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OLD AND NEW GROWTH THEORIES: WHICH ROLE FOR AGGREGATE DEMAND?

1. This essay deals with the role played by aggregate demand in the theories of growth that have historically emerged. It wants to attract the attention of the readers to those parts of the economic literature, which have underlined that the autonomous components of aggregate demand can have an influence on growth. There is a tendency in modern literature to disregard this influence and to accept Say's Law, which has constantly enjoyed a large consensus in the history of economic thought. Yet, as will be argued in the following pages, the validity of Say's Law has always been disputed and, for some decades after the great depression, it was denied by the largest part of the profession. Since the 1970's, the Law has been regaining consensus and nowadays represents by far the prevailing view. Thus, in the New Growth Theories, which are the most established theories of growth in modern literature, Say's Law holds and autonomous demand has no influence on the rate of growth, owing to the assumption that investment decisions are directly generated by saving decisions.

2. The determinants of growth were a major concern of classical economists. They related growth to income distribution. The latter affects the saving's decisions of the different classes and, according to some classical economists, their investment decisions too. Other classical authors, like Malthus, Sismondi and Marx, however, denied the validity of Say's Law and explored a possible influence of demand. The presence of their analyses within classical political economy makes it possible to say that this tradition was "open" to the influence on growth of the autonomous components of aggregate demand.
In their writings on the growth process Smith and Marx also underlined the role of technical progress, presenting on this subject a broad analysis, which can be considered an antecedent of the modern cumulative causation and evolutionary approaches. Efficiency, they claimed, is enhanced by division of labor, which, according to them, depends on the expansion of the markets.[1] Changes in demand, whether autonomous or induced by changes in production, can thus affect growth by favoring division of labor and technical progress. This kind of influence of demand does not require the rejection of Say's Law, as confirmed by its presence in New Growth Theories, where variations in demand are induced by variations in production.

3. The rise of the neoclassical school in the second half of the XIX century brought about a change of perspective in economic theory. Allocation of resources became the major concern

[1] For an analysis of this subject, see Ricoy, 1998.

and the problem of distribution one aspect of the general pricing and allocation process. Neoclassical economists argued that competitive forces, operating through variations in relative prices and factor substitution, generate a tendency to full employment and to the exploitation of the growth potentials of the economy. In the writings of these authors, Say's Law took a new form, which made it coincide with the tendency to full employment. Moreover, the possibility to refer to the influence of the autonomous components of demand on long-term growth, which was present in the classical tradition, disappeared.

The problems related to the operation of these market forces were examined by neoclassical economists in what Keynes called the "real department of economics". The "monetary department" dealt instead with business fluctuations, arguing that the working of the credit system cause them. Following this approach, Hayek, Keynes, Robertson and others in the 1920's tried to identify a "neutral monetary policy", i.e. a policy that can prevent monetary and credit disturbances from amplifying the fluctuations of the economy.

4. The severity of the 1929 great depression changed the course of these events. As Harrod pointed out in an unpublished 1933 essay reported by Young (1989, pp. 30-38), the previous recessions had not led the economy too far from full employment, nor had they cast doubts on the belief that the economy is able to return to it. The great depression, instead, put in danger political stability and raised the problem of a new political approach and of a new economic theory able to clarify whether market forces can lead the economy towards full employment or Government intervention is required to restore it.

Moving along these lines, Keynes introduced in 1932 the concept of "monetary theory of production" to part with the neoclassical separation between the real and the monetary departments of economics and with the idea of a tendency to full employment. The notion of "effective demand" and its influence on economic activity became the central theme in *The General Theory*.

Harrod, on the other hand, began in 1933 to develop economic dynamics. His contributions to this subject had been misinterpreted for a long time. First of all, it was thought that they had been stimulated by his work on imperfect competition and his dissatisfaction with the Austrian trade cycle theory put forward by Hayek.[2] The analysis of Harrod's Papers, recently become available at the Chiba University of Commerce in Ichikawa (Japan), has instead pointed out that his efforts in this direction were stimulated by his contacts with Keynes and by the will to extend the ideas of the Cambridge economist to the long-period dynamic context.[3] His seminal "An essay in dynamic theory" conceived modern growth theory as a Keynesian theory. It developed the views that the economic system does not tend necessarily to full employment and

[2] Kregel (1980 p. 98; 1985, pp. 66-67) proposed this interpretation.
[3] See Young (1989, pp. 15-50).

that the rate of growth may be affected by three sources of autonomous demand, coming from the Government sector, the private sector, in the form of autonomous investment, and the foreign sector.

The analysis of Harrod's Papers also confirms the limits of the widespread interpretation that he developed his analysis of growth by assuming absence of monetary influences and fixed technical coefficients and saving propensity, in order to establish the famous "knife-edge problem".[4] Harrod worked out his views without denying that the rate of interest has some influence on saving and investment decisions. In 1939 he made some reference to the influence of the interest rate on the propensity to save[5] and, in his following writings, he recalled the possibility of using Ramsey's inter-temporal approach to fund this part of his analysis.[6] Moreover, dealing with investment, he recognized the possibility of substitution between factors of production and the existence of decreasing marginal returns[7], although he was skeptical as to the possibility that the operation of these forces would have led the economy towards the full employment (or "natural") steady growth path. He considered, following the results reached by the Oxford Research Group in which he actively participated, that this kind of substitution was low and that the rate of interest does not tend to undergo large variations since it depends on the conduct of monetary policy, which, according to the Oxford economist, operates by stabilizing this rate at some specified level.[8]

5. To oppose Harrod's views, Solow (1956) presented a dynamic version of neoclassical theory. He argued that variations in relative prices and factor substitution lead the economy to a full employment steady growth path. The debate on capital theory, enhanced by the publication in 1960 of Sraffa's *Production of Commodities by Means of Commodities*, scrutinized Solow's

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[4] The major reference for the "knife-edge" interpretation is Solow (1956; 1970). For an opposite interpretation, see Eisner (1958), Asimakopulos and Weldon (1965), Kregel (1980), Asimakopulos (1985).

[5] See Harrod 1939, p. 276.

[6] See Harrod (1948, p. 40; 1964, pp. 903 and 905-906). The similarity between Harrod's and Ramsey's analysis of saving is underlined by Asimakopulos and Weldon (1965, pp. 66). Harrod (1973, p. 20) also clarifies that 'what each person chooses in regard to saving is governed by various institutional arrangements, which differ from country to country and from time to time. There is the question of what the State will provide for future contingencies - old age, ill health, unemployment, etc. - by current transfer payments as and when they arise. The more ground that the State covers, the less will the individual feel it incumbent to provide for himself by saving. Personal saving will also be affected by the degree the education of one's children is subvented by the public authorities'.

[7] See Harrod (1939, pp. 258, 259 and 276). On page 276, in particular, Harrod explicitly referred to an inverse relationship between v and r. In the Thirties the neoclassical assumption of decreasing marginal returns was generally accepted. Sraffa's critique of the neoclassical theory of capital had not yet been presented. Within Sraffa's papers, the first written evidence of this critique is dated 1942. (See Panico, 1998, p. 177, fn. 55; and Panico, 2001, pp. 300 and 308-309 fn. 59, 60 and 61). As is known, it was published in 1960 and discussed at length in the following decade.

[8] Harrod (1948, p. 83) points out that his analysis of the warranted rate assumes the rate of interest constant. He referred to the realism of Keynes's view on the behaviour of the interest rate (pp. 64-65), agreeing that this rate may be rigid (pp. 56-57) and unable to decrease in such a way as to lead to full employment (pp. 70-71; 83-84; 97; 99).

conclusions. Some outstanding neoclassical economists acknowledged the validity of some criticisms raised against their theory. Samuelson recognized, in the Summing up of the 1966 Symposium in the *Quarterly Journal of Economics*, that in the long-period analysis of an economy where more than one commodity is produced, the occurrence of the "reverse capital deepening" is the general case. This conclusion undercut the neoclassical "parables" that extend to a multi-commodity economy the conclusions of the analysis of a one-commodity world and challenged the view that price variations and factor substitutions lead the economy to full employment.

6. During the same years, Kaldor (1955-56) and Pasinetti (1962) developed the post Keynesian theory of growth and distribution by assuming that market forces operate along lines, which are different from those envisaged by neoclassical authors and similar to those described by classical economists. Like the latter, Kaldor and Pasinetti assumed that the propensities to save of different income earners (or classes, or sectors of the economy) are not equal, and argued that variations in income distribution bring about variations in total saving and aggregate demand, leading the economy to steady growth. The post Keynesian theory of growth and distribution introduced the "Cambridge equation" and the "Pasinetti theorem", which state that in steady growth the rate of profit is equal to the ratio between the rate of growth and the capitalists' propensity to save, and does not depend on technology and on the workers' propensity to save. Samuelson and Modigliani (1966) challenged this conclusion and proposed an "anti-Pasinetti" or "dual" theorem. They argued that in steady growth, if the capital owned by the capitalists' class is zero, the capital-output ratio is equal to the ratio between the workers' propensity to save and the rate of growth, while the rate of profit depends on the technological relation connecting this variable to the capital-output ratio. The occurrence of the "Pasinetti" or of the "dual" theorem depends on this technological relationship too.

By focusing on the role of income distribution in the growth process and underlining the links with classical economists and the differences with neoclassical authors, the theory proposed by Kaldor and Pasinetti failed to emphasize the idea that the tendency to full employment does not necessarily operate. Yet, the developments of this theory, which have examined the role of the demand coming from the Government sector, make good for this failure.

Kaldor's 1958 Memorandum to the Radcliffe Commission shows many similarities with the views on the role of Government policy proposed by Harrod and other Keynesian authors. Kaldor considered Government policies *necessary* to pursue stability and growth. For him, monetary policy is the appropriate tool against the fluctuations of the economy, while fiscal policy is proper to pursue the long-range objective of sustained growth.

He argued that monetary policy has to stabilize the short-term interest rates in order to avoid some 'undesirable consequences'. The instability of the interest rates enhances financial

speculation and reduces the ability of the markets to convey financial resources towards productive enterprises. Moreover, it raises the risk premium to be paid on loans of longer maturity and leads to higher long-term interest rates. Higher long-term interest rates, in turn, cause difficulty to the management of Government debt and increase the probability that firms may not be able to pay back their loans, making lending institutions and financial markets more fragile. Finally, they tend to cause economic stagnation.

To justify the tendency to stagnation Kaldor made explicit reference to his theory of growth and distribution and to the Cambridge equation.

> In a steadily growing economy the average rate of profit on investment can, in the first approximation, be taken as being equal to the rate of growth in the money value of the gross national product divided by the proportion of profit saved … To keep the process of investment going, the rate of profit must exceed the (long-term) interest rates by some considerable margin. (Kaldor, 1958, pp. 137-138)

A monetary policy causing unstable interest rates can raise the long-term rates to a level considered by investors too high to keep accumulation going. Under these circumstances, stagnation prevails, unless the rate of profit is raised too. According to Kaldor, this can be done through fiscal policy.

> If the rate of interest were higher than [the level that keeps investment going], the process of accumulation would be interrupted, and the economy would relapse into a slump. To get it out of the slump it would be necessary to stimulate the propensity to consume - by tax cuts, for example - which would raise the rate of profit and thus restore the incentive to invest. (Kaldor, 1958, p. 138)

Kaldor thus proposed to use the equilibrium condition of the commodities' market and the Cambridge equation to determine the intensity of fiscal policy compatible with a desired rate of growth and the rate of interest fixed by the monetary authority. In making this proposal he showed awareness of the complexity of the growth process, since he made some anticipations of the view, developed some years later, that an expansive fiscal policy may cause problems to the international competitiveness of the economy and to the maintenance of sustained growth in the future. This solution, he said[9], has the drawback that in time of inadequate demand the Government gradually transforms the economy into one of high consumption and low investment, with some undesirable consequences on long-run growth.

Kaldor did not present his positions on the role of Government policy in a formalized way. His reference to the Cambridge equation must then be considered, as he himself stated, a first approximation rather than the result of a thorough treatment of this problem.

Steedman (1972) provided the first formal presentation of the post Keynesian theory of growth and distribution, which explicitly introduces the Government sector. He assumed a balanced Government budget to show that the Cambridge equation - in a revised form that takes into account the existence of taxation - holds in a larger number of cases than the dual theorem of

[9] See Kaldor, 1958, pp. 136-137.

Samuelson and Modigliani. Some years later, Fleck and Domenghino (1987) and Pasinetti (1989) started a debate on the validity of the Cambridge equation when the Government budget is *not* balanced. The debate examined a large number of cases, showing when the Cambridge equation holds and confirming the conclusions previously reached by Steedman.[10] Its results describe how the views presented by Kaldor to the Radcliffe Commission can be formally developed, clarifying different ways in which the demand coming from the Government sector can influence growth and distribution. In the Memorandum the lack of a formal analysis of how Government intervention can affect growth and distribution led Kaldor to refer to a version of the Cambridge eqaution, which does not include the tax rate. As a consequence, he conceived the influence of tax variations on growth in terms of their effect on the propensities to save. The debate on the role of the Government sector in the Post Keynesian theory of growth and distribution has, instead, clarified that Government intervention can affect demand and growth independently of changes in the propensities to save and in the capital-out ratio. This kind of influence of demand is not to be found in other literature on growth. The New Growth Theories, for instance, tend to focus on the effect of taxation and Government expenditure on the propensity to save and on the capital-output ratio, disregarding the direct influence of Government intervention on the rate of growth and the rate of profit.[11]

Finally, the debate on the role of the Government sector in the Post Keynesian theory of growth and distribution has pointed out the existence of some other common elements between the classical and the Keynesian traditions, allowing the reconciliation of two approaches to distribution, which had previously been considered alternative. These are the approach proposed by Kaldor and Pasinetti in their theory of growth and distribution and that implied by Sraffa's hint in *Production of Commodities* to take the rate of profit, rather than the wage rate, as the independent variable (determined, in turn, by the money interest rates) in the classical theory of prices and distribution.

7. Within the post Keynesian literature on growth it is possible to find two other lines of development attributing a primary role to autonomous demand. They contribute to the improvement of the analysis of the growth process, by describing its different aspects and the diverse kinds of influence that the autonomous components of aggregate demand can have on the rate of growth.

A first line of development focuses on the demand coming from the private sector in the form of autonomous investment. This literature presents several investment-driven growth theories based on different specifications of the investment function and different solutions to the problem of income distribution.

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[10] See Panico, 1997.

[11] Barro (1990) follows this line in his analysis of Government spending in an endogenous growth model.

The neo Keynesian theory, proposed by Joan Robinson (1956, 1962) and Kaldor (1957, 1961), assumes a direct functional relationship between investment and the rate of profit. The theory, which determines growth and distribution simultaneously, extends to long-period analysis the "paradox of thrift", according to which an increase in the propensity to save causes a reduction in the rate of profit and in the rate of growth. Moreover, it underlines the existence of an inverse relationship between the real wage rate and the rate of growth.

The Kaleckian theory, inspired Kalecki (1971) and Steindl (1952), which attracts the attention of a large number of Keynesian researchers[12], assumes that (i) productive capacity is not utilized at its "normal" level, (ii) the profit margin is an exogenous variable depending on the degree of monopoly enjoyed by oligopolistic firms, (iii) prices are determined through mark-up procedure, and (iv) investment is positively related to the rate of profit, which stands in for the state of expected profitability and the availability of internal finance, and to degree of capacity utilization, which reflects the state of aggregate demand. This theory confirms the neo Keynesian conclusion on the paradox of thrift and argues, in opposition to the neo Keynesian theory, for the existence of a positive relationship between the real wage rate and the rate of growth in the presence of long-run under-utilization of production plants. This result, known as the "paradox of costs", is due to the fact that the rise in the real wage rate brings about an increase in demand and capacity utilization, which has a positive effect on the rate of profit and on investment.

The Kaleckian theory has been recently amended by the works inspired by Bhaduri and Marglin (1990), which take into account the different effects produced on investment by the rate of profit, the profit margin and capacity utilization. By introducing an investment function positively related to the profit margin and to capacity utilization, these works identify a wage-led and a profit-led growth regime. In both cases, a rise in the real wage rate reduces the profit margin and increases capacity utilization. Yet, in the wage-led regime the overall effect of an increase in the real wage rate on growth is positive, as in the Kaleckian paradox of costs, because the positive effect on growth generated by the increase in capacity utilization is assumed to be greater than the negative effect on growth generated by the decrease in the profit margin. In the profit-led regime, the opposite result holds because the positive effect on growth generated by the increase in capacity utilization is assumed to be lower than the negative effect generated by the decrease in the profit margin.

Finally, an attempt has been made in recent literature to develop a neo Ricardian theory of growth, which moves from a classical theory of prices and distribution.[13] This theory, in opposition to the neo Keynesian and Kaleckian theories, assumes that the investment function depends on the discrepancies between actual and normal capacity utilization and underlines the

[12] See, among others, Rowthorn (1981), Dutt (1984, 1987, 1990), Boyer (1988), Boyer and Petit (1988; 1991), Bhaduri and Marglin (1990) and Lavoie (1992, 1995).

[13] See, among others, Vianello (1985, 1989, 1996), Ciccone (1986, 1987).

need to develop the analysis of growth through the comparison of long-period positions. Moreover, it makes the rate of profit depend on the money rate of interest, as suggested by Sraffa in *Production of Commodities*.

8. A second line of development of Keynesian literature focuses on the influence on growth of the demand coming from the foreign sector, a problem already considered by Harrod in the 1930's. This literature, which has provided some renowned contributions to the empirical analysis of open economies, plays down the role of distributive variables and is intertwined with the analysis of growth as a "cumulative process", .

In a series of essays, written between 1966 and 1972, Kaldor used the notion of "cumulative causation" to describe the actual performance of the economies. He attributed to the demand coming from the foreign sector the primary role in setting in motion the growth process. The domestic sources of demand mainly influence, instead, the competitiveness of the economy and the intensity with which the external stimulus is transmitted to the rate of growth. According to Kaldor, the composition of output and demand has an important influence on the rate of change of productivity, owing to the presence of variable returns in the different sectors of the economy and to the fact that increasing returns mainly occur in the capital goods sector. For Kaldor, high quotas of investment to aggregate demand and of the capital goods sector in the productive structure enhance productivity changes, which, in turn, improve the international performance of the economy setting up and intensifying cumulative processes. He distinguished between the concepts of "consumption-led" and "export-led" growth.[14] The latter, he argued, is more desirable than the former, which tends to have negative long-run effects on productivity and international competitiveness, since it increases the weight of non-increasing return sectors in the productive structure of the economy. This distinction was at the basis of Kaldor's claim, recalled above, that the maintenance of sustained growth in the future may be endangered by the use of fiscal policy, which, according to him, tends to increase the quota of consumption in aggregate demand.

In 1975 Dixon and Thirlwall presented an "export-led growth model", which formalized some aspects of Kaldor's views. Thirlwall (1979) and Thirlwall and Hussein (1982), on the other hand, gave important contributions to this subject by working out a dynamic analysis, which shows how growth may be constrained by the equilibrium of the balance of payments, playing down the operation of cumulative processes. In spite of this simplification, the empirical applications of the new analysis, which are able to account for the difference in the rates of growth among countries and the cumulative divergence in their GDP levels, have produced more satisfactory results than those of the 1975 export-led model. Recently Moreno Brid (1998-99) and McCombie and Thirlwall (1999) have extended Thirlwall's new analysis to take into

[14] See Kaldor (1971).

account the impact of the persistent accumulation of external debt on the economy's long-term rate of expansion. These extensions have opened new areas of research into the financial restrictions imposed by international credit institutions on the long-term economic growth of countries with persistent trade balance deficits.

9. In spite of the large consensus enjoyed nowadays by Say's Law and by the theories adopting it, there is a large amount of literature that focuses on the role of the autonomous components of demand on the rate of growth of the economy. This literature, by dealing with aspects of the growth process that are overlooked by other traditions, can provide a set of articulated ideas and analyses, which contribute to a wider view of the growth process. The aim of this presentation has been to attract the attention of the readers to these parts of economic theorising.

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