Lilia Costabile[*]. **"Austrians" vs. "Dynamists" on money, cycles and growth: analytical features and ideological options.**

1. Introduction.

In a growing economy, dynamic equilibrium requires the coherence between saving choices and investment decisions, i.e. the equality between the fraction s of real income which is not used for consumption purposes, and the fraction υ which is used as capital in production, and hence is not available for consumption. This condition, under the assumption that the capital/ output ratio is a given constant, is equivalent to that stating that the output's rate of growth must be equal to the ratio between the propensity to save and the capital/ output ratio, as in the "Domar equation": $g^* = s/\upsilon$.

What happens when, starting from an equilibrium situation, investment decisions rise, while no matching saving decision occurs? Different answers are provided by different classes of models: in one class of models, this process merely leads to a maladjustment in production, to the disruption of capital, and to a downturn in economic activity. On the contrary, according to a different approach, it leads to capital accumulation (either of the "extensive" or of the "intensive" variety, according to the circumstances to be specified). In other words, growth may occur via a disequilibrium process.

The first approach is that taken by the "Austrians" who, in spite of the label, are not a geographical sub-grouping, but the exponents of an internationally spread branch of liberalism, who apply their liberal views to the explanation of the role of money in economic dynamics: Mises, Hayek and, more recently, Friedman and Lucas, are the exponents of this line of thought. The second approach is that taken by what I refer to as the "Dynamists", who do not regard growth as either determined or constrained by the volume of available savings, argue that monetary factors can permanently affect the time-profile of economic variables, and consider cyclical movements as an essential component of the process of economic growth. Schumpeter, Robertson and, later, some post-Keynesians (mainly Kaldor and Domar) belong to this stream of thought. Keynes also expressed similar ideas in the *Treatise on Money*.

What explains the different predictions of these alternative models?

I propose the idea that the theory of money, cycles and growth has always been one of the main battlefields where the ideological battle over the nature of market economies has been fought: in this field (more, perhaps, than in any other field) progress has consisted mainly in refinements in

[*] Università di Napoli Federico II.

the technical presentation of few basic ideas concerning the relationship between "market economies", dynamics, and "instability". This remark applies, in particular, to the "Austrian" approach. To be provocative and extreme: in these authors' works, the theory of money, cycles and capital can be interpreted, and will be interpreted in this paper, as a technically refined branch of political philosophy.

My purpose in the first part of this paper (sections 1 to 5) is to illustrate the interplay between the analytical features and the ideological options underlying the "Austrian" approach. The similarities as well as the differences between the old and the new versions of this approach will be illustrated. The main conclusions are as follows: (i) first, there is a basic continuity between the model of the Austrians and those of Friedman and Lucas; (ii) second, this continuity stems from these authors' common ideological precommittment to a conservative version of liberalism. These common ideological roots shape the analytical features of their models and, in particular, explain some of the striking similarities between the old and the new versions of the "Austrian approach"; (iii) the ideological bias of these authors influence the direction of their research, to the point that alternative lines of thought, entirely compatible with their analytical models, were abandoned when they conflicted with these precommitments. This point will be illustrated on the basis of a telling example, from *Mises's The Theory of Money and Credit*: as we will see, Mises came very close to demonstrating that monetary expansions may lead to capital accumulation rather than to "maladjustments" in intertemporal resource allocation, to be cured through a cyclical downturn, but he refused to pursue this idea because it was incompatible with his "preanalytical" comittments[1].

In the second part of this paper (section 6), a synthetic presentation of one version of the Dynamists' model of money, growth and cycles will be provided. This version is an elaboration on Robertson's themes, and serves the purpose of illustrating the process which enables the economy to grow "out of equilibrium"[2].

2. *The Austrians: Ideogical roots.*

In the "Austrian" approach I include some Austrian and American writers, who are characterised by their unlimited devotion to the flag of free market economies, and by having

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[1] It will be noticed that very little attention is devoted to Hayek in this paper. Hayek's variations on Mises's themes are analysed in Costabile (1998), where it is argued that his originality in developing the Austrian approach to money and cycles has often been overrated in the literature.

planted this flag on the theoretical territory of money, cycles and capital formation. In my opinion, new light is shed on the analytical features of the "Austrian" approach by an understanding of their ideological roots.

These writers hold to the view that "the chief blemish" of the market order, namely its "susceptibility to recurrent periods of depression and unemployment" (Hayek, 1978, p.14) is in fact to be imputed to external interferences with the market order itself. These interferences are of a special variety, since they are not the product of natural causes; rather, they are due to an "arbitrary influence - a political influence; i.e., one arising from the conscious intervention of human organizations", namely the State and its expression: governments (Mises,1924, p.226)[3]. The channel of this arbitrary influence is monetary policy. The link between money and cycles is thus established: money is the cause of cyclical instability, not of capital accumulation, because it is the instrument of governments' political power. The root of the evil is "the subjection of the value of money to the influence of political forces" (Mises, 1971(1924), p.396).

This central message is what confers to the "Austrian" approach its basic continuity, from Mises to Lucas. Mises had the merit of investigating its ideological roots. These roots, he argued, are in the liberal notion that the market economy is not only the best, but also the only possible system of organization of society, because it ensures that consumers' sovreignity is respected. On the one hand, the private property of the means of production shifts the ownership and control of resources into the hands of those who are best fitted to control production. On the other hand, through the market process, consumers signal their needs to entrepreneurs and capitalists, who are nothing but the passive executors of consumers' orders.

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[2] Section 6, which presents this model, draws heavily on my 1997 and 1993 papers on Robertson, where I have discussed at some length the relationships between his model and post-Keynesians models by Domar, Harrod, and Kaldor.

[3] All quotations from von Mises are from the 1971 reprint of his *The Theory of Money and Credit* This reprint is from the first American edition, which was published in 1952. The work is composed of Four Parts: the first three reproduce the first English edition, published in 1934 by the London School of Economics, with an Introduction by Lionel Robbins; the Fourth Part was added in 1952. The 1934 English edition , in turn, was based on the text of the second German edition, published in 1924 (with minor omissions, according to Lionel Robbins's 1934 Introduction). The first German edition had been published in 1912. Summing up, some of our quotations go back to what von Mises argued in 1924 (i.e. those contained in the first three parts of his book), while those included in the Fourth Part were originally written in 1952. In the text, I will refer alternatively to Mises (1924) and (1952).

It should be added that there is a perfect coherence between what von Mises argued in 1924 and what he had to say in 1952. Presumably, this coherence also extends to the first edition of 1912, at least if we have to judge from what he wrote in the Preface to the second German edition. In particular, these passages are worth reading: "The fact that the present work, although unaltered in essentials, is now published in a rather different form from that of the first edition is not due to any such reason as the impossibility of explaining new facts by old doctrines.[...] It is equally hard to understan how the assertion could have been made that the experience of recent years has necessitated a revision of economics. The tremendous and sudden changes in the value of money that we have experienced have been nothing new to anybody acquainted with currency history; neither the variations in the value of money , nor their social consequences, nor the way in which the politicians reacted to either, was new to economists." (1924, pp.23-24).

States and governments are necessary to preserve the working of the market economy, but they may turn into despots, and "turn their weapons against those whom they were expected to serve" (1952, p.413). Monetary policy is one of the weapons which the States may turn against the citizens, thus distorting the free working of the market mechanism. Thus the principle of sound money is part of the liberal defence of the individual's freedom against the interference of despotic governments: "It is impossible to grasp the meaning of the idea of sound money if one does not realise that it was devised as an instrument for the protection of civil liberties against the despotic inroads on the part of governments. Ideologically it belongs in the same class with political constitutions and bills of rights" (1952, p.414).

In this conservative version of liberalism, there is no role for State intervention in the economy; there are no "market failures" to remedy. The State should only act as the "minimal State", providing defence and police services, and avoid to interfere with the market process. Its intervention is a violation of consumer sovreignity, an offence to individual liberties. This is the basic reason why it cannot be but ineffective and disruptive in its economic consequences. As we will see in the remaining part of this article, the "Austrian" approach to business cycles is nothing but a set of variations of this basic theme.

Is this basic ideological attitude reflected in a genuine analytical continuity between the Austrian models and those of the American "Austrians"? Let us start our comparison between the older and the more recent versions of the "Austrian" approach by considering their similarities.

3. *Similarities between the Austrian and the American "Austrian" models of the business cycles.*

The basic idea, illustrated above, concerning the negative consequences of monetary "interferences", leads to the statement that the essence of monetary policies is the intentional deception of the public. These policies are effective only in so far as, by messing up the price mechanism, they succeed in deceiving private agents. This, as is well known, is an idea shared by Friedman and Lucas. Mises expressed the same view when he argued that inflationism is "a policy concerning whose aims and intentions public opinion can be longest deceived" (von Mises, 1971 [1924], p.231).

Following this train of thought, Mises anticipated Friedman's notion that inflationary policies are ineffective: "such a policy of deceit is self-defeating", because "you can't fool all the people all the time. Eventually the masses come to understand the schemes of their rulers. Then the cleverly-concoted plans of inflation collapse" (von Mises, 1971, [1952], p.419).

These ideas have developed into Friedman's and Lucas's analytical models, giving rise to the notion that a noisy (as we would call it to-day) monetary policy confuses price signals and may trigger "spurious" quantity adjustments, i.e adjustments which would not occur in the absence of the government's inflationary policies. In Friedman's critique of the Phillips curve, inflation only works in so far as agents confuse changes in the general price level with relative price changes. In Lucas's language, uncertainty about the inflation rate generates an "extraction problem", i.e. the problem of distinguishing between the two sources of price disturbance: the monetary factors, which affect the general price level, and the relative price effect. Mises's clear statement of the "extraction problem" is worth reproducing at length, with the proviso that its understandable, pre-rational expectation emphasis on the public' s dullness makes his analysis more germane to Friedman's treatment of the Phillips curve, than to Lucas's treatment of the supply function:

"In normal times, that is in periods in which the government does not tamper with the monetary standard, people do not bother about monetary problems. Quite naively they take it for granted that the monetary unit's purchasing power is 'stable'. They pay attention to the changes occurring in the money prices of commodities. They know very well that the exchange-ratios between different commodities vary. But they are not conscious of the fact that the exchange-ratio between money on the one side and all commodities and services on the other side is variable too. When the inevitable consequences of inflation appear and prices soar, they think that commodities are becoming deared and fail to see that money is getting cheaper. In the early stages of inflation only few people discern what is going on, manage their business affairs in accordance with this insight, and deliberately aim at reaping inflation gains. The overwhelming majority are too dull to grasp a correct interpretation of the situation. They go on in the routine they acquired in non-inflationary periods (...) This ignorance of the public is the indispensable basis for inflationary policy. " (Mises, 1971[1952], pp.418-419)[4].

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[4] This passage goes on as follows: "Inflation works as long as the housewife thinks: "I need a new frying pan badly. But prices are too high to-day; I shall wait until they drop again'. It comes to an abrupt end when people discover that the inflation will continue, that it causes the rise in price, and that therefore prices will skyrocket infinitely. The critical stage begins when the housewife thinks: 'I don't need a new frying pan to-day; I may need it in a year or two. But I'll buy it to-day because it will be much more expensive later'. Then the catastrophic end of the inflation is close. In the last stage the housewife thinks: 'I don' t need another table; I shall never need one. But it's wiser to buy a table than keep these scraps of paper that the government calls money, one minute longer'. " (von Mises, 1971[1952], pp.418-419). The idea here is

The problem under examination is undoubtedly the same problem investigated by Lucas, i.e. that of price signals processing to the purpose of decomposing them into the general price and the relative price component, and the supply side effects of this process, as the following passage furtherly clarifies: "In such circumstances [i.e. in the transition to price stability to inflation], he [the seller] sees that these prices are paid, thinks that the profits of his business are increasing proportionately, and only gradually discovers that the fall in the purchasing power of money deprives him of part of the advantage he has gained (...) It cannot be denied that much of this passing-on of price-increases has indeed reduced the value of money, but has by no means altered the exchange-ratios between other economic goods in the intended degree"[5].

It is also worthwhile to stress that Mises seems to be aware that what generates confusion is not inflation per se, but *uncertainty* concerning the rate of price changes, or, to tell it in Lucas's terms, changes in the "degree of price variability" (Lucas, 1977, p.231). This awareness is reflected in his fucussing, in the passage above, on the transition from "normal times" to times when the government starts to "tamper with the monetary standard".

Mises, as it is only too obvious given the time when he was writing, did not anticipate either Friedman's conclusions in terms of the inflation-unemployment trade-off, or Lucas' s solution to the "signal extraction problem" in terms of the agents' conditional expectation of the price level, given the knowledge of the actual price they observe in their market. Nevertheless, I hope to have been able to attract attention on what he did anticipate: the analysis of how a noisy monetary policy interferes with the price mechanism, and the consequences of this interference on private agents' signal processing problem.

It should be noticed that the passage quoted above is also interesting because it links the notion illustrated above to the additional idea that inflations have redistributive effects, a theme which characterizes the Austrian School as represented in the works of Mises and Hayek, but has been largely ignored by their American heirs. We will return on this difference below.

Another similarity concerns what is to-day called the "propagation mechanism", i.e. the mechanism explaining the persistence of both the expansionary phase and the depression. In Lucas's 1977 model of the business cycles, the propagation mechanism is the "overinvestment" in capital

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that the expansionary phase of the cycle may end up in hyperinflations, if the expansionary policy is pushed too far. Mises had already developed this idea in 1924.

[5]It should be stressed that Mises hastened to add, "in order to guard against any possible misunderstanding", that not all price increases only affect the price level, and that in general relative prices are also affected in the course of the inflationary process (Mises, 1971 [1924], p. 64). On the effects of inflation on relative prices see below, p…...

equipment induced by inflationary policies. This is a distinctively Austrian proposition, which Lucas, the American heir, borrows from his European predecessors: monetary policy (monetary "surprises", for Lucas) generates a large flow of investment which is not justified by the underlying real structure of incentives and opportunities.

Although the consequences of overinvestment are the same in the older and the newer models, the mechanism which gives rise to "overinvestment" is different. For Lucas, the rise in the price level generates a three way signal extraction problem: not merely that of distinguishing between relative price and general price movements but, in addition to this, that of distinguishing between temporary and permanent rises in relative prices. Temporary changes in relative prices generate adjustments in the labour supply, while permanent changes induce a rise in investment. A monetary "surprise" may generate the mistaken impression that a permanent relative price increase has occurred, and may thus lead to a "mistaken" expansion in investment. The long lags connected with capacity creation generates the observed cycle persistence. Thus at the root of overinvestment there is a product price effect, not, as in the Mises-Hayek theory, the interest rate effect, which will be illustrated below[6]. Neverthless, the consequences are the same: "there is a downturn automatically built in to this expansion of capacity" (Lucas, 1977, p. 231). Since "too much" capital has been created, the excess capacity has to be get rid off: according to Lucas "investment will have to be less than normal for a time while capacity readjusts downward" (Lucas, 1977, p.231); for Mises and, later, for Hayek, the production process leading to the creation of this excess capacity will have to be abandoned, and capital destruction will occur.

Having thus indicated the main similarities between the modern "Austrians" and their predecessors, let us look at the differences.

4. Differences between the Austrian and the American "Austrian" models of the business cycles.

The first thing to notice is that, in Mises's approach, and differently from the American "Austrian" models, any change in the money supply affects relative prices and produces distributional effects. The second difference concerns the "transmission mechanism" from changes in the money supply to price and quantity adjustments, i.e. the commodity price effect vs. interest rate effect already hinted at above. These two points are closely related, since in both cases what happens in the predecessors', but not in their American heirs' models are real, not merely perceived, relative price effects. It is true that the common conclusion, towards which both the older and the more recent "Austrian" models point, is that "inflationary" monetary policies disrupt the signalling

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[6]This difference was noticed by Lucas himself: see Lucas, 1977, fn. 15 p.237.

function of the price mechanism and negatively affect the economy's working. Neverthless, the analytical mechanisms are different.

In order to illustrate this difference, we have to look at the Austrian model in some details.

Mises, who was one of the founders of the neoclassical "cash balance" approach to monetary theory[7], was critical of the mechanical versions of the Quantity Theory, and in particular of the latter's proposition that any change in the money supply results in an equiproportionate change in the price level[8].

Mises was explicit that the level of prices is equiproportional to the quantity of money only in a comparative static sense: if two economic systems are compared, which are identical under every respect, except that the first is endowed with twice as much money as the other, then the price level in the former system is double than in the second. But, he argued, from this it does not follow that the equiproportionality proposition also holds true in the *dynamic* sense: doubling the quantity of money in a country will not lead to a doubling of the price level.

The equiproportionality proposition, he argued, derives from the untenable assumption that the new money is distributed exactly in proportion to each individual's existing money holdings[9], which is equivalent to assuming distributional effects away. In reality, the new money is always injected into the system at particular points. Consequently, the relative wealth of individuals is affected, and so are relative prices: the relative prices of the goods favoured by individuals whose real wealth has increased rise more than those of the goods favoured by individuals whose relative wealth has fallen. Through its effects on the incomes of the sellers of the different cathegories of goods, this process leads to a change in income distribution[10]. Thus, the effects of money on relative prices and its distributional effects are parts of the same process. According to Mises, these effects had been overlooked, or deliberately ignored, by the exponents of the mechanical versions of Quantity Theory, which he criticised for this reason. He probably would have objected to the practice, by his American descendants, of assuming these effects away.

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[7]On this point see Patinkin (1965), particularly chap. 8, and n. 18 p. 167. For Mises's development of the cash balance approach *and* of the real balance effect (i.e. the relationship between the *stock* of money and the demand for money and commodities) see Mises (1971, [1924], particularly pp. 132-135, 138-140. Patinkin does not seem to give Mises the full credit which he deserves for the elaboration of the real balance effect. Moreover, he recognises, but fails to stress, the importance of Mises's critique of the equiproportionality proposition.

[8]See Mises,1924, p.129; 139-145; 206-212. A particularly clear statement of his point of view is on p.141.

[9]See his criticism of Hume, Mill and Fisher (Mises, 1924, pp. 140- 145). Mises' s criticism was based on two arguments, one of which is correct (i.e. that a change in the money supply will determine distributional effects) and the other incorrect (i.e. that the equiproportinality proposition presupposes an inverse relationship between the quntity of money and its marginal utility). On the latter point see Patinkin (1965, p.575).

[10]"Variations in the value of money always start from a given point and gradually spread out from this point through the whole community. And this alone is why such variations have an effect on the social distribution of income" (Mises,1924, p.207; see also pp.139-140).

Mises went further and, in order to analyze the effects of changes in the quantity of money on relative prices and income distribution, developed a distinction (1924, p.134) between the case when the only money in circulation is money "in the narrower sense", or "money proper", and the case when, in addition to this, also "fiduciary money" is accepted as a means of exchange. By "money proper" he meant commodity money, fiat money, and what he defined as credit money, i.e.that money which arises out of loans from *existing* purchasing power. By fiduciary money he meant all money certificates which are not covered by the reservation of correspondings sums of money proper, and are accepted merely on account of the trustworthiness of their issuing bodies (1924, p.133; also pp.261-277).

Let us start with the first case.

If all "money proper" were "metallic money", the quantity of money would be exogenous to national policies, and would merely depend on the world production of the precious metals (1924, pp.208-209; p. 219). However, in modern times, most of the circulation of "money proper" is fiat money, whose supply is under the direct control of the monetary authorities. Theirs is the responsability for the "social consequences" of increases in the quantity of money. These consequences include:

(i)a redistribution in favour of the issuing authorities themselves, if they use the new money for direct purchases (the inflation tax, 1924, p.202 and p.222-224), or in favour of those into whose hands the new money accrues first (such as, during wartime periods, war contractors) (1924, p.210);

(ii)a redistribution in favour of all those whose money incomes rise as inflation, such as entrepreneurs, and against all those whose money incomes lag behind prices, such as wage earners and public officials (to the extent that they do not organize on trade-unions lines, a circumstance which enables them "to secure a quicker response to demands for increases of salaries") (1924, p.211);

(iii) a redistribution from creditors to debtors, which is due to the fact that the money interest rate does not adjust to cover the depreciation of loans, and which, in the end, discourages saving and has negative effects on capital accumulation. Indeed, inflation leads to "capital consumption through falsification of economic calculation", and "the appearence of the boom that it creates is an illusion" (1924, pp.195-201 and p.221).

These bad "social consequences" are greatly exacerbated in the second case considered, i.e. when there is also fiduciary money. Since this type of money is accepted merely because its issuers (the State and the banks) are regarded as trustworthy, it does not need to be, and is not, backed by any reserve of money proper. It is created out of nothing, and has no fixed quantitative relationship with the quantity of money proper existing in the economic system. Additional evils derive from

this circumstance: the process of capital accumulation is interfered with, and this is the basic root of economic fluctuations.

Mises derived his articulated model of economic fluctuations from a combination between Bohm-Bawerk's theory of capital and Wicksell's analysis of the banking sectors' interest policy.

One way to illustrate the Austrian theory of capital (which Mises borrowed from Bohm Bawerk, although with some reserves: see Mises 1924, n. 1 p.339) is to consider all capital as circulating capital[11], employed in production processes of different lengths. Assuming a given labour force, a lengthening of the period of production requires more working capital per man, for two reasons: firstly because, the longer the production process, the more intermediate goods workers require to work with, and, secondly, because workers have to be supported for the whole length of the longer production process.

A lengthening of the period of production, i.e. the adoption of more roundabout methods, leads to increased production, but production rises at a rate that diminishes as the length of the process increases (1924, p.361). Such a lengthening will only be undertaken by entrepreneurs if the marginal return which they earn on one additional unit of capital invested is just greater than the interest which they have to pay on this additional unit to capitalists, from whom they borrow, either directly or through the intermediation of the banking sector. Thus the length of the period of production is determined, in equilibrium, by the condition that the rate of interest must be equal to the marginal return of investment [12], and this lentgh must be such that "the whole available subsistence fund is necessary on the one hand and sufficient on the other for paying the wages of the labourers throughout the duration of the productive process[13] (ibid., p.360).

However, equilibrium may be disrupted by the banking policy.

It was in this connection that Mises adopted Wicksell's distinction between the Natural and the Money interest rate (see in particular 1924, pp.359-364; the former rate was sometimes also defined by him as the Equilibrium rate). The Natural Rate of interest is the rate that would emerge if the borrowing were made without the intermediation of money (Ibid., p. 118), or if the banking sector acted as a pure intermediary between borrowers and lenders. Under these conditions, any lengthening of the production period could only take place if the additional resources had been

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[11] See, e.g., Blaug, 1968, p. 503.

[12] "The level of the natural rate of interest is limited by the productivity of that lengthening of the period of production which is just justifiable economically and of that of the period of production which is just not justifiable; for the interest on the unit of capital upon whose aid the lengthening depends must always amount to less than the marginal return of the justifiable lengthening and to more than the marginal return of the unjustifiable lengthening" (Mises, 1924, p. 360).

[13] Mises added: " For if it were shorter, all the workers could not longer be provided for throughout its whole course, and the conbsequence would be an urgent offer of the unemployed economic factors which could not fail to bring about a transformation of the existing arrangement". This is a rather indirect way of stating the assumption of full employmeny.

made available either by capitalists's (i.e. those who live on rent from capital) increased savings, or by the producers themselves, via a voluntary reduction in their standard of living[14]. In either case, saving is the necessary condition of capital accumulation, in the form of a lengthening of the production period.

All this changes when the bank stops behaving as a pure intermediary. Mises had the following points to make regarding the banks' money supply.

His first point was a distinction between the two roles performed by the banks: one is that of an intermediator between borrowers and lenders, as reflected in "the English definition of a banker as a man who lends other people' s money" (p.270); the other, far more important role, is that which pertains to banks entitled to the right of note issue, and of carrying on current account business. While, in the former role, banks simply transfer purchasing power *which already exists* from the hands of the lender to those of the borrower, in their second role banks create new purchasing power, as they make loans "out of a fund *that did not exist before the loans were granted*" (p.271, emphasis in the original).

His second point was that there are no limits to the expansion of fiduciary media by the banking sector, in excess of "money in the narrower sense", or "money proper", provided the single constituent banks adopt a uniform interest rate policy (the single bank could not adopt a policy different from those of the other banks, because it would soon run out of reserves). By reducing the interest rate which they charge on loans below the natural rate, the banks induce an extension in the money demand which has no limits but the banks' own willingness to lend (if they wanted to, the banks could reduce the money interest rate to a level just sufficient to cover the technical costs of producing bank money, which are very low).

Mises assumed, as most monetary theorists of his time, that the demand for money which is directed to the banking sector is basically the entrepreneurs' demand for investment purposes, i.e. what Keynes would later call the "finance" demand for money. This is why the divergence between the natural and the money interest rate stimulates the demand for money. Thus, the supply of money responds elastically to the demand for it, and the latter is influenced by the banks' interest policy[15].

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[14] "A lenghtening of the period of production is only practicable (..) when either the means for the subsistence have increased sufficiently to support the labourers and entrepreneurs during the longer period or when the wants of producers have decreased sufficiently to enable them to make the same means of subsistence do for the longer period" (Mises, p. 361. From the context, I interpret Mises as arguing here that the increase in the means of subsistence, referred to in the first part of his sentence, derives from an abstention from consumption by capitalists).

[15] "They [the banks] are in a position to satisfy all the requests for credit that are made to them. But the extent of these requests depends merely upon the price that they demand for granting the credit"(p.310). Consequently, there are no grounds for the opinion that the bank cannot create an amount of money in excess of what is required by the needs of commerce. This was the essence of Mises' s critique of the Banking School, whose opinion just reported is also known as the "real bills doctrine"(see pp.342-345).

The reduction of the interest rate below the natural rate induces an artifical lengthening in the structure of production, which "is in the last resort inadmissible and impracticable", since it has no justification in the underlying real data, as no new saving has occurred. The basic point which Mises is trying to make is that an increase in saving, had it occurred, would have reduced the natural rate of interest, and this reduction would have signalled the greater willingness of savers to abstain from current consumption. The essence of the disequilibrium process is that, by lowering the money interest rate, the banks artificially distort relative price "signals". A lower interest rate induces entrepreneurs to undertake a lengthening of the production period; but, in this case, there is no real saving to "back" the longer production processess.

The longer production processes thus set in motion require that goods and labor be subtracted from the "lower" production stages, where consumption goods are produced, and devoted to the production of a greater quantity of intermediate products. Consequently, the production of consumption goods is reduced just when more of these goods are required to support workers for the longer production processes just started (p.362). There is a shortage of saving, and this is what makes it impossible to complete the longer production processes which have been induced by the false price signals.

A "crisis" is unavoidable: the longer production processes will be abandoned, because the relative scarcity of consumption goods will resolve itself in a new change in relative prices, which reduces the profitability of the longer production processes. Moreover, the banking sector cannot pursue its expansionary monetary policy indefinitely, because "such an avalanche of fiduciary media" (p.363) would lead to a great fall in the value of money, and consequently, to panic. As a consequence, the money interest rate will also start to rise.

The general result is a net loss of resources for the community as a whole. This is so because, although some resources will be reallocated from the longer towards the shorter production processes, still the maladjustment in their use is not entirely reversible, and some of them must be left "entirely unused, or at least used less economically" (p.364).

Let us draw the morals of this story: the banking policy disrupts the price mechanism, which serves as the vehicle for consumers to express their sovreignity through the market process: the market retaliates by re-establishing the true price signals, but only at the cost of the destruction of the value of economic resources: monetary interferences are, at one and the same time, ineffective and disruptive of the economic order. We may conclude this section by saying that Mises reached the same conclusion of his American descendents, only through a more "roundabout" analytical route.

5. The effects of monetary expansion on capital accumulation: Mises second view.

As we have seen, the basic message of Mises's approach to business cycles was that consumers' sovreignity can be interfered with only at the cost of a net loss for the community as a whole. Moreover, this interference is bound to be ineffective.

However, although certainly the best suited to the "Austrian" ideological precommittment, Mises's conclusion is not granted, since its analytical underpinnings are not watertight.

Firstly, it is not clear why the reserve requirement limit on the expansion of banks' loans should become effective *before* the more roundabout production processes are completed, and their fruits, in the form of an increased total production, made available to the population. If the low interest policy continued until this new production were available for consumption, then the increased demand for consumption goods could be satisfied at constant prices, and the "disentaglment" of resources from the longer production periods would become unnecessary. This criticism is particularly appropriate because the untimely rise in the interest rates charged by the banking sector, with its catastrophic consequences, was defined by Mises as unavoidable, but no good reason was provided for this unfortunate timing (p.363-365).

Secondly, Mises's argument is based on the notion that capital formation must be curtailed when consumption rises, but this is certainly not the case if there are unused resources. In this case, increased investment would generate increased incomes, out of which both saving and consumption could be raised. Under these circumstances, saving is not a constraint on capital formation.

Thirdly, even assuming full employment, Mises's assumption that the only "maintainable" rate of investment is that determined by the existing volume of voluntary saving is not convincing. In alternative models of cycles and growth, such as the "Dynamists' models", the maintainable rate of investment is rather determined by the new profits opportunities opened up by population growth and technical progress. In this context, it may well happen that the available amount of saving is insufficient to finance the volume of investments which would allow these new profits opportunities to be fully exploited. Under these circumstances, the extension of the money supply is a most effective means for promoting economic growth: this extension will redistribute incomes in favour of the "rich" classes of society, and of business profits. Under reasonable assumption concerning the difference in the saving propensities of the different classes, this redistribution leads to a higher average propensity to save. The equality between investment and saving will thus be

achieved via changes in income distribution. This process, as is well known, is at the heart of the post-Keynesian models of economic growth.

Of the three criticisms just considered the third one is the most fundamental, because the process it describes is valid under Mises's own assumptions. Paradoxical as it may seem, Mises was perfectly aware of this process and of its consequences, but deliberately refused to make it central to his argument. This tells a lot about the influence of the Austrians' ideological precommittments on the analytical development of their approach.

At several points in his argument, Mises anticipated the "dynamic" and, in particular, the post-Keynesian, rather than the "Austrian" story: he recognized explicitly that a monetary expansion can indeed lead to a *permanent* increase in the capital stock via its distributional effects and its consequent effects on total saving. But, every time he indicated the possibility of this permanent effect, he withdrew, announcing his purpose not to pursue this line of argument any further, as if horrified by the view which his own analysis had disclosed to him: the effectiveness of monetary policy in inducing a permanent in crease in the community 's wealth, through a violation in consumers' sovreignty.

Thus, in addressing the debated question whether an increase in the quantity of money could result in a rise in the community's wealth and welfare, his answer was that such an increase could lead directly only to a change in the distribution of economic goods, not to an increase in their quantity. But he had to recognize that, neverthless, the *indirect* effect may well be an increase in the total amount of goods. This would occur "in the same way in which any change in distribution may affect production as well; that is, by those classes in whose favour the redistribution occurs using their additional command of money to accumulate more capital than would have been accumulated by those people from whom money was withdrawn". His abrupt escape from this admission took the following form: "But this does not concern us here"(p. 208); a sentence to be echoed in similar statements whenever, in his analysis, he bumped into the permanent effects of monetary expansion on capital accumulation.

In several passages, he was explicit that a change in the money supply could bring about a change in the average propensity to save, and, consequently, an increase in the maintainable rate of accumulation (see e.g.pp.347-348). In one of these passages, he argued that the banks themselves, being the issuers of the fiduciary media, may reap the benefits of an increase in the quantity of these media, and that this redistribution of income in their favour "is particularly favourable to the accumulation of capital, for in such a case the issuing body employs the additional wealth that he receives solely for productive purposes, whether directly by initiating and carrying through a process of production or indirectly by lending to producers". This passage shows beyond any

reasonable doubt that Mises was aware that the effects of a monetary expansion on capital accumulation depend entirely on the use to which the resources released through the rise in the price level are devoted; and, moreover, that the effectiveness of this process is totally independent on the "sovreignity" of the original owners of these resources. Mises's conclusion was that "there is a high degree of probability that extensive issues of fiduciary media by the banks represent a strong impulse towards the accumulation of capital and have consequently contributed to the fall in the rate of interest" (pp.349-350).

Following this line of argument, in his analysis of the relationships between the natural and the money interest rate, he reached the embarassing conclusion that an increase in capital accumulation stimulated by a monetary expansion would determine a fall in the natural rate of interest itself, thus contradicting his own view that the money rate should sooner or later converge towards the natural rate. This passage is particularly interesting as it occurs in the middle of the central argument illustrating the destructive effects of the banking policy on the intertemporal allocation of resources. In his own words: "So far as these factors [i.e. the rise in the average propensity to save] enter into consideration, an increase of fiduciary media does cause a diminution of even the natural rate of interest, as we could show if it were necessary". But, again, he hastened to withdraw from such a disturbing result, which would have been sufficient to overthrow the whole sense and conclusions of his reasoning, with the embarassed and astonishing sentence which follows: " But the case that we have to investigate is a different one. We are not concerned with a reduction in the natural rate of interest brought about by an increase in the the issue of fiduciary media, but with a reduction below this rate in the money rate charged by the banks"(pp.361-362).

Thus, as we have documented, it was neither analytical incompatibility nor analytical incompetence which led Mises to be the father of the "Austrian" rather than of the "dynamic'" approach to growth and cycles (as represented by Schumpeter, Robertson and the Post-Keynesians). It was his ideological precommitment: the same kind of ideological precommitment which underlyies the modern American "Austrian" diagnosis of the causes of business cycles.

Growth out of equilibrium in the "Dynamists'" approach.

In this concluding section, a synthetic exposition of one version of the Dynamists' model will be presented, to the purpose of demonstrating that, in a situation like that envisaged by Mises, i.e. when investments exceed voluntary savings, growth may occur "out of equilibrium". Saving decisions will be simply frustrated, to the extent that they differ from the exogenously determined amount of investment: the necessary equality between investment and saving being achieved via changes in the price level and, consequently, in the distribution of income. These ideas were

common to some pre-Keynesian writers, particularly to Schumpeter and Robertson (though the lines of their reasoning were not identical), and were later developed by the authors of the "post-Keynesian" approach to growth.

According to this approach, capitalist economies are dynamic economies: their very essence is a continous push towards change and progress. The process of economic growth in this type of economy is not the authomatic product of either the growth of exogenous factors, or of the accumulation of savings. These factors may explain growth in equilibrium, or steady growth. But, as Robertson argued, the most important episodes of economic growth in capitalist economies have occurred by inflicting a disequilibrium process on the "general public" of consumers-savers, with regard to their intertemporal plans. Or, as Schumpeter maintained, growth in capitalist economies is always a disequilibrium process: a dynamic phenomenon from which steady growth (i.e. the process dictated by the growth of exogenous factors, or by the investment of accumulated savings) is excluded, just like a stationary state is excluded from it (see e.g. Schumpeter, 1989 (1927), p.25).

In the process of growth out of equilibrium, the pace of economic dynamics is set by investments, which are discontinous in their character: this is why growth is a cyclical process[16]. It is just "the explosive forces of industrial progress" that inevitably generate "industrial instability", that is: the trade cycle (Robertson, 1993, (1926), p.27). To tell it with Schumpeter, cyclical fluctuations are "the form that progress takes in a capitalist society" (Schumpeter, 1989 (1927), p.30).

Thus, contrary to what the "Austrians" argue, cycles are not due to an external interference: as soon as we abandon a purely static concept of the market, and consider its dynamic workings, cyclical fluctuations will appear as an essential part of the market mechanism itself. More precisely, cycles are the form of economic growth in a market economy based on capital accumulation. Thus, cycles are not a pathology inflicted upon the private sector by an external authority. Rather, they are, at least partly, an "appropriate" phenomenon: the sympthom of the economic system's good health, of its enduring propulsive force, of its ability to develop.

The link between growth and cycles is deeply embedded in the institutional settings of capitalist societies, or, as Robertson put it, in their "technical and legal structure". This structure was identified by Robertson in the fundamental conflict between "Capital" and "Labour" (Robertson, 1993, (1926), pp.26-27), while Schumpeter gave more importance to the dynamic competitive process among "entrepreneurs". Both Robertson and Schumpeter assigned a central

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[16] Robertson's and Schumpeter's models have in common this feature, i.e. the central role to fixed capital in the process of cyclical growth

importance, among the institutional features of capitalist economies relevant for the dynamic process of growth, to the banking system in its functions as a *creator* of purchasing power.

The "pre-analytical" view of capitalist economies underlying this class of models is also "liberal", but of a different variety than that implied by the "Austrian" approach. Here the private sector is not supposed to be "stable" in itself, and subject to the destabilizing influence of the public sector. Inflation (in upturns) and deflation (in downturns) are not prices paid by the private sector to an external authority, supposed to behave like a predator in its policy intervention; rather, they are a price which the private sector pays to itself: the price for economic progress and growth, a price that, in spite of the sacrifices thus inflicted on some sections of the society, is well worth the while to pay.

The following model, which elaborates on Robertson's ideas on money, growth and cycles will serve the purpose of illustrating the essence of growth in disequilibrium.

The model's assumptions are as follows: (i) all prices are flexible, but some money incomes, including wages, are relatively sticky; (ii) all capital goods are considered as "goods in process", or "unready goods": these goods are defined as circulating capital, and include the wage-goods; (iii) all money takes the form of bank deposits, and all savings are kept in money balances; (iv) all bank assets consist of loans to firms for the financing of working capital; (v) all capital is provided by the banks.

In order to isolate the conditions of steady growth, we start with a stationary economy: since all production is financed by the banks, and since all money takes the form of bank deposits, the value of circulating capital must be equal to the value of the money stock, or, according to Robertson's own equation:

$$\frac{M_t}{P_t} = C_t \qquad (1)$$

The second equation is the famous "Cambridge equation", in which, given the model's assumption, agents' saving behaviour is encapsulated. This equation specifies thereal value of households' real saving as follows:

$$\frac{M_t}{P_t} = kR_t \qquad (2)$$

where k is the fraction of their real incomes which households wish to save and keep in liquid form, and R_t is the community's real income in the period considered. In other words, kR_t is the real value of bank deposits.

From equations (1) and (2) it follows that:

$$k = \frac{C_t}{R_t} \qquad\qquad (3)$$

where $\frac{C_t}{R_t}$ is the (circulating) capital:output ratio. This ratio can be considered as a technical constant, or, as Robertson argued, quasi-constant. Let us define v as being equal to $\frac{C_t}{R_t}$. Thus we can rewrite the above equality as:

$$k = v \qquad\qquad (3')$$

This equation states the equilibrium condition that households save and (given the model's assumptions) keep in liquid assets a fraction k of their real income exactly equal to the fraction v which is used as circulating capital in production, and hence is not available for consumption. It should be stressed that this is a genuine equilibrium condition, not an identity. For k and v are determined by entirely independent forces: k reflects households' choices concerning its saving and hoarding behaviour, while v is a technical constant. Therefore, even in a stationary society, they would be equal by a mere fluke. As Robertson said: "the preservation of even a stationary equilibrium would be something of a miracle" (1954 as reprinted in 1956, p.77).

Let us now elaborate on Robertson's equations to a dynamic economy. In the latter, the real stock of money in any given year is equal to the money stock inherited from the past, plus that deriving from current savings (S_t), which, as already stated, in this model are entirely kept as money assets. Thus we can write:

$$\frac{M_t}{P_t} = \frac{M_{t-1}}{P_{t-1}(1+\pi)} + \frac{S_t}{P_t} \qquad\qquad (4)$$

where $\pi = (P_t - P_{t-1})/P_t$.

Under the hypothesis of a "consumption lag", the saving function can be written as:

$$\frac{S_t}{P_t} = sR_{t-1} \qquad\qquad (5)$$

Substituting (5) and (2) into 4 we obtain:

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$$\frac{M_t}{P_t} = (\frac{k}{1+\pi} + s)R_{t-1} \qquad (6)$$

From equations (6) and (2) we obtain:

$$kR_t = (\frac{k}{1+\pi} + s)R_{t-1} \qquad (7)$$

Let us define g as the rate of growth of real output. Hence $R_t = R_{t-1}(1+g)$. Dynamic equilibrium, in this model, requires price stability, as lack of both inflationary or deflationary pressures is a consequance of the coherence between households' intertemporal choices and firms' investment decisions. We define g* as the rate of growth which ensures $\pi=0$ in equation 7. Hence, for this rate of growth, equation 7 becomes:

$$g^* = \frac{s}{k} \qquad (8)$$

This equation defines the equilibrium rate of growth as equal to the ratio between the propensity to save and the fraction of real incomes which people hold as money balances. Using the equilibrium condition 3' (which states the equality between k and ν in equilibrium) we get:

$$g^* = \frac{s}{\nu} \qquad (9)$$

which is identical to the celebrated "Domar equation" and states that the rate of growth must be equal to the ratio between the prpensity to save and the capital:output ratio[17].
An alternative formulation of this equilibrium condition is

$$k + s = \nu (1+g^*) \qquad (10)$$

This equation shows that dynamic equilibrium is preserved if the stock of capital held by the firms sector (on the right-hand side) grows exactly at the same rate which guarantees the absorption of the fraction of real incomes which is not consumed by the community (on the left-hand side). This way of stating the equilibrium condition, or stready growth condition is interesting in that it enlightens some aspects of the relationship between the economy's real and the monetary sectors, which has been somewhat obscured in some post-Keynesian models.

In spite of the lack of cohordination between households' intertemporal consumption plans and firms' investment decisions, capitalist economies grow. According to the Dynamists' approach, entrepreneurs' investment decisions are motivated by their will to exploit new, profitable outlets opened up by technical progress, population growth, the opening of new markets, and so on. What happens when the amount of savings spontaneously generated by the market is less than the demand, and entrepreneurs themselves are not able or willing to provide the required difference in order to realize their investment projects? The answer lies in the banking sector's willingness to finance firms' investment projects.

Here is where monetary factors come to the forefront in the analysis of growth out of equilibrium.

Suppose we are in a disequilibrium situation of the kind just described, i.e. where $\nu - k \neq 0$, this difference being an "error signal" (as defined by Samuelson in his 1963 reading of Robertson's model). For instance, let us, for simplicity, think of an economy whose population's rate of growth rises from zero to a positive value r. Stimulated by this rise (possibly because they interpret it as a promise of an expanding market) firms decide to employ the new population. In order to do so, given the unchanging saving habits of the old population, they demand loans to the banking sector for the payment of wages to the new population, at the current wage rate, w.

Under these hypotheses, investment (that is, the absorption of the new population into employment) is impossible if banks do not respond elastically to firms' demand. This proposition would not be true, of course, if the saving and hoarding decisions of the old population were to change at the firms' will. If we rule out such an extreme possibility, as well as the equivalent one that the rate of interest acts as a perfect equilibrating factor between saving and investment, then investment projects will be converted into actual investments only if the supply of money balances rises at a rate equal to the population's growth rate. In other words, money has to behave as an endogenous variable.

Assume that this elastic response occurs. Then, if we hypothesize that the new population produces its output with a lag, and if the new population's saving and hoarding habits are the same

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[17] Here I will not discuss the differences between this formulation of the conditions of dynamic equilibrium and

as those of the old population, the demand for capital goods (that is, in this context, the wage goods for the maintainance of new workers) rises at the same rate as the population and the money suppy, that is at a rate r. To see the *disequilibrium* consequences involved in this process, let us go back to our equation (3), which we now rewrite as:

$$k\,P_tR_t = P_tC_t \qquad\qquad (3'')$$

The right-hand side of this equation has now risen by a factor $(1+r)$ due to the rise in population and investment, whereas the left-hand side has not changed. In other words, our "error signal"

$$kP_t - \frac{C_t}{R_t}P_t(1+r)$$

is less than zero. Who is going to provide the required amount of savings? How is equilibrium going to be re-established?

The answer to the first question is that wage-earners, and fixed income receivers in general, experience a disequilibrium situation, since their consumption falls below the planned level, because their real incomes fall. This can be seen on the basis of the following Robertsonian lagged-consumption function:

$$A_{wt} = a_{wt}\frac{W_{t-1}}{P_t^e} \qquad\qquad (11)$$

where A_{wt} is the consumption of wage earners (for brevity I will omit other sticky monetary incomes), a_{wt} is their average propensity to consume, W_{t-1} is the wage bill in the previous period, $a_{wt}\,W_{t-1}$ are their money expenditures in the current period, and P_t^e is the level of prices which they expected to prevail to-day on the basis of their adaptive expectation ($P_t^e = P_{t-1}$).

The essence of this process is a redistribution from fixed incomes to profits, as the latter rise exactly in proportion to the rise in the price level. Thus workers' actual consumption differs from the level they had planned by an amount depending on the level of price inflation.

What is the rate of price inflation? Since circulating capital in this model resolves entirely into "advances to labour", then

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Domar's formulation. For a detailed discussion of this point see Costabile, 1997.

$$C = \frac{W_t}{P_t} L_t$$

where L_t is the number of workers. Since L_t has increased by a factor $(1+r)$, P has to rise at the same rate in order for the equality between the demand and supply of circulating capital to be re-established. This is the essence of growth *out of equilibrium*: the equality between the demand and the *ex-post* supply of circulating capital is the result of the imposition of forced saving on workers and on all fixed income receivers.

The answer to the second question (how is the equilibrium going to be re-established?) is that, if labour productivity is constant, at the end of the production period output will rise at the same rate as population and prices. If no new injection of money takes place, prices will fall back to their original level, and the real wage rate will be restored. The economy will be in equilibrium again, with higher employment. The sacrifices imposed on the public have made capital accumulation possible. In this case, capital accumulation is of the "extensive" variety.

The effects of technical progress are similar to those of a rise in population. Suppose that, with a constant population, capitalists see an opportunity for profits in investments embodying technical progress. In order to produce the new capital goods, they will demand and obtain loans from the banking system. Sincethe new capital goods will produce profits only after a lag, in the interval prices will rise and the real resources to be devoted to the deepening of the accumulation process will be provided through the "sacrifices" imposed on workers and other people receiving fixed incomes (or, as Schumpeter would have argued, also by entrepreneurs excluded from the new credit injection). These cathegories of people provide the real resources for capital accumulation whenever capitalists are not willing to do so out of their own savings.

Eventually, the higher productivity of new capital goods will determine a permanent increase in the level of output. What happens to the price level will depend on monetary policy. If the money supply is kept constant in the face of the increased production, prices will fall. Both Schumpeter and Robertson recognized this "autodeflation" effect of investments financed by a credit expansion. Schumpeter used this effect as an argument to criticize the "Austrian" view that these expansions have to be stopped for their inflationary consequences (Schumpeter, 1989 (1927), p.44)[18]. Robertson applied it to an analysis of the distribution of the fruits of technical progress. Falling prices will allow real wages to rise again, and the fruits of technical progress will be distributed "even-handedly" among the different classes (Samuelson, 1963, p. 532). By contrast, if

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[18] This criticism by Schumpeter anticipated a point later raised by Domar (1947, p.50) in in criticism of "overinvestment theories".

the money supply grows at the same rate as labour productivity, then prices will not fall and capitalists will reap all the benefits of the increased productivity.

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