https://www.sciencedirect.com/science/article/pii/S0954349X17300590

https://doi.org/10.1016/j.strueco.2017.04.003

Giorgio Colacchio, Guglielmo Forges Davanzati, Endogenous money, increasing returns and economic growth: Nicholas Kaldor's contribution, Structural Change and Economic Dynamics, Volume 41, 2017, Pages 79-85, ISSN 0954-349X

Endogenous money, increasing returns and economic growth: Nicholas Kaldor's contribution

Structural Change and Economic Dynamics

Volume 41, June 2017, Pages 79-85

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Abstract

Nicholas Kaldor's contribution to economic theory covers a wide range of topics, elaborated in different historical contexts, such as theories of economic growth and the balance of payments, studies on interregional divergences and monetary theory. In most cases, historians of economic thought have devoted their attention to single aspects of his contributions. This paper aims at integrating Kaldor's monetary theory and his view of the relevance of increasing returns. It will be shown that, in Kaldor's view, economic growth is driven by increasing effective demand which, in turn, positively affects the path of labour productivity, and that this mechanism is fully in operation on the condition that the banking sector does not restrict credit supply.

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JEL classifications

B3

E4

04

Keywords

Endogenous money
Effective demand
Increasing returns

1. Introduction

Nicholas Kaldor's contribution to economic theory covers a wide range of topics, elaborated in different historical contexts, such as theories of economic growth and the balance of payments, studies on interregional divergences and monetary theory. Relatively little attention has been devoted to his contribution, and, in most cases, historians of economic thought have dealt with single aspects of his thinking.[1] This paper suggests that Kaldor's monetary theory and his belief that economic growth is driven by increasing returns can be integrated in a unified theory of capital reproduction. This theory is based on the following features: *i)* the banking sector can create credit-money *ex-nihilo*, i.e. without a previous collection of savings; *ii)* credit creation on the part of the banking sector allows firms to advance money wages and to invest, and the dynamics of effective demand affect labour productivity, via the operation of increasing returns. Accordingly, the rate of economic growth basically depends on the path of effective demand, mainly via the 'supply-side' effects deriving from its expansion. Importantly, the path of effective demand itself depends on the operation of the credit market.

As regards the first aspect, Kaldor's approach, as will be shown below, is very similar to the contemporary theory of the monetary circuit – also labelled monetary theory of production (hereafter MTP). Surprisingly, while contemporary circuit scholars consider Marx, Wicksell, Schumpeter and Keynes their "antecedents", they rarely mention Kaldor, who provided a more organic and consistent treatment of the endogenous money theory than the authors quoted above – Keynes included. Two reasons appear to be sufficient to explain why Kaldor's contribution to the endogenous money theory was more organic and internally consistent than that of Keynes.[2] First, Kaldor wrote on monetary issues in the period when Monetarism tended to become the dominant paradigm in economics, and – from the standpoint of the post-Keynesian approach – he put considerable effort into opposing it[3]; second, he benefited from Keynes's reflections on the nature of money and its functions, as stated, in particular, in his *Treatise on money*.

The aim of this paper is twofold. First, it focuses on his monetary theory in order to find its affinities and divergences with that proposed by the contemporary MTP. Second, it aims at enriching the basic schema of the MTP by integrating Kaldor's theory of endogenous money with his theory of economic growth. This exercise will show that:

a) The basic assumption of the MTP that the production process starts with credit creation on the part of the banking sector holds only in a very specific condition where public intervention is absent and where the monetary circuit develops in static terms. Moreover, it is to be stressed that the basic model of the MTP produces the same results independently of firms' technology.

b) Kaldor's contribution cannot be confined to a theoretical development of the Keynesian theory, and many aspects of his work can be interpreted as radically different from Keynes's theory (in particular, from Keynes's *General Theory*). In particular, as will be shown, Kaldor shows that variations of effective demand produce their most important effects on the supply-side, and that the formation of an effective demand function is not independent from the functioning of the credit market.[4] In this sense, Targetti's (1992) interpretation that Kaldor's contribution falls within the sphere of "radical Keynesism" is convincing.[5]
The exposition is organized as follows. Section 2 deals with Kaldor's monetary theory and its affinities and divergences with the contemporary MTP. Section 3 gives a brief account of the historical development of the analysis of returns to scale, while Sections 4 and 5 focus on Kaldor's theory of increasing returns. The reconstruction provided here is based on the comparison between Kaldor's approach and that of other authors he took into consideration (with particular regard to Allyn A. Young's contributions). Section 6 sums up the main conclusions of our investigation.

2. Kaldor on endogenous money and the monetary theory of production

Kaldor's theory of enogenous money presents some links with the monetary theory of production (hereafter MTP) as well as some important differences.[6] The MTP describes the functioning of a sequential economy which involves three macro-agents: banks, firms and workers. The banking sector creates money *ex nihilo*, in accordance with the idea that loans make deposits; firms advance the money wage bill and produce commodities; workers supply labour power. The circular process of the monetary economy starts with bargaining in the money market between banks and firms. Banks

supply firms with initial finance; firms need money in order to pay workers and to start production. For a given bargained money wage, they advance the money wage bill. After the production process has taken place the price level is determined so real wages are known ex-post. Income distribution among banks, firms and workers does not reflect the marginalist rules, depending on the relative market power and socio-political clout of the agents. The monetary circuit closes with the repayment of the initial finance to banks – the so-called "destruction of money" (see Graziani, 1990, Graziani, 2003). Since firms can only recoup the total amount of the initial finance (in the best case of unitary propensity to consume on the part of workers), there is the problem of how they can make sufficient revenue not only to pay interest, but also to make a profit. The failure to attain a monetary surplus can be seen as a theoretical problem if one rejects the conviction – supported, among others, by Graziani (2003) – that a "normal" level of indebtedness by firms towards the banking system is a key feature of contemporary capitalist economies, or that firms reimburse their debt in kind, since profits are obtained in real terms. In this context, state intervention, mainly through fiscal policy, is required in order to increase effective demand and employment, both in the short and in the long run (see Graziani, 1990, Graziani, 2003, Parguez, 2004; Poulon, 1982, Deleplace and Nell, 1996) and, importantly, expansionary fiscal policies are conceived as a fundamental device allowing capitalist monetary reproduction (and hence positive money profits for firms as a whole). This occurs both because public expenditure is an 'external' injection of liquidity which increases firms' money revenues and because fiscal policies act as an "anchor" for profits insofar as they modify entrepreneurs' expectations (cf. Parguez, 2004).
Kaldor's monetary theory is similar to that of the MTP on two grounds.

1) In opposition to the Monetarist view that money supply is exogenous, Kaldor stressed that the banking sector is not technically constrained in the creation of credit money (so that money supply is endogenous), and that the banking sector cannot manage money supply, being merely able to manipulate the interest rate. He emphasised that
"A given stance of monetary policy is best expressed by a chosen interest rate, and not by a chosen quantity of credit money in existence; and, whether the elasticity of the demand for money be large or small, the elasticity of supply of money given the chosen interest rate, is infinite" (Kaldor, 1989 [1981], p.109) and "the elasticity of supply of money, given the chosen interest rate, is infinite" (Kaldor, 1989 [1981], p.109).
And even more clearly,

"Credit money has no 'supply function' in the production sense (since its costs of production are insignificant if not actually zero); it comes into existence as a result of bank lending and is extinguished through the repayment of bank loans. At any one time the volume of bank lending or its rate of expansion is limited only by the availability of credit-worthy borrowers" (Kaldor, 1989, p.179).
Kaldor (1989, p.109, italics added) also clarifies that credit supply is demand-driven:

"If a business decides to spend more whether on building up its stock of raw materials or components, or hiring more labour, or paying higher wages to its existing employees … there will be an *automatic* increase in the money supply for the simple reason that the additional expenditure will swell the bank deposits of the recipients"
Moreover, as Kaldor (1996, pp. 32–33) wrote in his second Mattioli lecture: "What [Keynes] denied was that there is a necessary equivalence between the costs incurred in production and the demand generated by the costs incurred. […] the receipt obtained from the sale of output must *exceed* the entrepreneurs' outlays on production. If we supposed, for the sake of simplicity, that entrepreneurial outlays consisted entirely of outlays for hiring labour, than the total outlays of entrepreneurs as a group will be equal to the total income of wage earners. […] To make it possible for entrepreneurs as a class to realize a profit over and above the costs incurred, there must be an additional source of demand which is autonomous (or exogenous) in character which does not flow directly from income receipts generated by current production etc. etc.". This passage is relevant, insofar as it links Kaldor's theory of endogenous money to the *circuitist* view that, in the absence of external interventions, effective money profits are nil, and firms cannot reimburse their debt to banks (Graziani, 2003).
It should be pointed out that the view that the demand for credit is automatically satisfied by an equal supply of credit presupposes that banks are not reserve-constrained in their response to the demand for credit. In other words, it seems that Kaldor accepts an "accommodationist" view, so that the central bank responds passively to individual banks' demand for reserves by supplying the exact amount of the required reserves. Palley (2013, p.12), among others, provides a clear description of this approach: "The supply of monetary base … is horizontal at the policy determined money-market interest rate. The loans supply schedule … is horizontal at the loan rate which is a mark-up over the policy rate. Banks satisfy all loan demand forthcoming at this rate. Bank lending determines deposit creation and thereby determines the money supply. The central bank then adjusts the supply of reserves to back deposits created". In such a schema, *loans create deposits.* By contrast, Musella and Panico (in Musella and Panico, eds, 1995, p.56) argue that "the content of Kaldor's later writings makes it

difficult to argue that for him the supply of loans is a *non-discretionary* variable for the individual bank". This is because of his reference to "variations in the creditworthiness of potential borrowers", which led him – according to the authors – to conclude that "The reserve ratios … tend to vary over the trade cycle and to be unstable with respect to the interest rate". Musella and Panico (eds. 1995, p.57) maintain that "a horizontal money supply represents … the simplest (and probably the most convenient) hypothesis". These interpretations may not be considered radically divergent if one considers that Kaldor maintained a horizontalist view in the description of the functioning of a credit economy *at its highest level of abstraction*, while considering the cases of credit restriction and the pro-cyclicality of credit supply in dealing with the interpretation of current macroeconomic dynamics.
Such questions are relevant in this context because even if one attributes an accommodationist view to Kaldor, his theory of money supply departs from the conventional circuitist approach insofar as (at least in its basic schema) it supposes that credit creation can occur even in the absence of a central bank. More generally, the question of the logical necessity of the existence of a central bank in the logic of the monetary circuit is still open to debate.

2) In line with the circuitist view that expansionary fiscal policy affects money profits positively (cf. Parguez, 2004, Parguez, 2008), Kaldor maintained that increases in net public expenditure stimulate private investment, i.e. what one can define 'a monetary crowding in effect':
"Increased government loan expenditure raises private investment through the accelerator mechanism" (Kaldor, 1989, p.114).
However, Kaldor's approach departs from the conventional schema of the MTP on the following grounds.

First, contrary to the conventional circuitist view that the demand for credit expressed by firms only serves to advance money wages to workers (Graziani, 2003), Kaldor argues that credit is also used for investment[7]:
"Credit money comes into existence, not as a result of mining but of the granting of bank credit to borrowers, who use it (in the majority of the cases) to finance expenditures of a non-recurrent kind – such as those involved in the enlargement of stocks carried by manufacturers or traders, or their replacement of higher prices, or the purchase of plants and machinery" (Kaldor, 1989, p.184).[8]
Second, the basic schema of the MTP describes the functioning of a capitalist monetary economy in static terms, and apart from a few contributions (cf. Keen, 2009), circuitist

scholars have devoted little attention to the dynamics of the monetary circuit. As Targetti and Thirlwall ("Introduction" in Kaldor, 1989, p.3) clarified,
"[Kaldor] combines the territorial extension of the Keynesian model with the assumption of increasing returns to produce a model of disequilibrium growth analogous to Myrdal's model of 'circular and cumulative' causation which predicts the growing concentration of increasing returns in activities in certain localities which obtain an initial advantage, and the polarization in the levels of development between countries and between regions".

Third, circuitist scholars devoted very little attention to the structure of the industrial sector (cf. Messori and Zazzaro, 2005), so that the basic model generates the same results *quite independently of the technology they use*.
The next sections will deal with this issue, showing that the operation of the banking sector, in Kaldor's view, is crucial in affecting economic growth. This occurs because bank credit affects the path of effective demand and the path of effective demand, in turn, affects the dynamics of labour productivity, via the operation of increasing returns.

3. Returns to scale and economic equilibrium

As Edgeworth argued, in commenting on a passage by Carver (1904, p.65) concerning the proportion in which the various factors of production and the optimal plant size are combined,
"The same phenomenon of relative discontinuity appears to justify the distinction which Professor Carver has drawn in a passage of which the substance is as follows: Let X (acres of land) with Y (units of labour and capital) produce P product. Then (1) if X with aY produce more than aP (a greater than unity), we have a case of 'increasing returns'. But (2) if aX with aY produce more than aP, we have 'increasing economy of large scale production' […] even if different names are to be given to cases (1) and (2), it may be doubted whether the names proposed are the best. […] it is tenable, in the cases above distinguished as (1) and (2), that the terms 'increasing' or 'diminishing returns' had better be applied to the second case; while the phenomenon defined by professor Carver in the first case as Increasing Return had better be described as failure of the proper proportion between the factors" (Edgeworth, 1911, pp. 96–97).
Edgeworth's passage represents one of the first clear definitions of returns to scale to be found in the history of economic thought, and, as is well known, is the currently accepted definition in modern economic theory.

In non-rigorous terms, we can say that given a production process, the analysis of returns to scale requires the proportional variation of all factors of production: if the resulting proportion of output variation is more (less) than that of input variation, we say that the production process is characterized by increasing (decreasing) returns to scale; if the output varies in the same proportion as the inputs, we are in the presence of constant returns to scale.[9]

There are at least three points worth noting: a) Since the analysis of returns to scale involves the proportional variation of all variable inputs, it can actually be meaningful only in the case – with reference to production functions – of "homogeneous" or "homothetic" technologies, that is, in cases where the optimal proportion of inputs employed remains constant as the level of output increases; b) the analysis of returns to scale has nothing really "economical*"* about it, since it is concerned only with the technical properties of production processes: quoting Edgeworth (1911, pp.75–76) once again, this matter "has little to do with that character of the function *z* with which the entrepreneur is, and the economist should be, especially concerned, the fulfillment of the condition of a maximum" (the reference here is to the profit maximization process); c) returns to scale, with a particular regard to the increasing case, have nothing to do with changes in disposable technology, since they are a property of a *given* technological configuration (or, if you like, of a given production set).

Despite the limitations recalled above, the analysis of returns to scale would show a great persistence in the history of economics and, as is well known, the assumption of *constant returns to scale* was to become a fundamental element of the neoclassical paradigm. The explanation of this outcome may be traced back to logical factors (i.e., related to the internal consistency of the neoclassical paradigm) and more technical reasons. As to the former aspects, the stress on constant returns to scale was directly linked, from Wicksteed's 1894 pioneering contribution on, to the matter of income distribution, since constant returns guarantee the marginalist rule of distribution (i.e., the so called "product exhaustion theorem"). In many authors these aspects are intertwined in such a way that it becomes often impossible to ascertain which comes first, that is if constant returns imply the marginalist rule of distribution or if the latter requires the assumption of constant returns to scale. Furthermore, it is only in the presence of constant returns to scale that the free entry assumption, at whatever scale of operation, is preserved, thus implying no barriers to entry in a perfectly competitive market (as is evident, the case of increasing returns, for instance, would instead transform the market into an oligopolistic and/or monopolistic structure).

As to the "more technical" reasons, it should be noted that both decreasing and increasing returns to scale, in this technical sense, are difficult to justify: actually, the former could be counteracted by simply replicating "micro productive units", while the latter could only be explained through the indivisibility of some inputs – applicable only in very special cases – or for instance through an increase in the "division of labour". In any case, from the beginning of the 20th century it seemed reasonable that, after having reached the "optimal proportion of input employment", constant returns to scale should prevail (see for instance Wicksell, 1901, pp. 126–129).[10]

The inevitability of assuming constant returns to scale, if one wants to preserve the internal consistency of the neoclassical paradigm with particular regard to the proof of the existence of competitive equilibrium, is expressed in its most rigorous form in the context of general equilibrium economic analysis, in Debreu's (1959) *Theory of Value*. In particular, the assumption of perfect *divisibility* of commodities, combined with the assumption of *additivity* of production activities, led Debreu to define the production set as a convex cone, so ruling out the case of decreasing and, more importantly, increasing returns.[11] Actually, as Debreu frankly recognized,

"The convexity assumption is crucial because of its role in all existing proofs of several fundamental economic theorems. It is a limitation in that it rules out […] *incresasing returns to scale* (i.e., non-decreasing returns to scale with the existence of a possible production for which the scale of operations cannot be arbitrarily decreased)" (Debreu, 1959).

The considerations we have just reported allow us to understand why, in Kaldor's view, the emphasis on increasing returns was indissolubly linked with his stress on the insignificance of *economic equilibrium* as a speculative concept – with particular regard to the way it was conceived in the general economic equilibrium theory – and with his consequent belief in the irrelevance of *equilibrium economics* – as the title of one of his famous works says – as a theoretical field of investigation. As Kaldor (1972, p. 1237) stated,

"[…] in my view, the prevailing theory of value – what I called, in a shorthand way, 'equilibrium economics' – is barren and irrelevant as an apparatus of thought to deal with the manner of operation of economic forces, or as an instrument for non-trivial predictions concerning the effects of economic changes, whether induced by political action or by other causes"

adding a few pages later,

"It is generally taken for granted by the great majority of academic economists that the economy always approaches, or is near to, a state of 'equilibrium'; that equilibrium, and hence the near actual state of the world, provides goods and services to the maximum degree consistent with available resources; […] – all propositions which the *pure* mathematical economist has shown to be valid only on assumptions that are manifestly unreal – that is to say, directly contrary to experience and not just 'abstract'" (Kaldor, 1972; pp. 1239–1240).[12]

4. Increasing returns and economic progress

The choice of the title of Allyn Young's most famous work (Young, 1928) for this section is clearly not accidental, since, as is well known and as Kaldor himself recognized, this author – who was formerly his professor for a time (1927–28) at the London School of Economics – had a strong influence on Kaldor's theoretical position, with particular regard to both the theme of increasing returns and the connected instability of equilibrium. A quick account of the core of Young's theory of increasing returns may therefore prove of help in understanding Kaldor's position on this matter. As is well known, the starting point of Young's analysis was represented by Adam Smith's dictum that "the division of labour is limited by the extent of the market". However, as the size of the market increases, both the volume of production and the effective demand increase, since "the capacity to buy depends upon the capacity to produce" (Young, 1928, p. 532). This expansion of the market, determined by the increase in the volume of production, leads to "the growth of indirect or roundabout methods of production and the division of labour among industries" (Young, 1928, p. 529), which are the source, the root cause, of increasing returns spreading their effects across the whole economic system. Young's amendment of Smith's dictum is well known: "modified, then, in the light of this broader conception of the market, Adam Smith's dictum amounts to the theorem that the division of labour depends in large part upon the division of labour" (Young, 1928, p. 533). Before proceeding, there are some peculiarities of Young's theory worth noticing since, as we will see, we will meet them again – even though sometimes in a modified form – in Kaldor's theoretical works.

a) Young's reference to increasing returns is far removed from the "technical" definition we gave in the first paragraph, and nor can it be placed in the intense debate about economies/diseconomies of scale which took place in the 1920s (the reference is to the so-called *cost controversy*). Actually, the term increasing returns simply stands for that cumulative and endogenous dynamic process which we have just succinctly described, and it has very little to do with either the proportional variation of inputs or the

economies or diseconomies of scale (be they internal or external). Furthermore, inside these complex dynamical processes, the notion of equilibrium itself becomes a loose concept:

"New products are appearing, firms are assuming new tasks, and new industries are coming into being. *In short, change in this external field is qualitative as well as quantitative. No analysis of the forces making for economic equilibrium, forces which we might say are tangential at any moment of time, will serve to illumine this field, for movements away from equilibrium, departures from previous trends, are characteristic of it*" (Young, 1928, italics added p. 528).

b) Strictly linked to what we have just said, there is another important point worth mentioning: increasing returns, in this broader view, do not necessarily require the increase in the scale of operation of the various production units, since they may also be compatible with the increase of specialized, small sized firms.

c) In order to explain the propagation of the endogenous changes engendered by the presence of increasing returns, Young relied on the analysis of reciprocal demand. To put it briefly, the American economist maintained that if one assumes that two (or more) commodities, produced under condition of increasing returns to scale, are exchanged for one another, a cumulative enlarged process of economic expansion may take place provided that the elasticities of demand are sufficiently high.[13]

5. Kaldor's theory of increasing returns: the role of (effective) demand

As Kaldor wrote, referring to Chamberlin's (1948) criticism of his earlier article on the Equilibrium of the Firm (Kaldor, 1934):

"I have come to the conclusion that I ought to make a belated apology to the memory of the late Professor Chamberlin and acknowledge that he was basically right in his main contention – even though I was not persuaded by his arguments at the time. The point is of more than semantic interest since *if indivisibilities were the sole cause of increasing returns, there would always be some level of production at which such scale economies were exhausted and 'optimum scale production' reached."* (Kaldor, 1972; p. 1253, italics added).

Adding, a few lines later,

"The significance of all this depends on what is meant by the 'suppression of the proportionality postulate'. At one end, it may mean nothing more than the introduction

of discontinuities […] At the other end, it may mean that *the whole notion of Pareto-optimal equilibrium and of the price mechanism as a means of bringing about an 'optimal' resource-allocation becomes illegitimate*. […] if at any actual level of output the 'best' available technique for that output is less efficient than that available for somewhat larger output […] the choice among 'activities' becomes primarily a matter not of prices but of the scale of production. With every enlargement of production new 'activities' become profitable which could not have been employed earlier, *whilst the introduction of such new 'activities' leads to the invention of further 'activities' which have not been 'known' earlier*. The problem then becomes not just one of 'solving the mathematical difficulties' resulting from discontinuities but the much broader one of *replacing the 'equilibrium approach' with some, as yet unexplored, alternative that makes use of a different conceptual framework.*" (Kaldor, 1972; pp. 1254–1255, italics added).

From these quotations one can appreciate Kaldor's theoretical position on the theme of increasing returns. First of all, we find Kaldor's frank admission that he previously failed to understand, in his 1934 article, that increasing returns could not be traced back only to the indivisibility of (some) inputs: actually, if this were the case one would simply be in the presence of a sub-optimal scale of operation, that is, in the presence of "a failure of the proper proportion between the factors", in Edgeworth's words (see above, sect. 1). Secondly, we can see how Kaldor's broader interpretation of increasing returns – which echoes that of Young – as a cumulative endogenous process characterized by qualitative and quantitative transformations, requires us to move away from the "proportionality postulate" and the connected "equilibrium approach", since a "different conceptual framework" is needed.

Coming to a closer account of Kaldor's explanation of increasing returns,[14] according to him their dominating role in economic expansion should be traced back to the following main causes:

a) Some inputs are characterized by the fact that as their capacity increases, the deriving costs increase less than proportionally. This is a reference to the so called *six-tenths factor rule*: for some special inputs – think for instance of pipelines, oil tankers, cisterns, etc. – costs are proportional to their surface area, while their capacity is expressed by their volume, which increases proportionally more than the increase in the surface area (on this matter, see for instance, among others, Tribe (1986)).

b) The increase in the scale of operations, and then the expansion of the extent of the market, as Young already stated, fosters the adoption of more efficient production processes characterized by higher capital/labour ratios, so that "the capital/labour ratio in

production is a function of the extent of the market rather than of relative factor prices" (Kaldor, 1972; p.1242).
c) Strictly connected with the latter point – and as already Adam Smith, well before Young, had claimed – the increase in the extent of the market favorably affects the progression of learning-by-doing processes, inducing the discovery of new inventions and innovations which considerably improve the production techniques.

While the above considerations are very sympathetic to Young's (1928) contribution, Kaldor considerably distances himself from his former professor when he investigates the conditions that should be fulfilled in order for increasing returns to propagate "in a cumulative way". Here we arrive at a very important point which marks a distinctive feature of Kaldor's point of view on the matter.
As Kaldor remarked about Young's peculiar use of the theory of reciprocal demand, mentioned in the previous section,

"Young saw clearly that the combination of Say's Law with Adam Smith's theorem is not enough in itself to ensure that change is progressive and 'propagates itself in a cumulative way.' Something more is needed linking the effects of changes of production to demand […] *Lacking a theory of income generation such as was supplied by Keynes in the General Theory eight years later*, he thought that the necessary additional condition to ensure a continued chain reaction is to be found in the nature of reciprocal demand and supply functions – in other words, in the elasticity of Marshallian 'offer curves'." (Kaldor, 1972; p.1246, italics added).
However, as Kaldor pointed out, that process of endogenous cumulative growth stated by Young – where an increase in the supply of commodities produced under condition of increasing returns may be combined with an increase in their demand, and the latter, in turn, may be followed by a further increase in demand and so on – requires that "total income measured in terms of money is rising as well, which in turn presupposes that *total* expenditure […] rises in response to a rise in production" (Kaldor, 1972; p. 1247).
But, for this outcome to occur, some kind of *additional demand* is required, which the author calls "induced investment". As an example of induced investments, and with particular regard to more competitive markets, the author refers to the mode of operations of intermediaries, i.e., "merchants or dealers", when they – under the expectations that prices will increase or remain constant in the future – increase their stocks as the supply of commodities increases (so avoiding a fall in the prices of these commodities). As another form of induced investments, Kaldor cites the increase in

firms' investments in response to the increase in demand (for their products), in order to re-establish a desired inventory stock; however, this too requires that entrepreneurs have "positive expectations", now with reference to the future growth rate of the economy. We can summarize the implications of Kaldor's point of view, by saying that *potential* increasing returns may turn out to be *effective* if some favorable conditions are satisfied, with particular regard to the volume and the dynamics of effective demand: for instance, as is evident from what we have just said, it suffices that entrepreneurs and/or intermediaries have "pessimistic" expectations, to get quite an adverse outcome. Here we reach the point where Kaldor melds Young's theory of increasing returns with the Keynesian principle of effective demand: actually, as he goes on to say, while these favorable conditions were found in the 19th century, in "the present century, continued growth seems to have owed more to active government interventions – in the primary producing areas […]; in the industrialized country, through 'Keynesian' fiscal policies; both of which secured the continued growth of *real* purchasing power" (Kaldor, 1972; p.1252). These considerations allow us to go further ahead if we take it into account that (at least) part of the public expenditure may be "productive", in the sense that it may favorably affect the accumulation of capital and therefore the adoption of more mechanized production processes: if so, Keynesian policies would not only be the precondition for the existence of increasing returns, but also the way of fostering their positive effects on the economic system.[15]
However, in order to allow the expansion of production – in the presence or even in the absence of the public sector – there is another important pre-condition to be fulfilled, and it is simply the endogenous creation of money, since the "induced investments" we mentioned above require

"[…] above all, a monetary and banking system that enables capital investments to increase in response to inducements, so as to generate the savings required to finance additional investment out of the *addition* to production incomes. This is the real significance of the invention of paper money and of credit creation through the banking system. It provided the pre-condition of self-sustained growth" (Kaldor, 1972; p.1250).
Accordingly, the operation of increasing returns crucially depends on the propensity on the part of the banking sector to satisfy firms' demand for credit. In such a context, due to the increase in private investment and/or in public spending, effective demand increases and so does labour productivity. Hence, unlike the previous theories on increasing returns, to Kaldor they are not a purely technical factor, being profoundly affected by the Institutional setting, and, in particular, by the behaviour of the banking sector. This occurs through two channels. Effective demand increases as a result of

increasing public spending, which is possible if the central bank finances it, and/or as a result of increasing private investment, which is possible if the banking sector fully satisfies firms' demand for credit.

6. Conclusions

This paper dealt with Kaldor's contribution in the field of monetary theory and economic growth. It proposes a unified theory of capitalist reproduction, combining Kaldor's theory of endogenous money and his theory of increasing returns. It has been shown that economic growth crucially depends on the increase in labour productivity, which, in turn, depends on the dynamics of effective demand. Effective demand may increase as a consequence of expansionary fiscal policies and/or as a result of increased investment. In this scenario, the banking sector plays a crucial role, being a pre-condition for economic growth. The more the banking sector satisfies firms' demand for credit, the greater the investment, the higher the effective demand and labour productivity. Accordingly, the operation of increasing returns is not simply a mere technical matter, but crucially depends on political factors (i.e. the implementation of expansionary fiscal policies) as well as on the institutional setting, with particular reference to the propensity of the banking sector to behave in an accommodating way.

Acknowledgements

We are grateful to James Galbraith and Louis-Philippe Rochon for their helpful comments and suggestions. It goes without saying that only the authors are responsible for any remaining error.

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