: 28) investment function, in its turn, can be represented as $g^i = \alpha + \beta r + \gamma u = \alpha + \beta\pi u + \gamma u$, in which r stands for the profit rate, which is equal to the profit share multiplied by the output-capital ratio and, if the latter is used as a proxy for the utilization ratio, can be represented as πu.

[6] In fact, the taxonomy can be extended to distinguish between conflictive and cooperative cases of both wage-led and profit-led demand regimes. Another distinction that has been made is the one between wage-led and profit-led accumulation. See Bhaduri and Marglin (1990: 388-390) and Blecker (2002: table 8.1).

Blecker (2002: 148, fn. 17) felt he had to clarify that "a stagnationist economy need not actually be stagnant. Stagnationism is simply the case of wage-led aggregate demand, in which an increased profit share depresses aggregate demand, but an increased wage share boosts it." The phrases slowly fell out of favor and currently the most common designation for the two cases is simply wage-led and profit-led demand.

With Bhaduri, Marglin and Blecker, then, the theoretical impulse that began with Steindl was able to leave behind the stagnationist stance and transform itself into a more comprehensive framework to examine the interactions between demand and distribution in a capitalist economy[7]. This development might be understood, following Marglin and Bhaduri (1990: 155), by resorting to the "distinction between a *theory* of a capitalist economy in which aggregate demand plays a central role, and *models* built on particular assumptions about the components of aggregate demand." And they apply this distinction to the literature in question: "we view the Keynesian insistence on aggregate demand as an important ingredient to understanding how modern capitalism works quite generally, but the stagnationist model as very much bound to particular places and times."[8]

A simple formal representation of the Kaleckian models might be useful to the present argument[9]. Following Michalis Nikiforos and Duncan Foley (2012: 202-204), the demand schedule is derived from the equivalence between aggregate investment and aggregate savings, considering both of them as functions of income distribution and of the level of capacity utilization, u:

$$I(\psi, u) = S(\psi, u) \tag{1}$$

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[7] Paulo dos Santos (2015: 663) has recently provided a negative assessment of the theoretical development from Steindl to the Kaleckian models, considering the work of the former as one among many "integrated theorizations of the secular development of capitalism, and the endogenous contradictions it may face", whereas the latter are called "more partial discussions." The contrasting positive assessment offered above assumes that the Kaleckian models should not be considered in isolation, but could lead to more sophisticated theorizations of the development of capitalism if they are combined with a historical diagnosis of the latter. The collective book edited by Marglin and Schor (1990), combining history and theory, can be read along these lines. As Marglin (1990: 3) puts it in his introduction: "the historical chapters set the stage for and frame the theoretical chapters, and the theory illuminates and focuses history."

[8] A referee suggested that an alternative way to interpret this development would be distinguishing between Steindl's *story* of stagnation and the Kaleckian *theory* of growth and distribution, with its many different models. In my view, these two sets of distinctions can complement each other.

[9] The option of resorting to Nikiforos and Foley's (2012) version of the framework is justified by its simplicity and generality, despite the fact that, by putting the demand and the distributive schedules together, it distances itself from the original contributions to this literature, which tended to assume that demand adjusts more rapidly than distribution.

where ψ is the wage share of income. By assumption, I_ψ is negative (the subscript refers to the partial derivative), assuming that investment is a positive function of the profit share, and I_u is positive, representing an accelerator effect. S_ψ, in its turn, is assumed to be negative, given the assumption that capitalists have a higher propensity to save than workers, and S_u is positive (higher utilization results in higher incomes, which increases aggregate savings given constant saving propensities). From this equilibrium, it is straightforward to define the impact of a change in distribution on the level of utilization:

$$\frac{du}{d\psi} = \frac{-I_\psi + S_\psi}{I_u - S_u} \tag{2}$$

The denominator of (2) is usually considered to be negative, supposing that saving responds more strongly than investment to changes in utilization. This assumption is named the Keynesian stability condition. The demand regime, then, depends on the sign of the numerator. If an increase in the wage share reduces savings more than it reduces investment, the numerator will be positive and the demand will be wage-led (that is, $\frac{du}{d\psi} > 0$). In the opposite case, with a negative numerator, aggregate demand will be profit-led. This is a very simple framework and numerous extensions have been suggested, which incorporate taxation, household credit, open economy considerations, technical change, personal income inequality, among other things (see the summaries provided by Blecker, 2002, and Lavoie, 2014: chaps. 5-7).

From the beginning, the demand schedule was examined in conjunction with what is now called the distributive schedule, that is, the impact of utilization on distribution, $\frac{d\psi}{du}$ (Nikiforos and Foley, 2012: 204-207, Taylor, 2004: chap. 7). Dutt's (1984) original contribution, for instance, interpreted the distributive schedule as a result of the impact of growth on the industrial structure and, through this channel, on the mark-up. In this case, there was explicit consideration about the time horizon of each adjustment, the commodity market represented by the demand schedule reaching equilibrium quickly and the industrial structure (represented by the distributive schedule) changing slowly. Alternatively, the distributive schedule could be interpreted as determined by the labor market, in line with Goodwin's (1967) formalization of Marx's argument, for instance (different interpretations of the distributive schedule are discussed in Nikiforos and Foley, 2012: 204-207). For the purposes of the present paper, that is, the comparison between the Kaleckian and the Latin

American literatures, it is convenient to avoid the issue of distinct time horizons and to keep in mind that the distributive schedule can represent different theoretical formulations about the dynamic of the functional distribution of income.

Before moving to the Latin American episode, it is important to mention a relatively unknown extension of the Kaleckian framework that is particularly relevant to the present argument. It consists in an attempt by Taylor (1983: 170-176; 1989) to examine the Kaleckian results in a two-sector model, separating the production of wage-goods, on the one hand, and of luxury- and capital-goods, on the other[10]. He assumes a common wage for both sectors, zero saving by the workers and no consumption of wage-goods by capitalists. Workers, in their turn, consume both wage- and luxury-goods. Interestingly, the impact of an exogenous shift of demand towards wage-goods on income distribution and growth depend on which sector is more labor intensive and on the sectoral profit-rate-elasticity of investment. If, for instance, the sector producing wage-goods were more labor-intensive (what is "by no means obvious empirically", according to Taylor, 1989: 632), a shift of demand towards it would shift income distribution towards wages, both in the short run and in the steady state. But this would come at the cost of a lower steady-state growth rate, if the response of the other sector's investment to its profit rate were higher. A demand shift towards wage-goods would only improve distribution and, at the same time, accelerate growth if the sector producing wage-goods were more labor-intensive and its investment responded more strongly to its profit rate than the other sector's investment responded to its profit rate.

This model shows that, by incorporating structural heterogeneity, one can add another dimension to the relation between growth and distribution. The shift in demand composition can be interpreted as a shift in the distributive schedule[11], indicating that composition effects can be important to explain the dynamics of the aggregate labor market or of the aggregate industrial structure that underlie the trajectory of the functional income distribution. In the case at hand, supposing that the sector producing wage-goods is more labor intensive, a shift in demand towards it results in a lower average mark-up, entirely due to the change in the sectoral composition of output. It is precisely these composition effects that will play a leading role in the Latin American literature, to which we now turn.

2. From estancamiento *to the unequalizing spiral: the Latin American version*

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[10] See, on this model, Dutt (1990b: 926).

[11] The model has a parameter that allows it to incorporate this shift in a way that does not impact aggregate demand, in order to distinguish between shifts in the distributive schedule and shifts in the demand schedule.

The concern about stagnation arrived in Latin America about a decade and half after it thrived in the rich countries. The context was a bit different. The aftermath of the war was characterized by bold attempts to accelerate development through industrialization in many Latin American countries. It was a period of rich experimentation with development policies, while at the same time the field of development economics attained centrality in academia. In Arndt's (1987: 44) words, development economics was "promoted (…) from the most neglected to the most written-about branch of the discipline" and an important part of it was being formulated within Latin America, by the intellectuals gathered around the United Nations' Economic Commission for Latin America and the Caribbean (ECLAC or, for the locals, CEPAL).

This euphoria lasted only until the mid-1960s, when these countries caught up with the fears (if not with the per capita income) of its richer counterparts. In 1968, Albert Hirschman claimed there was considerable "disenchantment" with industrialization in Latin America. Prominently among the disenchanted was Celso Furtado (1965), the Brazilian economist who had been a major contributor to the development literature and who had at the same time been actively engaged in policy-making in Brazil. The timing of the gloomy prospects is ironic, as it had been with Steindl's. Brazil would go through, from the late 1960s to the early 1970s, what has been called its "*milagre econômico*" (economic miracle), a period of very high rates of growth, even if also characterized by rapidly increasing inequality and dramatic political repression.

Hirschman (1981: 20-22) would later interpret this stagnationism in political and psychological terms. The 1960s were characterized by a series of "political disasters", as he calls them, in Latin America, which shattered the hopes of "a groups of social scientists, who, after all, had taken up the cultivation of development economics in the wake of World War II not as narrow specialists, but impelled by the vision of a better world." (1981: 20) Furtado himself was a victim of one of these "political disasters," being forced into exile by the Brazilian civil-military dictatorship, after the 1964 coup. Hirschman (1981: 21-22) goes on: "In a Freudian act of displacement, they [the development economists] 'took out' their distress over the political side on the weaker aspects of the economic record. (…) Now that political developments had takes a resoundingly wrong turn, one had to prove that the economic story was similarly unattractive." A positive consequence of this change of mood was to stimulate a more critical look at the process of development, examining for instance its

impact on inequality[12]. But it also led to a forecast of stagnation that would turn out to be incorrect.

Furtado's (1965) version of stagnationism was a historically-informed interpretation of capitalist development in Latin America[13]. Its starting point was the existence of a large subsistence economy that acted as a reservoir of labor for the capitalist sector. The development of the latter would be shaped by a supply of labor that was virtually unlimited, which kept constant the real wage paid by capitalist firms, at a level just above the living standards allowed by the subsistence economy.[14] This feature entailed a polarization of the consumption market, characterized, on the one side, by a growing contingent of workers receiving low wages and enjoying a stagnant living standard and, on the other, by a small elite with rapidly increasing income (mostly appropriated as profits in the capitalist sector) and increasingly diversified consumption patterns. In other words, development was accompanied by high and increasing inequality. In this way, the dualism of the economy, divided between subsistence and capitalist sectors, was reflected in a dualism of the consumption market. And in Furtado's (1965: 166) words, "the concept of underdevelopment is related to the idea of structural dualism."

Furtado examines the impact of these features on the process of development by dividing it into three phases, in an admittedly schematic periodization of Latin American economic history (see Furtado and Maneschi, 1968: 6-7). The first one, which lasted from the last quarter of the 19th century until the Great Depression, was marked by high rates of growth of the exports of primary goods. The second resulted from the sudden reduction of the world demand for these products and the ensuing deterioration of the terms of trade, which led to import-substitution industrialization focused primarily on the development of a sector for producing nondurable consumption goods. The third phase, in its turn, represents a shift of focus of industrialization towards capital-intensive sectors, such as the production of durable and capital goods.

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[12] For the Brazilian controversy on the causes of increasing inequality during that period, see the papers published in the volume edited by Tolipan and Tinelli (1975). For a summary in English, see Bacha and Taylor (1978).

[13] The following brief reconstruction of Furtado's argument will be based mainly on Furtado (1965), Furtado and Maneschi (1968), and Furtado (1975: esp. chap. 21). See also Furtado (1966), where a Portuguese version of Furtado (1965) can be found together with a broader argument. It is true that Furtado's thought went through some changes between 1965 and 1975, but here the focus will be on its continuities. An analysis of the changes, in light of the contemporary debate and the actual development of capitalism in Brazil, would be a fruitful theme for future research.

[14] The identification of surplus labor as one of the main characteristics of underdeveloped countries was widespread in the literature of the time. Its effects were more comprehensively explored in the work of Lewis (1954, 1958). See also Hirschman (1981: 7-10).

The polarization of the consumption market mentioned above contributes to bringing about the transition from the second to the third phase. Given the stagnant incomes of the majority of the workers employed in the capitalist sector the scope for the expansion of the nondurable goods industry is relatively limited. At the same time, the increasing incomes of the rich create a growing demand for luxury goods, such as durable ones. This shift, in Furtado's reading, results in a reduction of the output-capital ratio, given that the choice of technique in underdeveloped countries is quite limited and is not influenced by the relative scarcity of the factors of production. In spite of the unlimited supply of labor, capital-intensive techniques characterize the production of durable and capital goods simply because this is the only technology available for their production, a technology imported from the developed countries. When these products were originally created in the developed countries, the technology used in their production reflected the fact that there was no longer abundance of labor in them (Furtado, 1975: 281-283).

It is against this background, of the interactions between structural dualism, income distribution, consumption patterns, and the productive structure, that Furtado analyzes the tendency towards stagnation. His view of the growth process, though nuanced, is a supply-led one, in contrast to Kalecki's and Steindl's demand-led view[15]. So, the first question regards the availability of savings. An increasing inequality could be expected to give rise to larger savings, accelerating growth, since the rich tend to have lower propensities to consume than the poor. According to him, this did not happen in Latin America, however, especially because the elites tended to imitate the consumption pattern of the elites of the rich countries.[16] He generally reasoned, then, assuming a constant saving rate, despite rising inequality.[17]

If the supply of savings was considered constant, what could explain a deceleration of growth? With accumulation defined as $g^I = \frac{I}{K} = \frac{s}{v}$, in which I, K, s and v denote, respectively, investment, capital stock, saving rate and the capital-output ratio, it is clear that, given a constant saving rate, slower accumulation can only come from a higher capital-output ratio (that is, higher capital intensity). Furtado explained it as a consequence of a cumulative

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process that linked increasing inequality to increasing capital intensity: "a higher amount of capital per unit of employment means a more unequal distribution of income, if the wage is maintained stable." (1965: 171) This more unequal distribution of income reinforces the process of increasing capital intensity, by shifting demand towards luxury goods and, thus, pushing forward the capital deepening. The labor market dualism, thus, guaranteed that capital accumulation would be accompanied by increasing inequality and a deepening of the dualism of the consumption market. The latter, in its turn, would accelerate the shift towards capital-intensive sectors, which would further increase inequality and the consumption dualism itself. This cumulative process had, concretely, two effects on growth (1965: 171).

First, it reduced the capacity of the development process to absorb labor from the subsistence sector and, in this way, to transform the economic structure and enlarge the consumption market. He referred to that effect as a reduction of the employment multiplier of the growth process (1975: 283-289). It had, in its turn, the effect of reducing the stimulus for investment in the agricultural and nondurable goods sectors that sold its production to the low-wage workers, which could otherwise attenuate the tendency towards capital deepening. Second, the high capital-output ratios in the growing sectors meant increasing inefficiency of production, given that the limited size of the market entailed low levels of capacity utilization and the impossibility to reap the benefits of scale economies, with the result that v grew faster than what could be explained by technological requirements (1965: 170). A related consequence was a demand leakage and a greater rigidity of the current account, given that the import content of the durable and capital goods sectors were higher than average and that some of the consumption demand of the rich was met directly by imports. Briefly put, Furtado's stagnationist argument related the cumulative process between inequality and rising capital-output ratio to a deceleration of structural change, rising inefficiency and a more binding foreign exchange constraint.

A few years later, in the beginning of the *milagre*, this view became increasingly untenable and started to be questioned. Probably the most famous critique of Furtado's stagnationism was provided by Maria da Conceição Tavares and José Serra (1971/1976) in an essay titled "*Além da estagnação*" (Beyond stagnation).[18] They deal specially with the

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[18] Bresser-Pereira (1970) proposed, contemporaneously, a similar criticism of Furtado. Tavares and Serra's criticism is especially significant for the purposes of the present argument, because it bridges Furtado's analysis and Taylor and Bacha's model. But it is important to note that, in the early 1970s, Furtado's work in particular and Latin American structuralism in general were criticized from numerous perspectives. Two renowned examples, from the Left, are Cardoso and Faletto's (1971/1979) dependency theory and Oliveira's (1972/2003) work.

specifics of Brazilian capitalist development in the period, but two theoretical points they make are important to the present argument.[19] First, they question Furtado's claim that inequality led to inadequate markets for durable goods. According to them, the dimension of the market is determined by the size of the "economic surplus," not by the number of people that are part of it (1971/1976: 158). Consequently, in contrast to his interpretation, they interpret capacity utilization in the sector producing durable goods as a cyclical variable, not as a structural consequence of minimum scales of production. In this way, demand plays a role in their view, by influencing capacity utilization and, through it, the capital-output ratio and investment. Second, they read Furtado's argument about the rising capital-output ratio as implying a decreasing surplus available for reinvestment, but claim that, given that the rate of profit can be decomposed as the output-capital ratio times the profit share, a fall of the former can be more than compensated by a rise in the latter, resulting in the end in an increasing surplus that could be reinvested.[20,21]

In this way, if for Furtado (1975: 289-291) the way out of stagnation entailed a deep structural transformation in the distribution of income, the consumption pattern, and the productive structure, for Tavares and Serra (1971/1976: 168-169) capitalist growth could be sustained simply by increasing inequality a little (incorporating a small segment of the upper middle classes in the consumption market of durable goods) and by compensating the falling output-capital ratio with an increasing profit share. The *milagre* was plausibly made possible in this precise way. Recent estimates by Marquetti, Maldonado Filho and Lautert (2010: 492) show that after falling continuously during the 1950s and early 1960s, the profit rate bottoms out in 1964, stabilizes until the late 1960s and rises sharply thereafter, reaching its peak in the early 1970s. This trajectory, in its turn, is mostly explained by the trajectory of the profit

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[19] Analyses of the debate between Furtado and Tavares and Serra can be found in Serrano (2001: 139-149), Scherer (2007: chap. 2), and Bastos and D'Avila (2009). See also Lustig (1980).

[20] Their interpretation of Furtado's argument can be clarified in terms of the famous Cambridge equation (with causality interpreted from savings to investment, respecting his view), which relates accumulation to the propensity to save and to the profit rate. It is, in fact, an adaptation of the equation mentioned above, which assumes no savings out of wages, only out of profits. Given a constant propensity to save (Furtado's assumption), a falling profit rate (explained by a falling output-capital ratio) would lead to decreasing capital accumulation. Tavares and Serra's criticism is a bit complicated, because they not only question the necessary parallelism between the profit rate and the output-capital ratio by taking into consideration the rate of surplus value, but also hint at a demand-led understanding of growth (see, for instance, 1971/1976: 167). See Bastos and d'Avila (2009).

[21] The decomposition of the profit rate mentioned can be represented in the following way: $r = \frac{Y}{K}\frac{\Pi}{Y}$, where r is the profit rate, Y is output, K is the capital stock, and Π is the mass of profits. They express the profit share in terms of the rate of surplus value, m: $\frac{\Pi}{Y} = \frac{m}{m+1}$. So, an increase in the rate of surplus value is equivalent to an increase in the profit share. See Tavares and Serra (1971/1976: 163-164, fn. 6)

share, which falls from the early 1960s until the mid-1960s and then recovers until the mid-1970s.[22]

The nature of both Furtado's stagnationism and Tavares and Serra's critique of it is of diagnoses of capitalist development in Brazil. In the parallelism that is being suggested presently, they are the somewhat equivalent to Steindl's work. The move towards more general models, relatively independent of specific contexts, was made by Lance Taylor and Edmar Bacha (1976). Their model represents for the Latin American story a transition similar to the one Rowthorn's (1981), Dutt's (1984), Taylor's (1985) models represented to the Kaleckian thread, with the caveat that in the latter the 1980s' literature could build on the formalizations that Kalecki and Steindl had themselves proposed, whereas Taylor and Bacha attempted to represent with a formal model a literature that was done with almost no mathematics[23].

In the Kaleckian episode, the interaction between demand and distribution that was the basis of Steindl's work is decoupled from his interpretation of the United States' capitalism and presented in a more general form. Similarly, Taylor and Bacha picked up from the Furtado and from Tavares and Serra the analysis of the interaction between distribution, consumption patterns, and structural change, leaving aside their dispute about the trajectory of the Brazilian economy from the 1960s until the early 1970s. It is noteworthy that Taylor and Bacha's model is a demand-led one, as the Kaleckians' models and Tavares and Serra's theory, but in contrast to Furtado supply-led theory. Be that as it may, referring precisely to Furtado and to Tavares, they explain their aim: "Following the lead of a number of Latin American institutional analyses, we set up our model in classical form, stressing the role of distributional trends in shaping the growth process." (1976: 199)

Roughly put, their model suggests a cumulative process in which accumulation increases inequality, on the one hand, and growing inequality stimulates accumulation, on the

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[22] "The profit share stabilized with the military rule when pro-capital reforms and economic policies were implemented, and it rose during the 1968-1973 economic boom. The military dictatorship ended job tenure in the private sector, introduced a new wage policy that restricted wage increases, and removed the restriction to profit remittances." (Marquetti et al., 2010: 493) It might be useful to clarify that this interpretation of the *milagre* can be reconciled both with a supply-led and a demand-led understanding of growth. In the latter case, a rising profit rate was not only the result of a higher profit share, but also of the increase in capacity utilization generated by an adaptation of the consumption pattern to the productive structure through increasing inequality. Financial reforms that increased autonomous demand (allowing rising credit flows) also contributed to increasing utilization. Bastos and D'Avila (2009: 185-187) interpret the *milagre* along these lines and suggest that this is also Tavares and Serra's (1971/1976) interpretation.

[23] The fact that Taylor plays a role in both episodes may reinforce the case for the parallelism suggested.

other[24]. It is possible to represent it beginning with the macroeconomic equilibrium between investment and savings, as was done with the Kaleckian one, in the previous section. Assuming that profits are entirely saved, that unskilled workers consume all their income and that skilled workers save a constant fraction of theirs, aggregate savings are determined by the level of profits and by total wages paid to skilled workers. They claim that this "amounts to a saving-investment balance in Kaleckian form" (1976: 206).

They further assume a fixed short-run supply of capital and that profits are constant, determined by technical coefficients[25]. Thus, an increase in investment is balanced entirely by an increase in the number of skilled laborers. Given the fixed wage assumed (a constant multiple of the wage of the unskilled workers, which is, in its turn, determined by living standards in the subsistence economy, along the lines of dual-economy models), a growing number of skilled workers results in a higher amount of total wages paid to them and, thus, in higher savings. (At the same time, the higher number of skilled workers, given the fixed coefficients of production assumed and a fixed capital stock, result in a higher share of wages going to skilled workers. This is what the model means by increasing inequality: higher wage inequality.)

Taylor (1989: 624) would later refer to this model as "neo-Keynesian," because it assumes that the economy operates at full capacity and that the adjustment, as mentioned, is brought about entirely by the number of skilled workers[26]. The effect of investment on the level of skilled workers can be explained by two kinds of mechanisms, one related to market mechanisms, the other, to social institutions. They explain the first thus:

> "Imagine that investment demand increases and is met, if necessary, by governmental diversion of resources to capital goods production (…). Then the cost of capital to industries producing consumer goods will rise, and the cost of labor will fall. But because unskilled workers have a stable real wage, the skilled wage will bear the brunt of the adjustment with a consequent shift in the skill mix toward higher wage employees. As a result, *more* skilled jobs will open up in the substitution response to increased capital scarcity." (1976: 206)

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[24] An interesting question for future research concerns the methodological divergence between the two episodes here discussed. Whereas the Kaleckian thread resorts more commonly to steady state analyses, the Latin American version tends to use cumulative processes. The reason behind this divergence might be found by following the hint suggested by Taylor and Bacha (1976: 209): "Most growth theory is ill-adapted to analysis of Belindia because it deals with steady states; whereas the topic of interest is a secular shift of production and employment patterns within the modern sector."

[25] "[I]n a competitive economy, there is only one degree of freedom for trade-offs between the real wage and the rate of profit along the wage-profit frontier. The surplus labor fixed real wage in the modern sector thus determines both the rate of profit and the choice of technique. As long as the wage does not change, one might as well assume fixed techniques." (Taylor and Bacha, 1976: 200, fn. 6)

[26] See Dutt (1990b: 925).

And the second is explained in the following way:

> "Given a repressed, inactive labor movement and strong social desires for upward mobility, it is easier to cut back blue-collar than white-collar jobs in the short run, particularly if some blue-collar employment reductions really take the form of upgrading to middle-class positions. On the supply side it is also true that increases in capital and luxury goods production levels will be related, since both subsectors are in the 'advanced' part of the economy and their entrepreneurs make investment decisions in the same expectational milieu. Once again, capital shortages will hold back expansion in more traditional wage goods industries, and poor workers facing escalating relative prices or elongated queues are always welcome to disappear back into the subsistence sector. (…) the substitution effect again works in favor of skilled employment increases." (1976: 206-207)

The other side of the cumulative process is the effect of the skilled worker's wage bill on investment (1976: 209-211). They justify this assumption claiming that it is a plausible simplification to "assume that investors look only to the leading sector of the economy" (210). Assuming, in addition, that the "leading sector" is the production of luxury goods, they define the growth of capital as a function of the growth of luxury goods' sales multiplied by a term that represents entrepreneurial expectations.[27] Moreover, given that, by assumption, unskilled workers consume only wage goods and skilled workers consume only luxury goods, the interaction between inequality and investment can be easily identified. Thus, the equivalence between aggregate investment and aggregate savings could be represented formally in the following way:

$$I(\alpha) = S(\alpha) \tag{3},$$

where α is the share of skilled workers wages in the total wage bill, an indicator of inequality in the context of the model. Rising investment, as noted, increases the share of skilled workers on the total wage bill, pushing the demand for luxury goods up, stimulating thus a further growth of investment, which, in its turn, raises inequality even more. It is interesting to note that, like Tavares and Serra and in contrast to Furtado, Taylor and Bacha (1976) formulate a demand-led growth model that results in a positive relation between inequality

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[27] "Since modern corporations are specialized in mass production of just the goods that consumers in the rapidly growing upper strata of the income distribution prefer, there is every reason to think that the growth process is centered on the interaction between escalating demand for newly appearing 'luxuries' by the 'rich' (…) and investment responding to increasing sales on the part of corporations producing these goods." (Taylor and Bacha, 1976: 198)

and aggregate demand, a relation explained by their assumption about the determinants of investment.

Following Taylor and Bacha (1976), de Janvry and Sadoulet (1983) formulated a more general model that can result both in the mentioned cumulative process between growth and inequality or in its opposite, a cumulative process between growth and increasing equality[28]. They refer to the two cases, respectively, as social disarticulation and social articulation. By taking this step of generalizing Taylor and Bacha's (1976) result, they've done for the Latin American literature something similar to what Bhaduri, Marglin and Blecker did for the Kaleckian one. An important difference is that, in the Kaleckian case, the profit-led result was derived by making small changes in the baseline model, while de Janvry and Sadoulet (1983) present a model that, despite its reference to Taylor and Bacha's (1976), is a big departure from it. They go back, for instance, to the savings-constrained theory of Furtado, abandoning the demand-led closure shared by Tavares and Serra (1971/1976) and Taylor and Bacha (1976).

Focusing on the interactions between inequality, consumption pattern, and productive structure, they identify the conditions that lead to either social articulation or disarticulation. According to them, these conditions are essentially related to the key growth sectors (in terms of the share of total capital accumulation that each of them concentrate) and the level of inequality. High levels of inequality and capital accumulation concentrated in the sectors producing goods demanded by the richest segments of the population lead, like in Taylor and Bacha, to social disarticulation.

They distinguish between social articulation and disarticulation by the role performed by wages. In their view, social articulation is a process in which "wages create the bulk of final demand for all sectors of the economy. (…) Growth and income distribution are, thus, indissolubly tied together in an ultimately progressive manner even if the nature of this relation is marked by serious class confrontations and recurrent economic cycles and crises." (1983: 279) Interestingly, they attribute the explanation of such a process to Marx and to Kalecki (1983: 279). It is indeed a description of what the Kaleckian literature would call a wage-led demand regime, taking into consideration sectoral diversity. In social disarticulation, however, wages are only "a cost to capital", given that "[n]on-workers incomes create both the source of savings and the expanding final demand for the key growth

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[28] De Janvry and Sadoulet's (1983) model is interesting for the present narrative because it completes the parallelism suggested, in spite of its questionable assumptions. On these, see Rattso (1986) and Dutt (1990b: 925-926).

sectors." (1983: 279) Finally, their paper provides not only the mentioned generalization of Taylor and Bacha's (1976) result, albeit resorting to a different closure, but also a description of Brazilian development from 1968 to 1977, arguing that it represented an instance of social disarticulation, an interpretation of the period not unlike Tavares and Serra's (1971/1976).

3. Varieties of growth and distribution models

The parallelism between the two literatures and the numerous affinities between them may suggest the fruitfulness of greater interaction. A more analytical classification of them, as the one indicated in Table 1, below, can serve as a starting point for examining it more concretely. The top part of the table, due to Taylor (2010: 188), is simply a systematization of the Kaleckian framework briefly described in section 1, above[29]. By putting together the potential combinations of demand and distributive schedules, with positive or negative slopes in the (ψ, u) plane, it presents four possible growth and distribution models. The stability analysis allows one to investigate the possibility of cycles and the different models might also serve to compare, in each of them, the impact of different economic policies, going beyond the more restrictive comparison between different demand regimes[30]. Moreover, by introducing a variety of models, the systematization broadens the scope of the framework, allowing it to be flexible to different historical, institutional and political contexts. It is plausible that, given different labor legislations and industrial structures, some economies might present, for instance, a procyclical wage share, while others present an anticyclical one. Those two cases are represented, respectively, by the profit-squeeze distributive schedule and the wage-squeeze one.

[*Table 1 around here*]

It might be useful to mention, to make the varieties more concrete, that Barbosa-Filho and Taylor's (2006) structuralist Goodwin model is a profit-led, profit-squeeze one, that is, variety (4) of the table, although they also discuss variety (2)[31]. Dutt's (1984) original model, in its turn, could be roughly classified as a wage-led, profit-squeeze one, model (3), with the

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[29] See also Taylor (2004: chapter 7) and Barbosa-Filho and Taylor (2006).

[30] The stability analysis reported in the table is a simplification. For more precise discussions of the issue, which is beyond the scope of the present paper, see Bhaduri (2008) and Lavoie (2014: 381-386).

[31] Goodwin's (1967) own model is a bit different, since it relates the wage share and employment (instead of capacity utilization), but it could be roughly classified as a savings-driven, profit squeeze one, model (4).

caveats that, in this case, the demand schedule and the distributive one operate in different time horizons, as mentioned, and that he actually resorts to a nonlinear distributive schedule. This issue of nonlinearity is, by the way, an important limitation of the systematization above, since there is mounting evidence of nonlinear schedules (Nikiforos and Foley, 2012).

Moving down to the bottom part of Table 1, one finds four other varieties of growth and distribution models, inspired by the Latin American literature. Concerning the demand schedule, these models emphasize wage inequality instead of the functional distribution of income. In fact, Furtado's and Tavares and Serra's (1971/1976) work incorporate both dimensions of the distribution of income, but Taylor and Bacha's (1976) and de Janvry and Sadoulet's (1983) models restrict the analysis to the inequality between skilled and unskilled workers and workers and managers, respectively. Given the very substantial wage inequality observed in most capitalist economies, focusing exclusively on the functional distribution of income leaves out a potentially important phenomenon. Recently, this limit began to be addressed by Kaleckians with the formulation of models that incorporate either wage inequality or the personal distribution of income (Palley, 2014, 2015; Carvalho and Rezai, 2016)[32]. The Latin American literature could contribute to this ongoing research.

The distributive schedule that can be extracted from the Latin American episode is a larger departure from the Kaleckian one, because it incorporates sectoral heterogeneity. With a few notable exceptions, like Taylor's (1983: 170-176, 1989) model, the Kaleckian literature is based mostly on single-good models, disregarding issues that can only be dealt in multi-sector frameworks[33]. As Dutt (1990b: 915) argues, two-sector models are called for when there is a significant difference between the products of the two sectors. In the Latin American literature, two differences are emphasized. First, the level of skill required from the workers of each sector. In Taylor and Bacha's (1976) model, for instance, the sector that produces wage-goods employs only unskilled workers and the sector that produces luxury-goods employs only skilled workers. Second, the group that consumes the product of each sector is also different. To use, again, Taylor and Bacha's (1976) example, they assume that luxury-goods are consumed only by skilled workers and that wage-goods are consumed only by unskilled workers.

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[32] A hypothesis that could be easily incorporated in Kaleckian models is that the salaries of managers are related, in some way, to the profit share. This argument, put forward by Bacha (1974/1978) in the Latin American discussion, allows one to connect the functional distribution of income and wage inequality.

[33] For other Kaleckian two-sector models, see Dutt (1990a: chaps. 6-7), and for a survey of models that incorporate sectoral heterogeneity, see Dutt (1990b). For a critique of Kaleckian arguments from the standpoint of a multisectoral framework, see Steedman (1992).

As can be easily noted, these two sectoral differences can easily generate cumulative processes. If wage inequality increases, the demand composition shifts towards luxury-goods. This shift, in its turn, tends to increase the share of luxury-goods in total output and, through the labor market, to increase wage inequality further. This would be the unequalizing spiral, described by Taylor and Bacha (1976), which corresponds in the table to model (6). De Janvry and Sadoulet's (1983) social articulation case could be roughly classified as model (7), an equality-led, unskilled-labor-biased-growth one.

That actual capitalist economies are characterized by sectoral heterogeneity in terms of the level of skill required for production should not be controversial. Nor that this may be a crucial mediation between growth and wage inequality, much of the change of the latter stemming from composition effects. There is more doubt, however, about the other source of heterogeneity, that is, demand composition. The evidence available (Wells, 1974, 1977; Lustig, 1982; Medeiros, 2015: chap. 2; Carvalho et al., 2016) is ambiguous, some of it suggesting heterogeneity, some of it suggesting that the composition of demand of different income groups is not different enough to have macroeconomic implications.

Taylor's (1983: 170-176, 1989) model examined above is, interestingly, in-between the Kaleckian and the Latin American literatures. It is a two-sector model and it also has different income groups consuming the products of different sectors. But it does not take into consideration heterogeneous levels of skills between workers, so that the difference between the two sectors, concerning the production dimension, is their labor productivity and, given a common wage, their profit share. With this formal structure, a shift in the composition of demand towards luxury- and investment-goods does not increase wage inequality (which is assumed away) but it raises the profit share, if this sector is less labor-intensive. In this case, then, a distributive schedule incorporating sectoral heterogeneity is combined with a demand schedule that depends on the functional distribution of income. This example clarifies that the varieties of growth and distribution models are not restricted to the eight presented above, but can be extended to combinations of demand and distributive schedules that combine the two parts of the table.

Some particular historical periods seem to suggest the fruitfulness of the varieties of growth and distribution models that incorporate sectoral heterogeneity. The interpretation of the Brazilian *milagre econômico* along the lines suggested by model (6), Taylor and Bacha's, has already been pointed out. The more recent growth acceleration in Brazil, from 2004 to 2010, might also need a model of this sort in order to be properly understood, although now the dynamics seem to resemble model (7), the equality-led, unskilled-labor-biased-growth

one. Further research is needed to assess this suggestion, but both falling wage inequality (and a growing wage share) and a shift of the productive structure towards sectors intensive in unskilled-labor were observed in the period and it is plausible that one development might have fed the other[34].

Models are, of course, abstractions. Their usefulness should be judged by their ability to illuminate particular historical developments and different models might be more adequate, thus, to interpret different historical periods or different economies. The interaction suggested between the Kaleckian and the Latin American literatures should be understood as an attempt to expand the available varieties of models so that the researcher has more options to choose from[35]. The choice should be made based on what seems to be the more salient aspects of the development to be interpreted and it is plausible that, in some cases, the role of sectoral heterogeneity as a mediation between growth and distribution will be among them.

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[34] This suggestion is elaborated more carefully in Rugitsky (2016), where the recent period is called the *antimilagre*. For a more detailed examination of recent Brazilian developments in light of Kaleckian models, see Carvalho and Rugitsky (2015).

[35] The potential for interaction between these two literatures is not restricted, of course, to the suggestions made in the present paper. An interesting example concerns the incorporation of Duesenberry's "demonstration effect" in Kaleckian models. See, for instance, Ryoo and Kim (2014) and Setterfield and Kim (2016). As mentioned, this was also a decisive element of Furtado's thinking and interaction in this area might also be fruitful.

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Table 1: Varieties of growth and distribution models			
		DEMAND SCHEDULE	
		Wage-led ($du/d\psi>0$)	**Profit-led** ($du/d\psi<0$) **or savings-driven**
	Wage-squeeze ($d\psi/du>0$)	(1) Stable	(2) Unstable
DISTRIBUTIVE SCHEDULE	**Profit-squeeze** ($d\psi/du<0$)	(3) Unstable	(4) Stable
		Equality-led	**Inequality-led or savings-driven**
	Skilled-labor-biased-growth	(5) Stable	(6) Unstable
	Unskilled-labor-biased-growth	(7) Unstable	(8) Stable
Top: Taylor (2010: 188); Bottom: Author's formulation			