# Ludwig M. Lachmann Against the Cambridge School. Macroeconomics, Microfoundations, Expectations, Rate of Profit, Equilibrium and Innovations.

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# LUDWIG M. LACHMANN AGAINST THE CAMBRDIGE SCHOOL
## Macroeconomics, Microfoundations, Expectations, Rate of Profit, Equilibrium and Innovations

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## ABSTRACT

While in the early 1930s Keynes and Hayek were the major figures in a heated academic debate about money and capital, in which Keynes also and especially involved the Italian Piero Sraffa, it might seem at first sight that the Austrian economist set aside an organic demolition of the ideas expressed in 1936 by his rival in the *General Theory*. Hayek himself, in the future, would regret not having devoted an organic work to criticising the new Keynesian theories. However, as demonstrated in Sanz Bas (2011), although it is not possible to find a debate such as the one on the *Treatise on Money*, Hayek's subsequent works do include timely and reasoned criticisms as regards the main conclusions of the new Cambridge macroeconomics.

But the 'Austrian knight' of a new Vienna-Cambridge debate, in the subsequent decades, was the German economist Ludwig M. Lachmann (1906-1990), a student of Hayek at LSE during the 1930s and later a professor in Johannesburg and New York. Lachmann was one of the protagonists of the Austrian revival after 1974 and the founding leader of the 'hermeneutic stream', opposed by the Rothbardian stream.

Lachmann, defending Keynes's subjectivism and expectation theory, revived the Vienna-Cambridge controversy, criticising not Keynes but his followers, in particular the 'new' Cambridge School, developed by Joan Robinson and Piero Sraffa. Lachmann's life sight was to build a new economics paradigm, centred on the idea of market process, expectations and kaleidic society (Shackle); in order to do so he developed a deep attack toward the new Cambridge macroeconomics mainstream, arising from World War II ashes during the 1950s and 1960s. His polemic toward the 'modern' macroeconomics can be read in all his books and papers, but it is particularly evident in Lachmann (1973, 1986a).

His preferred targets were Sraffa and Joan Robinson, 'guilty', according to Lachmann, to overcome Keynes's subjectivism and to develop a new Neo-Ricardian approach. The resulting macroeconomics is accused to be excessively formalist, ignoring the microfoundations that are at the very root of human action and choice.

But Lachmann's attack was not only an epistemological one. He intensively tried to demolish all the pillars of the Cambridge macroeconomics: capital as aggregate, long run equilibrium, the absence of innovation and technological change and the conception of rate of profit. His starting point was an economics based on human expectations as the only possible source of human actions. A source, however, never at rest, and continuously influenced by technological change and changing information.

In conclusion, we will see how to extend the traditional Austrian theory of business cycle, taking in account Lachmann's insight about expectations and technological change. We will try to demonstrate that, under such perspective, economic fluctuations are inevitable, even if the boom arises in the way that Austrian terminology labels 'sustainable'. We will define *natural cycle* the cycle characterized by a liquidation crisis after a 'sustainable' boom.

## 1. Introduction

With no doubts, in economics we can think about the 1930s as what Shackle (1967) calls the *years of high theory*[1]. In particular, debates about monetary issues, equilibrium notions

[1] Lachmann (1986a, p. 141) wrote: «When the history of economic thought in the twentieth century comes to be written, there is no doubt that the decade of the 1930s will occupy a very special place in it. The 'Keynesian revolution', the rise of new theories of competition such as those of Chamberlin and Joan Robinson, the

and business cycle perspectives set standard ideas for all the future development on the same topics. It would be wrong to consider Keynes's *General Theory* (1936) as the central moment for such a debate. Rather, the central moment needs to be found at the beginning of the decade, with two central facts happening in England: the publication of Keynes (1930) and the arrival in London of Hayek, called by Lionel Robbins in 1931, with the collection of his lectures on business cycle in Hayek (1931a). For Austrian economics, «however, this was a tragic decade»[2]: because of political reasons, many Austrian economists had to leave the country, so Vienna lost the importance she had at the beginning of the century[3]; England arose as the new centre of the economic debate and, while at the beginning of the decade, Hayek entered LSE in a triumphal way, after the Keynesian revolution his importance was drastically reduced[4].

The 'fight of the century' between Hayek and Keynes began not with their opposite views on economic fluctuations and policy remedies[5], but with the debate on money triggered by Hayek's review of Keynes's *Treatise*[6]. It was the beginning of the London-Cambridge controversy[7], which is not yet ended. As the debate following the 2007 economic crisis demonstrates, followers of the two great economists are still fighting following the footsteps of the masters.

However, the London-Cambridge debate cannot be reduced to the confrontation between Keynes and Hayek. In fact, before the great impact generated by the *General Theory*, the Italian economist Piero Sraffa launched a radical criticism to *Prices and Production*[8]. Sraffa's criticism is important for several reasons and its impact on the Austrian reflection was probably more radical than the debate with Keynes. Hayek not only spent a lot of energies in replying to Sraffa, but in a way he recognized the validity of certain objections[9] and faced them in the revision of *Prices and Production* and in his following works on business cycle[10], which present strong differences with Hayek (1931a).

However, the importance of the Sraffa-Hayek debate goes beyond the debate itself. In fact, it set a different battleground for Austrian economics. Piero Sraffa was not a Keynesian; rather, he was the protagonist, in Cambridge, of a neo-Ricardian revolution[11], which had enormous consequences on the evolution of modern economic thought. In the Thirties, Hayek seemed not aware of the implications of such Ricardian perspective 'hidden' into Sraffa's criticism. Inside the Austrian School it was Ludwig Lachmann who recognized the consequences of the Ricardian turning point[12] and, starting from Hayek's counter-critic, developed a radical opposition toward Sraffian approach. Moreover, Lachmann was able 'to

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beginnings of growth theory in Harrod's work, all belong to this decade. Prominent thinkers of the century, such as Hicks and Shackle, published their first writings during it. The 1930s were indeed 'years of high theory'».

[2] Lachmann (1986a, p. 141).

[3] On the role of Vienna for economics at the beginning of the XX century see McCaffrey (2012, p. 127) and McCaffrey (2013, pp. 27-28).

[4] Lachmann (1986a, p. 141).

[5] See appendix 1.

[6] Hayek (1931b).

[7] Keynes (1931) is the reply to Hayek (1931b) and the counter Hayekian replica is Hayek (1931c, 1932a).

[8] Sraffa (1932a). The rest of the debate has to be found in Hayek (1932b) and Sraffa (1932b).

[9] See Zappia (1999).

[10] In particular the English translation of Hayek (1929), published in 1933; the second edition of Hayek (1931a), published in 1935; Hayek (1933), which we consider the central work for Hayek's business cycle perspective (see Ferlito, 2013, chapter 2, and Ferlito, 2014a); Hayek (1939) and Hayek (1941).

[11] See Roncaglia (1990) and Porta (1990).

[12] See in particular Lachmann (1973, 1976d, 1986a).

save' some Keynesian insights (subjectivism and expectations[13]) to build his Austrian attack to the neo-Ricardian tower.

In section 2 we will briefly summarize the Hayek-Sraffa debate, giving account of how Lachmann judged and further developed such a debate. In section 3 we will analyse the more general Lachmannian critics to the Cambridge school. Section 4 presents a revised version of the Austrian business cycle theory, characterized by the radical Lachmannian perspective on expectations and disequilibrium. A general account about Hayek's position about Keynes's *General Theory* is presented in Appendix 1: in particular, it is shown how Hayek did not renounce to sharply criticize the full-employment prescriptions to cure depressions. Appendix 2 is a more general introduction about Hayek's perspective on government intervention.

## 2. The Hayek-Sraffa debate and Lachmann's clarifications

Ludwig M. Lachmann (1906-1990) was a German economist who studied with Hayek at the London School of Economics during the 1930s[14]. A professor in economics in South Africa, he became, with Israel Kirzner and Murray N. Rothbard, one of the protagonist of the Austrian revival during the period 1974-1976[15]. It is important to remember his strong accent on the importance of expectations and the impossibility for the economic system to reach an equilibrium position, even if equilibrating forces are always at work. He gave birth to the 'radical subjectivist'[16] stream of the Austrian school, characterized by the shift from preferences to expectations and by the introduction of hermeneutics in economics[17]. Even if he found followers such as Don Lavoie[18] and Mario J. Rizzo[19], Lachmann attracted the strong attack from Rothbard[20], which was mitigated by the so called Kirznerian middle ground[21].

Lachmann was probably the economist that attributed the highest significance to Sraffa's review of *Prices and Production*. Lachmann (1986a, p. 143) considered such a review the first step in the edification of the neo-Ricardian revolution, a prelude to Sraffa (1960). And, in fact, it has to be noted that Sraffa (1932a, 1932b) were the only writings for the Italian economist between his famous *The Laws of Returns under Competitive Conditions* (1926) and his introduction to the Ricardo's writings collection published in 1951. As we shall see, Lachmann clearly grasped that the most radical aspects of Sraffa's criticism was its attack to the subjectivist perspective. Under this point, even the opposition between Keynes and Hayek can be seen as less radical. The hidden part of the attack was, thus, the most important one, because it tried to wake up a *value theory* which seemed to be abandoned and that nobody was putting under fire. Keynes, in fact, as a follower of Marshall, remained a subjectivist. Sraffa, instead, while criticising money and capital theory aspects, was attempting to resurrect the labour value theory. But, as Lachmann (1986a, p. 144) pointed out, Sraffa «never informed his readers that the presuppositions of the views he presented to them, since they reflected an analytical creed which had fallen into oblivion sixty year earlier and was

[13] But Lachmann (1943, p. 65) clarified that the big mistake by Keynes was to consider expectations as 'data'. On the general relationship between Keynes and the Austrian, from a Lachmannian perspective, see Lachmann (1983).
[14] For a biographical sketch see Mittermeier (1992) and Moss (2000).
[15] See Blundell (2014) and Vaughn (1994, pp. 92-111).
[16] See Koppl and Mongiovi (1998).
[17] Lachmann (1990).
[18] Lavoie (1990).
[19] O'Driscoll and Rizzo (1985) and Rizzo (1979).
[20] See Rothbard (1989, 1992). For the debate Lachmann-Rothbard on hermeneutics and disequilibrium see also Rizzo (1992), Boettke, Horwitz and Prychitko (1986), Selgin (1988) and Antiseri (2011).
[21] Kirzner (1992, pp. 3-54; 2000, pp. 132-148).

therefore bound to be unfamiliar to them, were, the them at least, 'new'». According to Lachmann (1986a, p. 144), the Italian economist could not reveal his real intentions, because his readers had not followed him: they were too used to the Marshallian perspective. Only at page 50 of the review we can find Sraffa talking about equilibrium and it is easy to understand that he had in mind the 'classical' perspective according to which in the long run price equals cost of production[22]. Such a perspective is radically different with what Hayek had in mind during that years, a neoclassical equilibrium linked with balance between supply and demand[23].

It is time to take a look to the Sraffa-Hayek debate and the note that Lachmann drew on it, focusing on the following points: 1. The role of money, 2. The relation between saving and investment, 3. Malinvestment and forced saving, 4. The distinction between natural and monetary rate of interest, 5. The role of expectations.

### 2.1 The role of money in the economic system

The first argument is related with the role of money in the economic system. According to Sraffa (1932a, pp. 43-44), Hayek failed to identify the differences between a monetary economy and a non-monetary one, in particular attributing to money the simple function of medium of exchange. For Sraffa, such a position was not consistent with the desire to bring out monetary policy prescriptions. And, moreover, such accusation tried to find out a contradiction with Hayek's wish to base his business cycle theory on the effects on real economy generated by monetary expansion[24].

Hayek seemed quite annoyed by this objection and attributes it to a misunderstanding in Sraffa's view[25].

On this point, Lachmann did not extend Hayek's defence and limited himself in arguing that Sraffa failed to recognize the relevance of Austrian capital theory; and this is surprising for a Ricardian[26].

### 2.2 Saving and investment

The second important point analysed by Lachmann (1986a, pp. 147-148) was the relationship between saving and investment.

> We have to remember that we are in 1932, half-way between *Treatise* and *General Theory*, and before the Myrdalian distinction between magnitudes *ex ante* and *ex post* became known outside Sweden. Keynesians, using the terminology of the *Treatise*, spoke of the divergence between savings and investment (meaning *ex ante*) caused by the fact that in our society savers and investment decision-makers are typically different classes of people. Austrians like Mises and Hayek, by contrast, subscribed to the view, which at that time was a tenet of all mainstream economics, and nothing particularly Austrian, that saving determines investment through the interest mechanism[27].

This was a central point, because, as it is well known, an artificially induced disproportion between saving and investment, generating malinvestment and impeding the interest rate mechanism to work, is the cause of economic fluctuations according to the Austrians. As Lachmann (1986a, p. 148) pointed out, it was impossible for Sraffa to catch the

[22] Sraffa (1932a, p. 50): «But if, for any reason, the supply and the demand for a commodity are not in equilibrium (i.e. its market price exceeds of fall short of its cost of production), its spot and forward prices diverge».

[23] On the initial Hayekian perspective on equilibrium see in particular Hayek (1928). On the evolution of the Austrian perspective on equilibrium see Tieben (2012, chapters 9 and 11).

[24] Zappia (1999, p. 4).

[25] Zappia (1999, p. 6).

[26] Lachmann (1986a, pp. 146-147).

[27] Lachmann (1986a, pp. 147-148).

essence of Hayek's position: in fact, in the Ricardo world, people were rigidly divided into social classes and the possibility of saving to affect investment was simply absurd.

But Lachmann's perspective on this point was similarly astonishing. In fact, he moved away from the Austrian perspective according to which savings determine investment, but at the same time he was not embracing Keynesian perspective according to which investment determines savings.

> Today there appears to be fairly wide agreement that, in modern industrial society at least, we had better refrain from saying either that savings determine investment of that investment determines savings. In the first place, there is no such thing as *a* rate of interest, there is a structure of interest rates on a wide variety of financial assets in a complex network of asset markets linked by intermediation. The elements of this structure respond to a large variety of influences prompted in part by divergent expectations about the magnitudes of rates of interest in the future. Put briefly, it is impossible to say that the rate of interest brings savings and investment into equality as such a statement would imply that its function is confined to the market for new capital, while in reality it extends to the markets for all existing assets on each of which the rate of yield has to equate supply and demand. On the other hand, as Hicks showed in *The Crisis in Keynesian Economics* (Hicks 1974:9–30), the Keynesian teaching that investment determines savings via the multiplier process is also untenable, at least without considerable qualification[28].

Such a view about interest rate was quite in conflict with the traditional Austrian perspective. We shall come back on Lachmann's interest rate view later.

### 2.3 Malinvestment

Next point is related with what the Austrian tradition calls malinvestment, investment brought out by entrepreneurs when the intertemporal structure of preferences is not in equilibrium. According to Hayek, «capital resources brought into existence in response to a money rate of interest below the level of the natural rate cannot be maintained once credit inflation has been stopped and monetary equilibrium is restored. Their owners and their creditors suffer capital loss»[29].

Sraffa could not accept such a perspective and again tried to set the analysis on a class conflict basis. He simply affirmed that what happens with malinvestment and forced saving is a robbery operated by one of the classes. What Sraffa seemed not able to understand, as Hayek (1932b, pp. 243-244) stressed, was that, after a period of malinvestment, capital goods can even retain their physical form, but they can still suffer a reduction of value, due to the fact that their utilization was mis-directed[30]. For Sraffa, capital destruction as conceived by Austrian tradition was not admissible.

Lachmann devoted his main book to capital theory[31] so he felt comfortable in attacking Sraffa on this point. The 'original sin' of Neo-Ricardian capital theory was to focus on a vision of capital as something abstract and homogeneous. As developed in Lachmann (1956)[32], capital can be considered only as «concrete and heterogeneous»[33]. Every attempt to consider capital as an aggregate and unlinked with expectations was, for Lachmann, terribly wrong. Also on this point, the German economist was the most radical one among the

[28] Lachmann (1986a, pp. 148-149).
[29] Lachmann (1986a, p. 149).
[30] Lachmann (1986a, p. 150).
[31] Lachmann (1956).
[32] And clearly summarized in Lachmann (1976f).
[33] Lachmann (1986a, p. 150).

Austrians and even highly critical with Böhm-Bawerk[34], the founder of the so called Austrian capital theory[35].

According to Lachmann (1986a, p. 150), in a certain moment, only certain forms of capital combinations can produce productive results. Therefore, it can be deduced that capital is not the element originating the production process, in the way that work and natural resources may be[36]. This denotes an entirely human characteristic – the value that man adds to what already exists. Only mankind is able to imagine and consequently create something completely new starting from existing but independent elements. Only man can imagine turning a stick and a stone into a spear. This creative nature embodies the entrepreneurial essence of human action. The creation of capital goods therefore is a specific feature of human creativity. It is what, in economic terms, is usually called *investment*: the use of certain *inputs*, or resources, within a production process in order to generate *output*[37].

The revolutionary element introduced by Lachmann in Austrian theory of capital lies in not referring to it as a macro-economic aggregate. Austrians, rather, in resuming the Mengerian tradition, prefer a reference to various capital goods by acknowledging the heterogeneous nature[38] of a magnitude that cannot be constituted as an aggregate and in which the time factor, in a real sense, plays a key role.

These are elements that Sraffanian perspective, being Neo-Ricardian, could not accept. And at the same time, according to Lachmann, Sraffa was not able to understand the importance of expectations for a new capital theory. In fact, as explained in Lachmann (1947, p. 204), the form that the structure of capital takes is defined by none other than production plans (determined by expectations), which use different combinations of production factors. The relative extents to which these factors become part of the combinations (production coefficients) identify the extent to which these factors are complementary to each other.

It might be said that the Lachmann, given the non-homogeneity of capital as an essential fact of economic reality, developed a *structural* conception of capital, in contrast to the aggregating vision of Neo-Ricardians, neo-classics and Keynesians. According to the German economist, Sraffa missed a great occasion linking himself to the Ricardian vision on capital.

### 2.4 Natural rate of interest

The point regarding the natural rate is probably the most important one. Austrian position, influenced by Wicksell, is very peculiar on this point and it is important to clarify it before going ahead with the Sraffa-Lachmann debate. Austrian economics uses the distinction, introduced by Wicksell, between two rates, one natural (*equilibrium*[39]) and one *monetary*. The equivalence between natural rate and monetary rate is one of the three conditions set by Wicksell for the existence of a situation of monetary equilibrium. The second is the existence of equilibrium on the capital market (savings are equal to investments). The third is the presence of equilibrium on the consumer goods market, i.e. stability in price levels[40].

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[34] Menger considered Böhm-Bawerk's theory of capital as one of the biggest mistakes ever made (Lachmann, 1976a, p. 27), while Lachmann (1976f, p. 145) judged it inadequate for inclusion in the Austrian paradigm.

[35] Ferlito (2013, pp. 31-32). According to Lachmann (1976a, p. 27), «Böhm-Bawerk was, at least in his theory of capital and interest, a Ricardian».

[36] Böhm-Bawerk (1910, p. 99).

[37] Hayek (1941, p. 66).

[38] Lachmann (1956, p. 2): «*capital resources are heterogeneous*». See also Horwitz (2000, p. 47).

[39] Hayek (1929, p. 139n) wrote: «The term 'equilibrium rate of interest' which, I believe, was introduced into Germany in this connection, by K. Schlesinger in his *Theorie der Geld-und Kreditwirtschaft* (München and Leipzig, 1914, p. 128) seems to me preferable in this case to the usual expression of 'natural rate' or 'real rate.' Alfred Marshall used the term 'equilibrium level' as early as 1887 (cf. Official Papers of Alfred Marshall, p. 130)».

[40] See Zähringer (2012, pp. 305-306).

In order to set the notion of natural interest rate, it is important to point out the law of time preference, according to which «other things being equal, humans always place present goods higher than future goods on their scales of value»[41]; on this assumption, we can define «the interest rate [as] the market price of present goods in terms of future goods»[42]. It is therefore limiting and profoundly wrong to define the interest rate as *the cost of money*. The capital market is only a particular market for goods, where the action of the interest rate is the most evident but not the only one. In this particular market, the offer – sellers – is represented by consumers, those who have present goods and are willing to forego them to some extent, defined precisely by the interest rate[43]. One of the forms in which such foregoing takes place is savings; consumers forego present money as a function of future money; they therefore offer money to the market. Who represents demand? Entrepreneurs – who need money today in order to implement their industrial projects. Therefore, for the capital market, the natural interest rate is that particular rate which allows the offer (consumer savings) to meet demand (entrepreneur investments).

Yet the law of time preference does not apply only to the capital market. It should be extended to the entire economic system, where the natural rate is consequently that rate *of equilibrium* which reflects the *temporal preferences* of economic agents. Obviously, this is a theoretical level but one to strive for. The monetary rate, on the other hand, in contemporary economic systems is set imperiously by monetary authorities.

Hayek (1933, p. 145) said that «an equilibrium rate of interest would then be one which assured correspondence between the intentions of the consumers and the intentions of the entrepreneurs. And with a constant rate of saving this would be the rate of interest arrived at on a market where the supply of money, capital was of exactly the same amount as current savings».

The capital market, so highly emphasised by the dominant theory when discussing interest rates, is therefore only one among many markets. On the other hand, according to Austrian economists, it is possible to define an interest rate for the economic system, which measures the more general structure of time preferences. As regards consumers, it defines the relationship between consumption and saving. In the case of entrepreneurs linked to investments, it measures the propensity towards the future, that desire to undertake long-term projects in the investment goods sector that makes the production structure more circular and the production period longer, compared to investments in consumer goods and investments having a faster realisation cycle.

In this scenario, the natural rate measures the equilibrium between general time preferences; in a *future-oriented* system, consumers are more savings-oriented, thereby encouraging the accumulation of loanable funds that can be used by entrepreneurs in long-term projects. A *present-oriented* society, in contrast, has a greater propensity towards consumption on the consumer side, while investors do not lengthen the production process.

The level of equilibrium for a combination of time preferences is measured by the natural interest rate, which in turn corresponds to a well-defined structure of the production process. The key element that, by fuelling a modification of the intertemporal structure of production, generates a cycle of expansion and crisis is given by a change in level of the natural rate.

When publishing *Prices and Production*, Hayek was at the beginning of the analysis of the possibility of the difference between natural and monetary rate, induced by banks action and bringing out economic crisis. Sraffa's criticism on this point was very crucial, denying the existence of such a natural rate of interest.

[41] Huerta de Soto (2000, p. 50).
[42] Huerta de Soto (2000, p. 51).
[43] Huerta de Soto (2000, pp. 51-52).

If money did not exist, and loans were made in terms of all sorts of commodities, there would be a single rate which satisfies the conditions of equilibrium, but there might be at any one moment as many natural rates of interest as there are commodities, though they would not be equilibrium rates. The arbitrary action of the banks is by no means a necessary condition for the divergence; if loans were made in wheat and farmers (or for that matter the weather) 'arbitrarily changes' the quantity of wheat produced, the actual rate of interest on loans in terms of wheat would diverge from the rate on other commodities and there would be no single equilibrium rate[44].

And later on Sraffa argued that on any forward market the ratio between forward and spot price implies a rate of interest. Here we have the passage in which Sraffa clearly stated what he meant by equilibrium: «It will be noticed that, under free competition, this divergence of rates is as essential to the effecting of the transition as is the divergence of prices from the costs of production; it is, in fact, another aspect of the same thing»[45].

Thus, while, following Mises, Hayek argued that an unsustainable boom is caused when the banks charge a monetary rate of interest lower than the natural one, Sraffa denied the existence of such a thing like a natural rate of interest outside of the steady-state equilibrium[46].

Lachmann raised four objections on this topic. First of hall, Lachmann (1986a, p. 152) stressed again that Sraffa had in mind a classical view on equilibrium, centred on the long-run relationship between price and cost of production.

Secondly,

this complex of relationships is given expression in a context of spot and forward markets. Forward prices, while evidently determined by expectations, are always nearer to equilibrium prices than are spot prices, though it is not suggested that they ever coincide. As forward markets without expectations are hardly conceivable, expectations are introduced, albeit in somewhat attenuated form: they are always orientated to equilibrium price[47].

Thirdly, Lachmann (1986a, p. 153) clarified that in the classical view changes in demand acts immediately on market prices, but in the long run their effect is visible on quantities and not on equilibrium prices. Fourthly, in Sraffa's critics there was no room for discussion of the relationships between markets for different commodities, while attention was paid only on the relations between market and equilibrium prices.

However, the main critics that Sraffa launched against Hayek was that the discrepancy between monetary and natural rate is characteristics of a money economy. And that, if transactions would be done in commodities, we should have more than one natural interest rate.

An essential confusion […] is the belief that the divergence of rates is a characteristic of a money economy: and the confusion is implied in the very terminology adopted, which identifies the "actual" with the "money" rate, and the "equilibrium" with the "natural rate". If money did not exist, and loans were made in terms of all sorts of commodities, there would be a single rate which satisfies the conditions of equilibrium, but there might be at any one moment as many "natural" rates as there are commodities, though they would not be "equilibrium" rates[48].

Sraffa (1932a, p. 51), analysing Hayek's policy implications, added:

[44] Sraffa (1932a, p. 49).
[45] Sraffa (1932a, p. 50).
[46] Murphy (n.d., p. 3).
[47] Lachmann (1986a, pp. 152-153).
[48] Sraffa (1932a, p. 49).

[I]n times of expansion of production, due to additions to savings, there is no such thing as an equilibrium (or unique natural) rate of interest, so that the money rate can neither be equal to, nor lower than it […]. [T]here is a "natural" rate of interest which, if adopted as bank-rate, will stabilise a price-level (i.e. the price of a composite commodity): it is an average of the "natural" rates of the commodities entering into the price-level, weighted in the same way as they are in the price-level itself. What can be objected to is that such a price-level is not unique, and for any composite commodity arbitrarily selected there is a corresponding rate that will equalise the purchasing power, in terms of that composite commodity, of the money saved and of the additional money borrowed for investment.

In his reply, Hayek admitted the possibility that there is not a single equilibrium rate, creating a certain confusion on the matter. But, instead, Hayek clarification helped in moving the debate forward.

Mr. Sraffa denies that the possibility of a divergence between the equilibrium rate of interest and the actual rate of interest is a peculiar characteristic of a money economy. And he thinks that "if money did not exist, and loans were made in terms of all sorts of commodities, there would be a single rate which satisfies the conditions of equilibrium, but there might, at any moment, be as many 'natural' rates of interest as there are commodities, though they would not be 'equilibrium' rates" (p. 49). I think it would be truer to say that, in this situation, there would be no single rate which, applied to all commodities, would satisfy the conditions of equilibrium rates, but there might, at any moment, be as many "natural" rates of interest as there are commodities, all of which would be equilibrium rates […]. There can, for example, be very little doubt that the "natural" rate of interest on a loan of strawberries from July to January will even be negative, while for loans of most other commodities over the same period it will be positive[49].

On this point, differences between Hayek and Sraffa emerged mainly because of the different vision about equilibrium. Hayek had in mind an intertemporal situation of equilibrium prices in which actors have no incentive in changing their behaviour. Instead, Sraffa was concerned with the classical long run equilibrium[50]. Thus, as clarified by Murphy (n.d., p. 8), a steady state economy, in which relative prices remains stable in each period, was considered both by Sraffa and Hayek as an equilibrium situation. Instead, according to Sraffa, there was no possibility of such an equilibrium in a dynamic economy; in Hayek's veiw, on the contrary, dynamic equilibrium was conceivable when economic actors are able to anticipate relevant changes.

However, for Lachmann (1986a, p. 54) Hayek's admission about the existence of multiple natural interest rates was a fatal concession to Sraffa. And on this point Lachmann wished to clarify.

It is not difficult, however, to close this particular breach in the Austrian rampart. In a barter economy with free competition commodity arbitrage would tend to establish an overall equilibrium rate of interest. Otherwise, if the wheat rate were the highest and the barley rate the lowest of interest rates, it would become profitable to borrow in barley and lend in wheat. Inter-market arbitrage will tend to establish an overall equilibrium in the loan market such that, in terms of a third commodity serving as *numéraire*, say steel, it is no more profitable to lend in wheat than in barley. This does not mean that actual own-rates must all be equal, but that their disparities are exactly offset by disparities between forward prices. The case is exactly parallel to the way in which international arbitrage produces equilibrium in the international money market, where differences in local interest rates are offset by disparities in forward rates. In overall equilibrium it must be as impossible to make gains by 'switching' commodities as currencies[51].

This overall equilibrium rate of interest, Lachmann (1986a, p. 154) added, should be different with Sraffa's classical long run equilibrium but also with Hayek's view.

[49] Hayek (1932b, p. 245).
[50] Murphy (n.d., p. 7).
[51] Lachmann (1986a, p. 154).

It requires a vigilant and efficient arbitrage acting between markets, a special type of entrepreneurial action and institutions appropriate to it. What Hayek should have said is not that there might be as many rates of interest as there are commodities all of which would be equilibrium rates, but that only some of them would be. While overall equilibrium requires equality of demand and supply in each single market, the latter is not a sufficient condition of the former[52].

According to Lachmann, therefore, the weakness of a «natural-rate concept is not that it pertains to a barter, rather than a monetary, economy, but that it can be defined uniquely only in the context of full intertemporal equilibrium, which, in Lachmann's view, made it useless as a policy instrument»[53].

It seems that Hayek partially moved toward Sraffa's position in recognizing that the discrepancy between natural and monetary rate had not to be confined to the money economy[54].

Traditionally, disproportion between the natural rate and the monetary rate can be generated when the monetary rate is driven by someone below the natural rate. This is the situation that Hayek had in mind with *Prices and Production*. Therefore, it seems that without banks action such disproportion cannot arise. However, it was Hayek who introduced a second possibility with the revisions of his works: the natural rate rises above the monetary rate. How can this occur? Through positive profit expectations. If entrepreneurs, whose psychological dynamics are fundamental in any economic process, are pervaded by a positive sentiment, i.e. if they are convinced that they can start profitable industrial projects and have excellent profit expectations, they will be encouraged to request more credit in order to begin longer production processes. This means they have changed their time preferences in becoming more future-oriented.

It is an apparently unimportant difference in exposition which leads one to this view that the Monetary Theory can lay claim to an endogenous position. The situation in which the money rate of interest is below the natural rate need not, by any means, originate in a deliberate lowering of the rate of interest by the banks. The same effect can be obviously produced by an improvement in the expectations of profit or by a diminution in the rate of saving, which may drive the 'natural rate' (at which the demand for and the supply of savings are equal) above its previous level; while the banks refrain from raising their rate of interest to a proportionate extent, but continue to lend at the previous rate, and thus enable a greater demand for loans to be satisfied than would be possible by the exclusive use of the available supply of savings[55].

In seeking the reasons for the second case introduced by Hayek, we can even find a link with Schumpeter.

The reasons for this can be of very different kinds. New inventions or discoveries, the opening up of new markets, or even bad harvests, the appearance of entrepreneurs of genius who originate 'new combinations' (Schumpeter), a fall in wage rates due to heavy immigration; and the destruction of great blocks of capital by a natural catastrophe or many others. We have already seen that none of these reasons is in itself sufficient to account for an excessive increase of investing activity, which necessarily engenders a subsequent crisis; but that they can lead to this result only through the increase in the means of credit which they inaugurate[56].

With the evolution of Hayek business cycle theory, in particular with Hayek (1933), the Hayekian focus switched from the role of monetary manipulation to the role of expectations[57]. The Austrian economist moved toward a concept of equilibrium as

[52] Lachamnn (1986a, p. 155).
[53] Glasner and Zimmerman (2012, p. 15).
[54] Zappia (1999, pp. 19-24).
[55] Hayek (1929, p. 147).
[56] Hayek (1929, p. 148).
[57] On this see in particular Ferlito (2013, paragraph 2.8) and Ferlito (2014a).

intertemporal plans coordination, which is different with what he had in mind with the first edition of *Prices and Production*. It may be argued, thus, that some of the Sraffa's criticisms were considered by Hayek in his revision[58]. But, it seems, instead, that Lachmann was not able to catch the peculiarities of such Hayek's works.

### 2.5 Expectations

The final part of Lachmann's criticism toward Sraffa was devoted to the issue of the expectations, the most beloved topic for the German economist[59]. In fact, Lachmann is the economist who most deeply analysed the concept of expectations, re-interpreting them dynamically and inserting them in the Austrian theoretical paradigm.

Acknowledging Keynes's important function in having introduced the concept of expectations in an organic way with *A Treatise on Money* (1930)[60], and referring Shackle's contribution[61], an Austrian turned partially Keynesian[62], Lachmann sought to engage his own contribution completely within the Austrian tradition, albeit with the necessary distinctions. In particular, he felt that the Austrians missed the opportunity to insert expectations within their own thinking in an organic way.

> It is a curious fact that, when around 1930 (in Keynes's *Treatise on Money*) expectations made their appearance in the economic thought of the Anglo-Saxon world, the Austrians failed to grasp with both hands this golden opportunity to enlarge the basis of their approach and, by and large, treated the subject rather gingerly[63].

In truth, Lachmann's criticism may even seem to be too severe[64]. Hayek (1929, p. 147) had already recognised the central role of expectations, when he claimed that positive expectations of profit can guide entrepreneurs to change their preferences, becoming more future-oriented, thereby leading to a rise in the equilibrium interest rate. This step is also central to Hayek's fundamental work (1933).

However, Lachmann sought to be more radical: he acknowledged that Hayek discussed the issue of expectations; yet, he 'accused' him of not having worked enough on the causes and consequences that a divergence in expectations coul generate[65]. The German economist therefore embraced Shackle's concept of the *kaleidic society*[66], «a society in which sooner or later unexpected change is bound to upset existing patterns, a society "interspersing its moments or intervals of order, assurance and beauty with sudden disintegration and a cascade

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[58] For a full account on this, see Zappia (1999).

[59] Lachmann (1976a, p. 28): «Austrian economics reflects a "subjectivist" view of the world. The subjective nature of human preferences is at its root. But in a world of change the subjectivism of expectations is perhaps even more important than the subjectivism of preferences».

[60] Garrison (1986) labeled Lachmann Austro-Keynesian. As noticed in Boettke and Sullivan (1998), Lachmann was not able to bring his radical subjectivism to its extreme consequences. In fact, while denying the possibility for equilibrating forces to prevail, because of the kaleidic society, at the same time he advocated government intervention in case of crisis, in particular in Lachmann (1935; 1956). His interventionism is at odd with his radical perspective on subjectivism. However, we have reason to believe that such policy activism, expressed mainly in his M.Sc. dissertation and his first book, was abandoned later on, as it was never mentioned again.

[61] George Lennox Sharman Shackle (1903-1992) was born in Cambridge and was therefore British. Our definition of him as 'Austrian' refers to his scientific approach. He earned his Ph.D. at the London School of Economics in the 1930s under the guidance of Hayek.

[62] As told by Rothbard, Lachmann was fond of saying: «When I arrived in London in the early 1930s, it was safe to say that everyone at the London School of Economics was an Austrian. After the war, however, Hayek and I were the only Austrians left».

[63] Lachmann (1976e, p. 58).

[64] See Selgin (1988, p. 75).

[65] Lachmann (1976e, p. 58).

[66] See Shackle (1972, pp. 76-79).

into a new pattern"»[67]. In contrast, for Hayek, the definition of a dynamic balance, based on the coordination of plans, in any case requires a certain closeness to a situation of general economic equilibrium[68].

Expectations are consequently the hallmark of a society made of real players which, starting precisely from them, form their own plans for the future, meeting and modifying knowledge and the plans themselves. This generates the *kaleidoscopic world*, a world where change is constant. And this, according to Lachmann (1976e), can be the basis for developing common ground starting from the similar observations and conclusions reached by Shackle and Mises; precisely because of these observations concerning uncertainty, the inadequacy of mathematical time and probabilistic calculation applied to economic theory, the two authors developed a similar methodology.

In a kaleidoscopic society, moreover,

> the equilibrating forces, operating slowly, especially where much of the capital equipment is durable and specific, are always overtaken by unexpected change before they have done their work, and the results of their operation disrupted before they can bear fruit. […] Equilibrium of the economic system as a whole will thus never be reached[69].

According to Lachmann, expectations are not something 'up in the clouds'; without them, there is no economic activity as such; it is starting from expectations that every decision is taken with the intention of making a profit or achieving personal satisfaction. However, these attempts emerge in a context of imperfect knowledge and an unexpected and unpredictable future[70]. And, again, dynamic equilibrium does not lie in the coherence of expectations but rather in the individual process which each agent enacts in the attempt to achieve them.

However, expectations, although they are a fundamental element in Lachmann's analysis, cannot be analysed as if they were aspects of a problem, as Schumpeter also acknowledged[71]. Rather than being explanatory variables, they should perhaps be seen as economically indeterminate elements[72]. However, Lachmann himself, faced by the accusation that in his vision the indeterminacy of expectations may lead to theoretical nihilism, clearly responded that human action «is not determinate, but neither is it arbitrary», and «human action is free within an area bounded by constraints»[73].

It was important to define the role of expectations in Lachmann's view in order to understand the last point of his criticism toward Sraffa[74]. Lachmann (1986a, p. 155) stressed how the main difference between Hayek and the Italian economist had to be sought in their different approaches toward equilibrium.

> For Hayek equilibrium is an ever-present force. Equilibrium prices are primarily governed by demand. The proportions of capital and consumer goods in the gross national product are determined by the relative preferences of saver-consumers. It takes the arbitrary action of the banks to tamper with an otherwise firmly entrenched equilibrium.
>
> For Sraffa real-world market prices are determined by supply and demand. But behind them, as a centre of gravity, there lies the equilibrium position. Equilibrium prices are determined by the objective, partly technical, conditions of production and distribution while demand determines equilibrium quantities of goods produced[75].

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[67] Lachmann (1976e, p. 54).
[68] Rizzo (1992, p. 184).
[69] Lachmann (1976e, pp. 60-61).
[70] See Lachmann (1982).
[71] Lachmann (1943, p. 66).
[72] Lachmann (1943, p. 67).
[73] Lachmann (1971, p. 37).
[74] Lachmann (1986a, pp. 155-157).
[75] Lachmann (1986a, p. 155).

However, Lachmann (1986a, p. 156) recognized to Sraffa the attempt to take in account the great legacy of the subjective revolution. In fact, Neo-Ricardian revolution seemed to neutralize the role of demand, not asking what lies behind it, the motivations of human behaviours (expectations and following plans). Sraffa introduced something that can be called 'market expectations'. Sraffa (1932a, p. 50) explained that if there is a shift of demand among commodities, there will be a change in the relative prices: some of them rise, others fall. Supply will also change bringing out a change in the long run equilibrium price. Thus, expectations that are introduced regard only the date on which equilibrium is expected to be restored. What Lachmann (1986a, p. 156) stressed is that in a world of uncertainty, no equilibrium position can be actually known.

Therefore, Lachmann pointed out that Sraffa failed to take chance to build his insights inside a subjectivist paradigm.

## 3. Ludwig Lachmann against the Cambridge School

What we have seen so far is, actually, only part of the general criticism that Lachmann brought out against the Cambridge School and the mainstream economics, including the neoclassical paradigm[76]. Such criticism is developed in particular in Lachmann (1973) but traces of it can be found in many of the German economist's works.

Lachmann was mainly interested in showing how both the Cambridge school and the neoclassical school, even if fighting each other, were not really able to develop economic theories useful for understanding economic processes, in particular economic growth and capital theory in a free market context. The main reason is that both schools, working with macro-variables, ignore the microfoundations behind them, human actions driven by expectations[77]. Instead, the «significance of the Austrian school in the history of ideas perhaps finds its most pregnant expression in the statement that here man *as an actor* stands at the center of economic events».[78]

### 3.1 Macro-economic formalism

The first great problem with the two schools is that they both «conduct their argument within the context of *macro*-economic equilibrium»[79]. They are interested in economy as a whole; thus the origins of the motion of the forces of the economic system are systematically ignored. But, according to Lachmann (1973, p. 15), the real world is a world of disequilibrium, in which equilibrating forces operate but the equilibrating process is never at rest. While it is possible to study equilibrium at micro-level[80], it becomes hard to analyse equilibrium in the context of the whole economic system, in which the mutual consistency of plans becomes a *conditio sine qua non*[81]. Lachmann (1973, p. 16) called *macro-economic formalism* such attitude to work exclusively with macro aggregates[82], ignoring the microfoundations[83].

[76] Too often the Austrian school is still included into the neo-classical mainstream. For a deep clarification about the big differences between Austrian school and neo-classical paradigm see Huerta de Soto (1998).
[77] Lachmann (1973, p. 11).
[78] Lachmann (1966, p. 51).
[79] Lachmann (1973, p. 14).
[80] See in particular Hülsmann (2000).
[81] Lachmann (1973, p. 15).
[82] Lachmann (1976c, p. 152).
[83] Lachmann (1976d, p. 217).

Lachmann (1973, pp. 16-17) stated that the Cambridge school was the more at ease with the macro-economic formalism. In fact, they totally repudiated the subjectivist revolution of the 1870s, originating what Lachmann (1973, pp. 17-18) called the 'neo-Ricardian' revolution[84]. The essence of such a revolution needs to be found in the following lines from Robinson (1956) quoted by Lachmann: «Economic Analysis, serving for two centuries to win an understanding of the Nature and Causes of the Wealth of Nations, has been fobbed off with another bride – a Theory of Value»[85]. For this reason, Lachmann refused to label the Cambridge school as neo-Keynesian.

> Keynes, for all his interest in macro-economics, owed little to Ricardo and all his life remained a subjectivist, who refused to cast the inducement to invest in the mould of a macro-variable such as the acceleration principle[86].

On the contrary, for the neo-Ricardians there is no room for subjectivist analysis. They focused not on the analysis of human action, but human re-action. Dividing individuals in social classes, the Cambridge school was forced to confine real human beings into stereotyped behaviour, so that imaginary «beings take the place of real people»[87]. On the other side, the neoclassical school was also unable to rediscover its subjectivist origin, trapped by its obsession with statistical verification. In fact, if any macro-economic argument would be linked with micro-economic foundation, it would become too difficult to trust statistical verification: while statistical data are collected in a disequilibrium world, macroeconomic theory aims to describe general equilibrium situations[88].

### 3.2 Rate of profit

However, Lachmannian critics was not only a methodological one. He touched several points that he considered not adequate in the Cambridge economics. The first consideration regarded the rate of profit[89]. Ricardo, Marx, neo-Ricardians, Keynes and even Böhm-Bawerk assumed capital to be homogeneous; this allowed them to define univocally a uniform rate of profit, linked with the return on capital[90]. But, Lachmann (1973, p. 26) argued, such assumptions and conclusions cannot be considered valid in a free market economy. First of all, profit needs to be considered simply as the difference between the price at which a commodity is sold and its cost to the seller. With such a definition, profit can have also a negative magnitude. Moreover, profits have to be linked with entrepreneurial action in the market economy. Each company or entrepreneur acts in order to maximize profit; however, *motivation* toward a positive profit and *success* in achieving the target are different things. The very nature of market economy renders the success of all plans impossible[91]. Equilibrium, as pointed out in Hülsmann (2000), exists only *ex ante*: plans are consistent with expectations and the limited available content of information. But, *ex post*, it is possible to discover that the plan was inadequate to reach the target. Malinvestment can actually happen. Therefore, there is «no such thing […] as *a rate* of profit, there are only *rates* of profit which

[84] Lachmann (1973, pp. 23-25) mentioned Joan Robinson, Piero Sraffa and Luigi Pasinetti as the main protagonists of such a revolution. We need to add, following Roncaglia (1990), Garegnani and Paolo Sylos Labini. The latter, in particular, developed a neo-Ricardian approach mixing his passions for Smith, Schumpeter and Keynes. See, in particular, Sylos Labini (1956, 1984, 1993). See also Ferlito (2011).
[85] The same criticism against the focus of economic analysis and the need for a return to the classical economics is present in Sylos Labini (2004).
[86] Lachmann (1973, p. 18).
[87] Lachmann (1973, p. 19).
[88] Lachmann (1973, pp. 21-22).
[89] Lachmann (1973, pp. 25-27).
[90] See also Lachmann (1958; 1986b, chapter 4).
[91] Lachmann (1973, p. 26).

may differ widely»[92]. Such conclusion is drawn from the micro-nature of entrepreneurial action, but also from the heterogeneity of capital, which the Cambridge school, as neo-Ricardian school, could not accept. And Lachmann had not in mind simply physical heterogeneity; even two identical machines can bring out different results if used in different ways or in different conditions of time and space. Profit is not simply related with the physical features of capital, but above all with capital *combinations*: capital can produce a profit if used in *a certain* way[93]. This makes impossible to talk about a uniform rate of profit[94].

Lachmann (1973, p. 27) admitted that the idea of a uniform rate of profit was consistent with the situation that Ricardo had in mind, the free access to all markets.

> If rates were different all capital would flow out of the least profitable branches of industry and accumulate in those most profitable, thus bringing about a uniform level of profitability. This is a property of lung-run equilibrium[95].

But the present world presents different conditions: capital is mostly durable and specific, so that equilibrating forces could operate only slowly. Such a slow operation of the equilibrating forces will make them to be overtaken by the «disequilibrating forces of unexpected change»[96]. Durability and specificity of capital, as its composition in terms of combination, cannot be ignored. Even what Keynes called 'own rate of interest' cannot be assimilated to the Ricardian rate of return. In fact, Keynes's intuition was more related with the Austrian idea of a natural interest rate reflecting the intertemporal structure of preferences; this is a purely subjective concept, which cannot be considered in the objectivist approach of the Cambridge school[97].

Moreover, another difference mark between Lachmann and the Cambridge school was that for the German economist profit is *essentially* a disequilibrium phenomenon[98]. Being generated by the difference between selling prices and purchasing costs, profits cannot arise in an equilibrium context. In the struggle for profit, entrepreneurial function will wake up equilibrating forces, but profit will be present as far as such equilibrium does not prevail. As explained by Kirzner (1973, p. 48):

> The pure entrepreneur […] proceeds by his alertness to discover and exploit situation in which he is able to sell for high prices that which he can buy for low prices. Pure entrepreneurial profit is the difference between the two set of prices. It is not yielded by exchanging something the entrepreneur values less for something he values more highly. It comes from discovering sellers and buyers of something for which the latter will pay more than the former demand.

Entrepreneurial function, seeking for profits, moves the market from a disequilibrium status toward equilibrium[99]. The starting point of human action, in fact, is always a state of disequilibrium, characterized by market ignorance. It is through interaction in the market that knowledge can be transmitted and acquired, bringing out plans revisions. Entrepreneurial alertness allows such changes to happen and, therefore, reducing market-ignorance and

[92] Lachmann (1973, p. 26).
[93] Lachmann (1956, pp. 3-12).
[94] Lachamann (1973, p. 27).
[95] Lachmann (1973, p. 27).
[96] Lachmann (1973, p. 27). Lachmann may have in mind Schumpeterian innovation processes.
[97] Lachmann (1973, pp. 28-29).
[98] Lachmann (1973, p. 31).
[99] Kirzner (1973, pp. 69-75). See Ferlito (2014b).

driving plans toward mutual compatibility, it is an *equilibrating* force[100]. The market approach, in fact, focuses

> on the role of knowledge and discovery in the process of market equilibration. In particular this approach (a) sees equilibration as a systematic process in which market participants acquire more and more accurate and complete *mutual knowledge* of potential demand and supply attitudes, and (b) sees the driving force behind this systematic process in what will be described below as *entrepreneurial discovery*[101].

The equilibrating process consists exactly in the acquisition of better mutual information concerning the plans made by the different market actors[102]. It is only in disequilibrium that profit opportunities actually exist and can be discovered by entrepreneurial alertness[103]. In this sense, alertness allows discovery and discovery plays an equilibrating role, reducing market-ignorance[104]. However, in opposition to Kirzner, Lachmann stated that such equilibrating forces, in the market economy, cannot prevail and this fact gives meaning to the competition process: profit persists in the market because disequilibrium is always present in some sector of economic system[105].

Lachmann (1973, p. 32) drew two conclusions from his analysis on the nature of profit.

> First, the ever-elusive and fugitive price-cost differences which are the source of all profits can have no place in the long-term equilibrium world to which the two rival schools [Cambridge and neo-classical schools] are both committed. *An equilibrium rate of profit is thus a contradiction in terms*.
>
> Secondly, profits are pre-eminently a micro-economic phenomenon. Their basis is to be found primarily in the ever-changing pattern of price-cost differences in a thousand different markets. Without understanding this micro-foundation of the phenomenon we cannot understand its essence. We certainly should not be able to formulate a general theory of profits without it. A macro-economic theory of profit can therefore make little sense.

According to Lachmann (1973, pp. 33-35), even if neo-classics and neo-Ricardians (Cambridge) present differences in their analysis of the profit rate[106], both schools miss the opportunity to understand the true nature of profit, lying in the micro forces of market competition process.

### 3.3 Economic growth

Discussions on matters of economic growth have become a favourite pastime of our age. Among newspaper readers and television viewers all over the world, even among some economists, the notion that in this great age of ours it has become possible to sum up in one single figure the result of the economic activity of groups of individuals in countries, regions, or industries, appears to be accepted as a self-evident truth. Such figures are

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[100] «For Hayek the equilibrating process is thus one during which market participants acquire better mutual information concerning the plans being made by fellow market participants. For Mises this process is driven by the daring, imaginative, speculative actions of entrepreneurs who see opportunities for pure profit in the conditions of disequilibrium». (Kirzner, 2000, p. 13).

[101] Kirzner (1997, p. 62).

[102] In the market economy the problem of coordination finds solution in the market process and the key role is played by prices. (Kirzner, 1963, p. 38).

[103] «For Austrians […] mutual knowledge is indeed full of gaps at any given time, yet the market process is understood to provide a systemic set of forces, set in motion by entrepreneurial alertness, which tent do reduce the extent of mutual ignorance. Knowledge is not perfect; but neither is ignorance necessarily invincible. Equilibrium is indeed never attained, yet the market does exhibit powerful tendencies toward it». (Kirzner, 1992, p. 5).

[104] Kirzner (1997, p. 68).

[105] Lachmann (1973, p. 32).

[106] For neo-classics profit rate and interest rate coincides, while for the Cambridge school they have to be kept sharply distinct.

then used as a measure for comparisons over time and, with gusto, between countries. In many circles a low rate of growth of the gross national product has come to be regarded as a symptom of a social *malaise*[107].

In the above passage, Lachmann anticipated the present day critics toward GDP as a reliable instrument for measuring economic performances in a country and among countries. But the German economist's aim was not only to criticize the GDP growth as a policy target. His attack was mainly devoted toward the concept of steady-state growth and the way in which neo-classical school and Cambridge school faced the growth problem[108]. In fact, according to Lachmann, again, they were facing a dynamic problem with static instruments. Steady-state growth, the concept with which both school were concerned, is an equilibrium concept[109].

The equilibrating forces under discussion are macro-economic forces. Some of them we must now regard as suspect: the capital-output ratio, for example, since heterogeneous capital cannot be measured in disequilibrium, or the rate of profit we discussed at length. Again we find that the micro-economic foundations from which these macro-economic forces must be supposed to spring are largely ignored. The possibility of such an equilibrium is discussed at length. The question of how it would have to be reached, of the pattern of action required for the 'path' that leads towards it, is in general neglected[110].

Again, Lachmann (1973, p. 39) found occasion to come back to the issue of expectations. According to him, in fact, it is not possible to study situations of growth and change without taking in account expectations and plans, determined by individuals[111]. If attention was paid to such elements, it would be impossible to talk about some macro-economic equilibrium. In fact, to have macro equilibrium, according to Walras, it is necessary that each market is in equilibrium; in turn, for fulfilling such condition, individual equilibrium is necessary. But it is even too obvious that an *ex post* individual equilibrium is not possible for all the market actors. Certain plans do actually fail[112]. Even whenever expectations were in some way considered, like in Robinson (1956), the Cambridge school referred simply to 'mass expectations', with no room for individual expectations and plans[113].

In synthesis, the growth path that the Cambridge school had in mind was a path in which future follows the past (like for the modern econometricians)[114]. But in the real world, a world of change, future is unknowable and not all the expectations can be fulfilled on the base of past experience. In an uncertain world, therefore, universal success of plans is not possible and to define an equilibrium growth path is a contradiction[115].

We must conclude that the concept of equilibrium growth is a misconception. It would require a world of convergent expectations all of which are invariably fulfilled and, resting upon them, of individual plans all of which are consistent with one another. Walrasian general equilibrium makes sense only in a stationary world in which expectations play no part that could be called economically significant, and in which all plans of households and firms, attuned to the same set of existing prices, are consistent[116].

[107] Lachmann (1973, p. 36).
[108] Lachmann (1973, pp. 37-38).
[109] Lachmann (1973, p. 39).
[110] Lachmann (1973, p. 39).
[111] And he stressed that Keynes actually took in account such elements, but the neo-Ricardian school in Cambridge did not.
[112] Lachmann (1973, p. 39).
[113] Lachmann (1973, p. 40).
[114] Lachmann (1976d, p. 218).
[115] Lachmann (1973, p. 41).
[116] Lachmann (1973, p. 43).

Lachmann (1973, p. 43) added that there is no middle ground between the stationary state and the real world of the market economy. In the latter, equilibrating forces are often overtaken by disequilibrating forces, driven by divergent expectations and limited information[117].

### 3.4 Technical progress

Among the disequilibrating forces, a central role is played by technical progress[118]. With such remark, for sure Lachmann demonstrated to have absorbed the Schumpeterian lesson about the disequilibrating power of technical innovations. In the macro-formalist approach of the Cambridge school, of course, such a kind of technical progress poses several problems[119]. While equilibrium, in fact, implies perfect knowledge, economic change is characterized by ever-changing information. How to formalise the technical progress process? It is not possible, indeed.

Some members of the neo-Ricardian revolution tried to take in account the technical progress and its fundamental role for economic development. It is the case of the most important followers of Sraffa, the Italian Paolo Sylos Labini, according to who growth without evolution (or innovation) is inadmissible[120]. However, the analysis, even with the influence from Schumpeter, was still developed in a Ricardian framework and with the neoclassical production function. Such stylization is not able to take into account the fact that the decision process about the introduction of innovation cannot be centralised. It is dispersed in the mind of the economic actors. It will be the market process that will 'decide' which decision will be successful and which ones will fail[121].

## 4. Toward a Lachmannian perspective on business cycle: the *natural cycle*

Ferlito (2013) attempted to outline an integrated theory of the business cycle that, making the most of the long-standing Austrian tradition, would be capable of enhancing it with some external contributions, in particular those of Joseph Schumpeter, Arthur Spiethoff and Mikhail Tugan-Baranovskij. Ferlito (2014a) further developed such insights, bringing out a Lachmannian perspective on business cycle in what was there defined as *natural cycle*. We will summarize here that perspective, under the light of the above drawn analysis.

In our opinion, cyclical fluctuations are to some extent inevitable, even where development is generated in a manner that Austrian economic analysis defines as 'sustainable'. While agreeing with all the basic precepts of the Misesian tradition, we nevertheless believe that the more complex Hayekian vision, supported by a number of Schumpeterian elements, can demonstrate how every boom, however sustainable, is always followed by a depression. What distinguishes sustainable and unsustainable development, therefore, is not the onset of crisis but its intensity and the unfolding of prolonged depression. We could define as *natural* an economic cycle characterised by a stage of expansion considered to be 'sustainable' in the Austrian theory but followed by an inevitable

[117] Lachmann (1976b, p. 126).
[118] Lachmann (1973, p. 44).
[119] Lachmann (1973, p. 45).
[120] See Sylos Labini (1956, pp. 132-133) and Ferlito (2011, p. 103). And in Sylos Labini (1984, p. 81), the theme is reaffirmed: «If we take into account the tendency of diminishing returns from agriculture and mining, we are bound to recognize that, with unchanging methods of production, the rate of increase of the social product in the long run would necessarily tend to zero. This means that in the long run technological progress is not simply the main factor of economic growth: it is the necessary condition». See also Sylos Labini (1981, p. 41) and Sylos Labini (1989, p. 32).
[121] Lachmann (1973, pp. 47-48).

readjustment crisis. As we clarified in Ferlito (2013, p. 30), capitalism without fluctuations does not exist. We believe that, even using the Austrian approach, one may reach the conclusion that cyclic fluctuations are inevitable. To this end, the Misesian approach, that identifies manipulation of the interest rate and inflationary policies as the main cause of crises, may only be useful in part for our analysis. The Mises-Rothbard direction, in fact, seems to us to be too dogmatic and unable to grasp fully the phenomenology of capitalistic development. On the contrary, Hayek's approach, mixed with Lachmannian insights on expectations and Schumpeterian elements regarding innovation, is better suited to being impregnated with different contributions, in order better to outline the fundamental aspects of growth dynamics in capitalist economies.

The starting point is given by time preferences. At any given time, a time preference structure is matched by a production structure, i.e. a heterogeneous set of combinations of production factors, organized by human creative and entrepreneurial action in order to carry out processes that, over time, generate an output. This output should meet a demand defined by the structure of time preferences. This structure is reflected in an interest rate that, in turn, expresses the magnitude of the preference of economic agents for present goods compared to future goods.

It would therefore be wrong to start our analysis, following Mises and Hayek's *Prices and Production*, simply with monetary expansion or the lowering of the monetary interest rate. The central point, rather, is the distortion of the production structure defined by the system of preferences[122], and the reasons behind such a modification (expectations).

The system of time preferences is determined by the expectations of players on the market who, following their own expectations, seek to implement plans to achieve them. In a free market system, this mechanism of action takes place through the meeting of different subjects who in the process acquire new information and change their expectations. We are therefore witnessing a gradual and continuous process of re-adaptation of plans, in a natural effort to ensure that their realization 'meets' the realization of the plans of others.

In a system where there is no central bank, there is no monetary interest rate imposed by central authorities. In such as system, in which an effective free market would operate, there would simply be the natural equilibrium rate, capable of measuring the structure of time preferences. This means that price system as information transmission mechanism can actually work. What happens in the event of a unilateral modification on time preferences, such as an increase in the savings rate? This is the situation in which consumers become more future-oriented. It is thereby evident that a conflict arises between the time preferences of consumers and those of investors. Yet this also means that the equilibrium rate moves downwards, in an attempt also to orient the plans of entrepreneurs towards the future, who would therefore be encouraged to change the structure of the production process, starting with investments in more capital-intensive goods: the new lower interest rate is 'informing' investors that new resources are available for long-term investments. These investments will be financed precisely with the new savings. The new equilibrium rate, the only signal for players on the market, allows entrepreneurs to modify their expectations and plans; it informs them that new resources are available and that investments can be implemented profitably. The entrepreneurial instinct, typically Schumpeterian and also emphasized by Spiethoff, thereby allows the re-adaptation of expectations in order to harmonize time preferences.

Consequently, without the interference of the central bank, the natural equilibrium rate allows the production structure to adapt to the new system of time preferences. The profit expectations of entrepreneurs, encouraged by the lower rate of interest, are not frustrated because they find a counterpart in the different attitude among consumers, who are now less

[122] Hayek (1929, p. 123).

oriented towards immediate consumption. In this case, the elongation of the productive structure, the expansion cycle, is sustainable because the free interaction of players does not encounter interference and plans can be adapted. This does not mean that, in the process of adaptation, errors are not encountered or that certain expectations will not be frustrated. Preferences adaptation is a process that takes place in *real* time, not instantly. However, conditions exist whereby free transmission of information helps one to learn from mistakes and rearrange plans in line with the new situation. And the scenario itself will be continually changing. The re-adaptation process does not take place 'once and for all'; it is a continuous and never tamed process. Nonetheless, it can be implemented in a balanced manner only if the natural rate, generated by the demand-supply interaction, is the only signal (price) for the players, i.e. if divergent signals are not introduced from the outside which may wrongly guide decisions and make the discoordination of preferences perpetual, thereby preventing the free inter-temporal coordination mechanism of plans.

The picture is very different if a natural rate is also flanked by a monetary rate set by a central authority. In this scenario, the signal role played by the monetary rate overpowers that of the equilibrium rate, because it is immediately publicized and more visible to the players on the market: it 'anticipates' the discovery mechanism typical of the market, it creates a wall between supply a demand. The monetary rate, inasmuch, becomes one of the essential engines driving expectations and the subsequent formation of plans. A difference between the natural rate and the monetary rate, by disorienting certain agents, may therefore modify the structure of production but without this change reflecting a parallel change in time preferences. Or, another possibility is that the monetary rate may not follow a unilateral change in preferences, thereby interfering with the process of adaptation by the economic system whose own preferences have not changed.

Let us now assume starting from a situation of equilibrium, a hypothetical starting point '0'. We have a natural rate that reflects the meeting of time preferences and a production structure organised accordingly. Let's also suppose that, by chance or magic, the monetary rate set by central authorities is the same as the equilibrium rate. In this scenario, a disequilibrium between monetary rate and equilibrium value, whereby the former is at a value lower than the second, thereby prompting entrepreneurs to lengthen the production process, may arise in two ways. The first and most immediately intuitable hypothesis is that the central authorities cut the monetary rate in the belief, typical of monetarist dogma, that lowering the interest rate sets in motion an expansion cycle without negative repercussions. In such a scenario, central bank is misleading the profit expectations of entrepreneurs, wrongly informing them that new resources are available for investments. Therefore, entrepreneurs consider it is more convenient to invest in long-term projects; however, their choices are wrongly guided by a false signal, which, in 'hiding' the natural rate, does not allow the system to activate the necessary counter-measures to the resurgence of natural tendencies towards equilibrium typical of a regime of freedom of entrepreneurial action. Entrepreneurs, following interest rate manipulation, become more future-oriented, although more savings are not generated; consequently, available resources are fictitious and time preferences are changed unilaterally, leading to a disequilibrium in inter-temporal preferences; future-oriented investors and present-oriented consumers (or not as future-oriented as entrepreneurs). A change in time preferences always happens unilaterally, but when only the natural interest rate plays a role this change can be communicated to the other side of the market. The monetary interest rates does not allow the natural one to play is information transmission role.

Yet the situation whereby the monetary interest rate is below the natural rate may also occur without the intervention of central banks. In fact, the natural rate can be pushed upwards by expanding profit expectations. Entrepreneurial action, while always seeking

results, may be also determined by so-called *sentiment*, the inkling that certain initiatives might be profitable. In this situation, entrepreneurs become future-oriented, raising the interest rate level and pushing demand for funds to begin the longer-term production processes[123].

Even in this case, however, changes to preferences take place unilaterally. If, in the presence of a monetary rate, central banks do not realign the latter towards the equilibrium level in order also to encourage savers themselves to become more future-oriented by increasing saving amounts, the structure of preferences will remain disproportionate and the new inter-temporal production structure will reflect such an imbalance. In this case, therefore, expectations change before the intervention of central banks. And it is this emphasis on expectations, and their role in changing the structure of production, that allows us to explain why in 1939, ten years after his first work on business cycles, Hayek (1939, p. 3) argues that «a rate of profit rather than a rate of interest in the strict sense which is dominating» to explain fluctuations. In this as in the previous case, it is not monetary manipulation that plays the key role capable of altering the system of preferences by dis-coordinating plans and the structure of production. In the first situation, the crucial role is given by the manner and direction in which monetary expansion influence expectations. In the second case, on the other hand, expectations themselves divert the system away from equilibrium. The role of the central authority, in this case, would be to realign the monetary rate upwards in order to allow a rebalancing action, partly by discouraging the new demand for loanable funds and partly by increasing the monetary offer by means of additional savings.

Changing expectations, caused by (case 1) or the cause of (case 2) a monetary rate below its natural level, is – on closer inspection – a natural part of the entrepreneurial instinct emphasized by Schumpeter. Following Lachmann's main insights, we are explicitly discussing the concept of expectations: entrepreneurs see opportunities for profit and take advantage of them, i.e. they have positive expectations, or, otherwise, they are future-oriented and ready to make the production process more roundabout. Some are prepared to take risks on real innovations that can create a competitive advantage for them. Others by merely imitating on the wave of enthusiasm. Still others by launching poorly grounded economic initiatives.

Let's return now to our analysis and the disequilibrium between natural and monetary rates. The situation consideration therefore encourages the onset of major investments in production assets, or capital goods, whereby the economy becomes, in general, more capital-intensive, i.e. the production period is extended[124]. Hayek is precisely the link[125] between the Mises's[126] emphasis on the interest rate and the centrality of the disproportions created in the production structure[127].

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[123] It is precisely here that Hayek expresses his main criticism of his mentor Mises. For Mises, the difference between the natural rate and the monetary rate is always the result of monetary manipulations. Consequently, in Mises's cycle theory, monetary disorders are exogenous in nature. For Hayek, however, the central point is the distortion of the production structure that this disequilibrium brings about between the two rates; in addition, as we have seen, the difference between the two rates is not primarily due to monetary manipulations but to the structure of time preferences and the role of expectations. Therefore, the Hayekian approach can be defined as endogenous. Hayek (1929, pp. 145-148). Hayek (1931a, p. 35) emphasised that the primary cause of fluctuations must be sought in the changes generated in the way in which production resources are used.

[124] Hayek (1931a, pp. 35-36).

[125] The attempt to create a bridge between the monetary approach of Wicksell-Mises and the analysis of Spiethoff-Cassel was explicitly mentioned in Hayek (1929, pp. 133-134).

[126] Hayek (1929, p. 116): «The investigations of Professor Mises represent a big step forward in this direction, although he still regards the fluctuations in the value of money as the main object of his explanation, and deals with the phenomena of disproportionality only in so far as they can be regarded as consequences – in the widest sense of the term – of these fluctuations».

[127] Hayek (1929, p. 119).

The cardinal point of the theory is the difference created between entrepreneurial decisions and consumer choices[128]. In the situation in question, the funds available for investments initially do not correspond to the amount of savings. In fact, an artificially low monetary rate corresponds, on the capital market, to a higher availability of money because it translates into lower interest payable on investments.

> In general it is probably true to say that most investments are made in the expectation that the supply of capital will for some time continue at the present level. Or, in other words, entrepreneurs regard the present supply of capital and the present rate of interest as a symptom that approximately the same situation will continue to exist for some time[129].

What Hayek says is true, and the central role of expectations is resumed. Yet, all the more, the indicator on which entrepreneurs base their choices actually does not reflect any current propensity among consumers to save[130]. In this way, the proportion in which producers decide to differentiate production between products for the immediate future and those for the longer term (inter-temporal production structure) does not reflect the way in which consumers intend to divide their income between savings and consumption[131]. It is evident that sooner or later and disequilibrium in time preferences, which is reflected in an inter-temporal production structure, will arise and the typical form will be the frustration of the expectations of one of the two groups[132] (divergent expectations).

So, while entrepreneurs invest in new processes for the production of capital goods, savers are frustrated in their desire to consume, because what they want is not being produced. The *forced saving* phenomenon thereby comes about, i.e. – as a consequence of the fact that production resources were diverted from sectors close to consumers – there is a gradual reduction in the production of consumer goods and therefore an involuntary limitation of consumption.

The entrepreneurial impetus towards new investments, on the other hand, initially involves an increase in raw material prices and consequently of the capital goods produced with them. And the impetus must be considered as particularly violent in that the wave of the first innovative entrepreneurs is joined by the pressure of imitators described by Schumpeter, who grasp profit opportunities only in a second stage and attempt to benefit by following the 'fashion'. On a closer look, imitative speculation waves are typical of every boom stage described in history, tulip bubble in the 1600s through to the new economy bubble in 2001 and the recent housing bubble.

At the same time, demand for labour increases, and is attracted towards the new investments, with relative wages: this leads in turn encourages demand for consumer goods and prices in this sector also increases. And it is therefore evident that the increase in non-monetary income will not matched an increase in real incomes, because of the inflationary effect exerted by unsatisfied demand for consumer goods.

> This increased intensity of the demand for consumers' goods need have no unfavourable effect on investment activity so long as the funds available for investment purposes are sufficiently increased by further credit expansion to claim, in the face of the increasing competition from the consumers' goods industries, such increasing shares of the total available resources as are required to complete the new processes already under way[133].

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[128] Hayek (1933, pp. 143-148).
[129] Hayek (1933, p. 142).
[130] Hayek (1933, p. 144).
[131] Hayek (1933, pp. 144-145).
[132] Lachmann (1943 p. 69) and Hayek (1933, p. 145).
[133] Hayek (1933, p. 147).

Nevertheless, in order to be sustained, this process requires credit expansion without respite – which would bring about a cumulative increase in prices that sooner or later would exceed every limit. The conflict seems to be evident when demand for consumer goods exceeds in terms of absolute value the funds available for investment. At this point, the interest rate cannot but rise, frustrating demand for capital goods precisely when their price has also risen[134]. A considerable part of the new plant installed, designed to produce other capital goods, remains unused since the further investments required to complete production processes cannot be made[135]. As a result, in an advanced stage of the boom, growth in demand for consumer goods brings down demand for capital goods[136].

> The entrepreneurs who have begun to increase their productive equipment in the expectation that the low rate of interest and the ample supply of money capital would enable them to continue and to utilise these investments under the same favourable conditions, find these *expectations disappointed*. The increase of the prices of all those factors of production that can be used also in the late stages of production will raise the costs of, and at the same time the rise in the rate of interest will decrease the demand for, the capital goods which they produce. And a considerable part of the newly created equipment designed to produce other capital goods will stand idle because the expected further investment in these other capital goods does not materialise.
>
> This phenomenon of a scarcity of capital making it impossible to use the existing capital equipment appears to me the central point of the true explanation of crises[137].

As we have seen, such a situation can may actually occur even without monetary manipulation but as a result of growing profit expectations which, since the monetary rate is not allowed to rebalance itself with the natural level, cannot find counterparts in realignment with the value of the savings[138].

> If the rate of interest were allowed to rise as profits rise […], the industries that could not earn profit at this higher rate would have to curtail or stop production […]. If […] the rate of interest is kept at the initial low figure […] and investments whose yield is not negatively affected continue in spite of the rise in final demand, the rise of profits in the late stages of production and the rise of costs will both come into play and will produce the result which the rate of interest has failed to bring about. The rise of the rate of profit on short as compared with that on long investments will induce entrepreneurs to divert whatever funds they have to invest towards less capitalistic machinery, etc.; and whatever part of the required reduction in total investment is not brought about by this diversion of investment demand towards less capitalistic type of machinery will in the end be brought about by a rise in the cost of production of investment goods in the early stages[139].

Thanks to this analysis, Hayek helps us clear out every under-consumption theory.

- The scarcity of capital leads to partial non-use of existing capital goods.
- The abundance of capital goods is the symptom of a scarcity of capital.
- This is not caused by insufficient demand for consumer goods but by excessive demand for these goods. In fact, demand for consumer goods becomes so pressing as to impede

[134] As the rate of interest increases, the rate of profit declines (Hayek, 1939, p. 31).
[135] Hayek (1933, p. 148).
[136] Hayek (1939, p. 31).
[137] Hayek (1933, pp. 148-149).
[138] Hayek (1929, pp. 81-82) acknowledged Spiethoff's central role in developing a theory of fluctuations founded on disproportionalities and the scarcity of capital but he criticises his German colleague for not identifying the prime reasons for these phenomena. «Assuming that the rate of interest always determines the point to which the available volume of savings enables productive plant to be extended – and is it only by this assumption that we can explain what determines the rate of interest at all – any allegations of a discrepancy between saving and investments must be backed up by a demonstration why, in the given case, interest does not fulfil this function. Professor Spiethoff, like most of the theorists of this group, evades this necessary issue». See also Hayek (1929, pp. 89-90).
[139] Hayek (1939, pp. 32-33).

any prolonged production process, despite the fact that related means of production are available[140].

Inasmuch, the economy is unable to sustain production oriented over and above its possibilities. Sooner or later, it is realised that an increase in wages is cancelled by growing inflation. In addition, demand for capital goods runs out, taking with it the over-production in the particular sector and it is here where problems arise. Many economic initiatives set up through excessive reliance on credit cannot be completed, although the debts still have to be paid. Many companies have to be expelled from the system. Capital is scarce and banks raise interest rates. A period of adjustment and return to equilibrium begins, only it has aspects similar to a depression.

The wave dynamics typical of capitalism would be sustainable if, in typical situations of bright expectations (kaleidoscopic society), players were free to learn through interaction with each other and allow their choices to be judged on the market. Without the interference of a monetary rate, players would be forced to seek, on the market, to what extent their expectations are in line with those of other agents and therefore this would allow plans to be realised. The natural rate, although unknown as a magnitude, is dynamically given by time preferences, thereby generating a production structure in keeping with such preferences. The system would move and settle continuously. In this way, every change in the structure of production would be the adaptation to a change in time preferences, a dynamic adaptation: if profit expectations rise, pushing the natural rate upwards, the new production structure cannot begin to change until the new natural rate also convinces consumers to change their attitudes; at the same time, it is likely that not all the intense demand for new investments will be 'met' from new savings, so that the natural rate will tend to stabilise at a lower point than the initial expansionist impetus generated by entrepreneurial expectations. Demand and supply mechanism will generate, through information transmission, the new price able to link expectations of investors and consumers.

As can be seen, the situation is very different if there is a monetary rate capable of disguising the real strength of natural rate. And it is precisely the discrepancy generated between the natural and monetary value of the interest rate that tells us how long and painful cyclical dynamics will be[141].

In short, a sustainable growth path is generated when time preferences change on a global scale. And this is only possible if the central element measuring time preferences – the interest rate – is left free to set itself on the market through the interaction of individuals freely exerting their entrepreneurial function in the process of meeting their needs. Typically: consumers become more future-oriented and therefore save more; the interest rate falls and this *induces* a change time preferences also on the part of investors who, given the lower rate, are prompted to extend the structure of the production process. The opposite but still sustainable case arises when only profit expectations increase; on a free market, where the rate is not decided arbitrarily by artificial policies of the monetary authority, the rate of interest is encouraged to rise in order to attract capital from savings and orient towards financing growth.

On the contrary, growth becomes unsustainable when a monetary interest rate, set by central monetary authorities, overcomes the information transmission mechanism otherwise played by the natural (market) rate. Even in this case, two situations may occur. On the one hand, there is the typical case of monetary expansion (inflation, lower interest rate, credit expansion). On the other hand, in the face of pressure of demand for credit by the investment

[140] Kurz (2003, p. 192).
[141] Hayek (1929, p. 183).

sector, characterised by positive profit expectations, the monetary rate is held below the new equilibrium level.

So far, our vision seems simply to be a rewriting of the Hayekian setting, embellished by a number of aspects linked with the theory of expectations. In fact, we limited ourselves to discussing sustainable and artificial booms, describing crisis as an inevitable consequence of growth arising from distortions in the production structure generated by imbalances in the system of preferences. Now we shall attempt to demonstrate how, on the other hand, crisis is a consequence of all stages of growth and how sustainable and artificial booms are not distinguished by the onset of depression but by its intensity and duration. Inasmuch, in our view, even in the case of what Austrians describe as 'healthy' expansion, the growth stage will be followed by a process of resettlement (crisis). This is because – even for sustainable development – positive profit expectations, once the cycle has been set in motion, facilitate the appearance of speculative-imitative initiatives that, at a given point, must be liquidated in order to 'normalize' the progress of growth. What distinguishes sustainable development from an artificial boom is not the emergence of a crisis; the difference lies in the *nature* of the crisis and its *intensity*.

The crucial elements in our analysis, therefore, are expectations and the imitative process. As we have seen, Hayek (1929, p. 147) recognised the central role of expectations as early as 1929, when he emphasised profit expectations as the driving force behind entrepreneurial preferences, with the possibility of entrepreneurs becoming more future-oriented and thus shifting the equilibrium interest rate upwards.

Profit expectations are a key element in both the Hayekian vision of sustainable growth and in the opposite case. We will use them to describe the emergence of imitations and secondary expansion, then followed by a crisis. It is now time to see how the so-called *sustainable growth* in Austrian theory turned, in our view, into the *natural cycle*.

In the ideal situation where the monetary rate does not exist (nor the Central Bank), a lengthening of the production period, with the emergence of capital-intensive investment processes, is in fact possible when either consumers or investors become more future-oriented. If consumers are the first to change their preferences, this will take the form of growing savings followed by a decrease in the natural rate of interest, in order to attract investors to use those resources for more roundabout investments. If, on the other hand, entrepreneurs are the first to push towards lengthening of the production structure, the natural rate will rise in order to attract savers in the same direction, thereby providing necessary resources for new investments. In both cases, the natural rate is driven by a change in the structure of temporal preferences, in turn generated by different expectations. What follows is a process of sustainable development.

The role of business expectations in generating capital-intensive investments is also emphasized by Schumpeter. We also saw earlier how Hayek refers explicitly to Schumpeter in highlighting the innovative and investment process that follows positive profit expectations. In this process of expansion, in accordance with the traditional version of the ABCT, the aspects needed to generate a crisis do not arise.

However, observation of reality leads us to emphasize that the first wave of investments it is always followed by a secondary wave of imitations and speculations. As analysed in particular by Schumpeter (1939), the pace of economic growth becomes particularly sustained when the primary wave of entrepreneurial investments is joined by a stage of secondary growth encouraged by the copy-cat instincts of imitators in search of profit and driven by 'fashion'. On a closer look, imitative speculations are typical of all the boom stages recorded in history, from the mania for tulips in the 17th century to that for new economy in 2001 and more recently for real estate. Why are imitations inevitable? This is what Lachmann has in mind with his vision of capitalist development characterized by innovation and

imitation. Keeping faith with subjectivism and the role of expectations, it is easy to imagine how the success of entrepreneurial initiatives is readily followed by imitators looking for success within what at first sight always seems to be a period of growth destined never to end. The primary stage of growth is characterised by investment set in motion by a limited number of entrepreneurs – those who are able to seize opportunities that go unnoticed by most people and therefore the first to change their expectations. The secondary stage is characterized by the appearance on the market of an exceptional number of imitators.

This is how we identifies the first two stages in our natural cycle: primary expansion, generated by a change in the structure of time preferences and expectations (the system becomes more future-oriented), and secondary expansion characterized by imitative investments.

If, therefore, the reality of imitative speculations cannot be eliminated, it outlines the character of the growth process by emphasizing development above the initially imagined level. As for the primary wave of investments, the second wave is also generated by profit expectations, particularly the expectation that the current situation will not change[142]. From a quantitative point of view, moreover, imitation (secondary) investments might even be greater than the first cycle of investments since they involve a larger number of individuals, whose expectations are 'over-excited' by the boom[143]. These secondary investments will have to be liquidated through an adjustment crisis, as we shall attempt to demonstrate.

The fact that secondary wave investments necessarily bring about their liquidation, by generating a crisis, even if for boom not induced artificially by discoordination between natural and monetary rates, apparently seems to be at odds with the traditional version of the Austrian theory, which does not admit the crisis whenever such discoordination is not at the base of the growth process. We believe, on the other hand, that – while not denying the validity of the Austrian approach – this vision should be superseded.

Let's summarise the appearance of primary expansion characterising our natural cycle. When, given positive profit expectations, entrepreneurs become more future-oriented, the natural rate of interest grows, in order to move consumer preferences in the same direction, encouraging them to save more and thereby generate resources to meet increased demand for loanable funds by investors. The mirror-image situation arises when consumer expectations change in a more future-oriented direction; in this case, the natural rate of interest falls, informing entrepreneurs that new resources are available for investments in the longer term. Both situations, to use 'Austrian' jargon, give rise to a sustainable boom.

According to this schema, given that the lengthening of the production structure derives from a change in time preferences and market operators are not deceived by a monetary rate inconsistent with the natural rate, current investments will always find available resources to complete the business projects launched. This is precisely because, without the interference of political-monetary authorities, market operators are free to 'reveal themselves' to each other and readjust their scheme of preferences in conformity with the modified situation.

However, we have the distinct impression that this view does not take a fundamental fact into account: the *rhythm* of investments in *real time*. The Schumpeterian distinction between primary wave and secondary wave investments in this regard becomes critical. In fact, the initial increase in investments followed by a change in the structure of time preferences does not seem to generate any problem. Whether savings grow or the natural interest rate increases because of profit expectations, the timing of the onset of business ventures is necessarily dictated by the realignment of preferences. When savings increase, in fact, the problem does not arise precisely because the increased resources are the first cause of the reduction of the

[142] Schumpeter (1939, p. 145).
[143] Schumpeter (1939, p. 146).

natural rate and the lengthening of the productive structure its consequence. All the more, if there is increased demand for loanable funds, new resources for investment will not be available until consumers decide to increase their propensity to save, that is, until the intentions of the two groups of players re-align again.

The matter changes when second wave of investments comes into play, generated by the imitative process. It is first and foremost a natural fact, intrinsic to the boom, regardless of its type. Indeed, as Schumpeter emphasized, innovation is never generated as a mass phenomenon; on the contrary, it arises through the initiative of certain 'elect spirits' – entrepreneurs – whose essence lies precisely in being able to grasp profit opportunities where others fail to see them. Subsequently, in any case, when the expansion phenomenon is already set in motion – when an opportunity for profit has already been identified and grasped by some people – the prospect of grabbing a slice of the cake becomes tempting for many (the role of expectations). Not for those who have seized the opportunity and, having begun to invest, are now on the way towards reaping their reward; but for those who were bystanders and are now seeking to take part in the up stage (with a time lapse compared to the primary wave).

What form does the imitative desire take? It generates new demand for loanable funds in order to insert a more roundabout production process into the expansive cycle. This means an attempt to extend the expansion process temporarily, thereby also increasing the degree of uncertainty.

> More time taken implies more things can happen – providing the possibility of greater productivity but also greater uncertainty. Since the value of higher order (capital) goods depends on the prospective value of the consumer goods they are expected to produce, the elapse of time, and with it the arrival of unexpected events, implies that some production plans are bound to be disappointed and thus the value of specific capital goods will be affected[144].

And this brings us to the second stage of the natural cycle: secondary expansion. Pressure on demand for loanable funds forces the natural interest rate to rise further, in order to attract new savings to finance these investments. And this is where the role of banks joins the game to a very similar extent to that described by Schumpeter. Initially, demand for loanable funds cannot be met because preferences have not yet realigned with the new interest rate level and it is even likely that such a realignment does not actually take place.

However, the positive sentiment, the positive profit expectations, that become 'incandescent' at the end of the primary expansion stage, also plays a role as regards the action of banks. In fact, precisely because of what happens during expansion, it is highly likely that banks make 'virtual funds' available that are not backed up by real savings (as is the case during the first wave of investments), driven by expectations that the adaptation of consumer preferences (further savings) cannot but occur, precisely because of the enthusiasm generated by the boom. This returns to the Misesian phenomenon of the creation of money.

On the other hand, it is more than likely that the long-awaited realignment does not come about. Even though the natural rate may increase, in view of the profit expectations arising from the request for second wave of investments (imitative), the likelihood that savings may increase is limited by two factors. The most obvious one is of course that consumers must also consume, hence their capacity for saving (and realignment) is objectively limited by the necessity to consume. In addition, in all likelihood, consumers will also be influenced by the general enthusiasm of the boom stage and consequently change their preferences in the opposite direction, i.e. by increasing their propensity for consumption. This is all the more true given the fact that real wages grow during the boom in order to attract workers into the

[144] Lewin (2005, p. 151).

new investment areas or to employ formerly unemployed workers. As in the conventional Austrian explanation, this leads to pressure in demand for consumer goods, with an initial phenomenon of forced savings and the production structure subsequent need to return to present-oriented projects (consumer goods). At this point, the growth of price and wages and the pressure on prices goods of consumer goods brings about what Hayek called the 'Ricardo effect': it helps explain why a prolonged boom stage driven by monetary expansion is likely to turn into a crisis.

> [I]f the credit expansion boom does not come to an end sooner for some other reason, it must come to an end when consumer product prices advance ahead of wage and resource prices. The Ricardo effect lowers real wages and encourages a shift toward labor-intensive methods of production. A lowering of the real wage of labor makes short-term (labor-intensive) projects appear to be more profitable than long-term (capital-intensive) methods of production. The Ricardo effect may account for the sudden wave of bankruptcies among the large fixed-investment projects that occurred toward the end of many nineteenth-century business cycles[145].

So, while the first wave of investments can complete its cycle because of the real existence of prior and stable funds (without which the expansion cycle would not even have started), the second wave will be frustrated by a change in consumer preferences and a banking policy influenced by expectations of profit.

The difference between sustainable growth and artificial boom, therefore, lies in the following fact: where the 'defective' cycle is triggered by a discoordination between a natural rate and a monetary rate controlled by the monetary authorities, in general many of the roundabout processes of production end up being frustrated by the onset of the Hayekian phenomenon of scarcity of capital, as described above. On the other hand, for a sustainable boom (*natural cycle*) generated by a change in expectations, it is only the inevitable wave of speculative-imitative investment, backed up by a banking policy influenced by a positive sentiment, which itself will later be frustrated, wherein a crisis will be the necessary action to liquidate such faulty initiatives.

What will follow in the latter case will be a crisis (third stage of the natural cycle) but limited in terms of intensity, duration and the number of sectors involved. We could even define it as a transitory readjustment crisis, which does not cancel the beneficial effects of the previous boom but merely liquidates business ventures launched for speculative-imitative purposes. What will not follow, instead, is a fourth stage, the depression, typical of the 'defective' cycle.

## 5. Conclusions

The analysis developed so far allows us to see that the famous Hayek-Keynes debates was just a small part of a bigger controversy between the Austrian School and the Cambridge School. In particular, the Italian Piero Sraffa engaged with Hayek a radical debate about the role of money and capital and the concept of equilibrium. However, it is only several decades later that Ludwig M. Lachmann, a student of Hayek at LSE during the 1930s, realized the bigger scope of the Sraffian attack: a neo-Ricardian revolution aiming to destroy the subjectivist revolution of the 1870s. In doing so, Sraffa developed, in Cambridge, a school that abandoned some of the positive insights of Keynes, namely subjectivism and the role of expectations. Therefore, Lachmann engaged himself in a struggle to bring out not only all the weakness of the Sraffian attack, but also to radically criticize the Cambridge neo-Ricardian approach. Such critics will be fundamental in building his radical subjectivism, grounded on

[145] Moss (2005, pp. 8-9).

the Shackle *kaleidic world* and on the impossibility for equilibrium to actually happen, even if equilibrating tendencies operate, but they are overcome by disequilibrating forces such as divergent expectations and technological change.

Finally, we used Lachmann's framework to revise the Austrian business cycle theory in a way that brings us to conclude, in a very simple way, that the cyclical trend is the form that development takes in a capitalist economy.

While acknowledging the basic assumptions of the Austrian business cycle theory as valid, especially in Hayek's version, we must also recognize that it does not suffice to eliminate the Central Bank and its 'deceptive' role exerted through the monetary interest rate in order to annihilate the cyclical dynamics of development.

The systematic introduction of 'real' expectations, acting in 'real time', in the sense advocated by Ludwig Lachmann, can only lead us towards the rediscovery of secondary investment waves (imitations and speculations) on which, in particular, Schumpeter focused. In being made possible by a banking policy sensitive to and part of the general positive sentiment of an expansion stage, they precisely match that part of the growth stage that has to be liquidated through a readjustment crisis.

We therefore believe that the Austrian distinction between sustainable and unsustainable growth is valid. What we rather seek to overcome is the belief that, in the first case, the expansion stage is not followed by a crisis. On the contrary, a liquidation crisis occurs in both cases. The difference lies in the intensity and duration of the crisis. Most of the long-term entrepreneurial projects initiated by entrepreneurs will struggle to be completed in the case of a boom generated from the outset in an 'unhealthy' manner. For growth set in motion in a 'sustainable' manner, only the imitative and speculative initiatives will not be completed. Inasmuch, the positive effects of the first part of the expansion will not be eliminated. It is merely a question of 'clearing up'. We call this instance the *natural cycle*. In the previous case, on the other hand, reconstruction will have to begin from a pile of rubble.

## APPENDIX 1: Hayek and the (hidden) critic to Keynes's *General Theory* and Full Employment Policies

While in the early 1930s Keynes and Hayek were the major figures in a heated academic debate about money and capital[146], in which Keynes also and especially involved the Italian Piero Sraffa[147], it might seem at first sight that the Austrian economist set aside an organic demolition of the ideas expressed in 1936 by his rival in the *General Theory*, above all as regards so-called full employment policies, i.e. fiscal policy manoeuvres intended to stimulate demand in an effort to boost employment.

> When *The General Theory* was published in 1936, Hayek was expected to criticize Keynes' new model. However, surprisingly, Hayek decided to remain silent and let his opponent win. […] What would have happened if the intellectual battle between Hayek and Keynes had been renewed in 1936?[148]

Hayek himself, in the future, would regret not having devoted organic work to criticising the new Keynesian theories. Yet he personally explained why this did not happen.

> I had begun a review for «Economica» of his *Treatise on Money*, which had just been published, and dedicated considerable effort to drafting two long articles about this book. The first of these two reviews saw Keynes respond with a counterattack on my *Prices and Production*. I felt that I had largely demolished his theoretical scheme (especially in Volume I), although I had a great admiration for its many deep insights, albeit lacking a systematic nature, contained in Volume II. I was greatly disappointed when all this effort seemed to have been pointless because, after the publication of the second part of my article, Keynes told me that in the meantime he had changed his mind and no longer believed in what he had written in that work.
> This was one of the reasons why I did not resume the attack when he published his by now famous *General Theory* – something which I later very much regretted. Yet I was concerned that, before completing my analysis, he would have changed his mind again[149].

However, as demonstrated in Sanz Bas (2011), although it is not possible to find a debate such as the one on the Treaty of Monetary Policy published by Keynes in 1930, Hayek's subsequent works do include timely and reasoned criticisms as regards the main conclusions of the new Cambridge macroeconomics. In particular, in Hayek (1939, 1941) there is an explicit attempt to build macroeconomics capable of demolishing the key points of Keynesian thought[150].

In Hayek (1939, p. 3), the Austrian economist clearly states that it is his intention to demonstrate, in contrast to Keynes, that the consumer does not stimulate but, on the contrary, discourages demand for capital goods. Consequently, stimulating aggregate demand does not have a beneficial effect on income and, as a result, on employment. Following Sanz Bas (2011, pp. 297-299), we can identify three main reasons why such a direct relationship does not exist. The first is that, in modern economies, only a given number of workers is directly employed in production sectors close to consumption, whereby a significant portion of production resources has no direct relationship with end markets. The second reason lies in what Hayek called the 'Ricardo effect'[151]: for a production structure to remain such, the relative structure of the pricing system must not be changed.

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[146] The Hayek-Keynes debate comprises articles by Hayek (1931b; 1931c; 1932a) and Keynes (1931).
[147] For the Hayek-Sraffa debate, on the other hand, see Hayek (1932b) and Sraffa (1932a; 1932b).
[148] Sanz Bas (2011, p. 290).
[149] Hayek (1929, p. 284).
[150] See Sanz Bas (2011, p. 293n).
[151] See Hayek (1942a; 1969) and the detailed formulation in Hayek (1939, pp. 8-37). The term 'Ricardo effect' derives from the Ricardian assertion that growth in wage encourages entrepreneurs to replace workers with machines and vice versa. Hayek writes (1939, p. 10): «a rise in the price of the product (or a fall in real wages) will lead to the use of relatively less machinery and other capital and of relatively more direct labour in the

Hayek explains that, after applying Keynesian demand policies, this peculiar modification takes place in relative prices, and as a result, many entrepreneurs will modify their production strategies and will try new, less capital intensive (and therefore more profitable in relative terms given the new pricing structure) production strategies. This change in production strategies will result in a change in the composition of the demand for capital goods of those entrepreneurs, and will also reduce the aggregate amount of money devoted to buying higher-order capital goods in the market. Therefore, Hayek notes, many entrepreneurs will stop buying capital goods from their usual suppliers. As a result, these suppliers will lose part of their markets and many will be forced to lay off workers or event to cease business[152].

This means that the change in the structure of relative prices, set in motion by Keynesian policies intended to stimulate demand, triggers a disinvestment process that, weakening the production goods sector, generates unemployment. Thirdly, Hayek maintains that, even when employment is stimulated with additional spending, it cannot be assumed that increased incomes will be distributed to sectors experiencing a crisis.

Although *The Pure Theory of Capital* is Hayek's last complete written work of economic theory, in subsequent years he had opportunities to return to the topics dear to him in various situations with essays, articles and conferences. In the 1950s, in particular, he published three essays on the relationship between aggregate demand, full employment, inflation and development[153]. In particular, he argues that inflationary dynamics is the price to be paid for implementing persistent full employment policies (stimulating aggregate demand) through growing central planning[154]; in fact, Hayek precisely disputes that a higher level of employment (full employment) can be achieved and *maintained* by means of monetary pressures[155]. The Austrian economist's central thesis is that short term injections of money may well help maintain jobs at a higher level than would be possible otherwise; nonetheless, in the long term, the employment level resulting from these policies is destined to fall[156]. The origin of these policies should be sought in a mistaken belief introduced by Keynes.

These policies are however constantly represented as if […] the choice were between full employment thus defined and the lasting mass unemployment of the nineteen-thirties.

The habit of thinking in terms of an alternative between "full employment" and a state of affairs in which there are unemployed factors of all kinds available is perhaps the most dangerous legacy which we owe to the great influence of the late Lord Keynes[157].

While it is true that an increase in monetary incomes may increase employment, the basic mistake is to believe that unemployment is due to insufficient aggregate demand and that pressure on it may therefore automatically generate employment[158]. Such reasoning brings about what we have seen above. That is, if spending is spread across the various sectors in a manner other than that in which employment is spread in the same sectors, then it cannot be assumed that an increase in spending has a positive effect on employment.

Unemployment can evidently be the consequence of the fact that the distribution of labour is different from the distribution of demand. In this case the low aggregate money income would have to be considered as a consequence rather than as a cause of unemployment. Even though, during the process of increasing incomes, enough expenditure may "spill over" into the depressed sectors temporarily there, to cure unemployment, as

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production of any given quantity of output. In what follows we shall refer to this tendency as the "Ricardo Effect"».

[152] Sanz Bas (2011, p. 298).

[153] Hayek (1950; 1958; 1959).

[154] Hayek (1950, pp. 174-175).

[155] Hayek (1950, pp. 175-176).

[156] Hayek (1950, pp. 175-176).

[157] Hayek (1950, pp. 175-176).

[158] Hayek (1950, p. 176).

soon as the expansion comes to an end, the discrepancy between the distribution of demand and the distribution of supply will again show itself. Where the cause of unemployment *and* of low aggregate incomes is such a discrepancy, only a re-allocation of labour can lastingly solve the problem in a free economy[159].

And this brings us to the Austrian Theory of Business Cycle. The main outcome of monetary manipulations, inflationary forces and planning is to create a distortion in the system of resource allocation. A readjustment process is only possible where the free interaction of individuals allows the creation of information (discovery process) needed to catch mistakes and take a different path.

In this scenario, on the other hand, monetary expansion directs demand towards sectors that, without exogenous stimulation, would not be favoured. When such expansion comes to an end, probably because inflation has reached an unsustainable level, demand will be forced to return in the direction expressed by the temporal preferences in existence prior to monetary manipulations; inasmuch, employment created artificially in all probability will not be permanent. The new unemployment level may even be higher than the pre-stimulus situation, if monetary injections encouraging demand have not only increased employment but have also stimulated the creation of new economic initiatives in the sectors so stimulated. This is why the result of inflation is worse than the problem intended to be resolved.

This problem is associated with the question of wage rigidity[160]. In fact, expansionary monetary policies can create a bad habit: the falsification of real incomes and the impossibility of allowing the market to adapt, where lower incomes are necessary to readjust the production structure in several scenarios (an economic crisis or the end of a war). There are situations where the policy of supporting employment and wages is maintained for a long period; when a policy taking the opposite direction is needed, can it be implemented without causing social conflict? Such a scenario is evident in the demonstrations seen in Spain or Greece in 2012: artificial policies of monetary expansion, inflation and full employment have seen these countries become accustomed to a standard of living and employment situations that are inconsistent with their real economic structures. Now that this deception has come to light, and readjustments are vital, the population is unable to accept the price to be paid for having enjoyed expansive policies of full employment that drugged the system by creating income where the economic structure was actually unable to do so. This must be associated with all the additional elements that, under Keynesian influence, can maintain the downward rigidity of wages[161], not the least the power of trade unions[162].

It is self-evident how such situations can be governed only by a growing level of Government control. This means a further decrease of economic and action freedom, as well as higher inflation, so that Governments can control the population and keep it 'happy' only through further full employment policies. Once begun, this vicious circle seems to be very difficult to halt. The two possible outcomes are revolution (because employment and income levels are no longer sustainable) or total control. It would have been better to act differently right from the outset.

If the outcome of economic policy is not to be altogether different from what has been desired, if we are not to be driven from one expedient to another, economic policy more even than any other must be long range policy, governed less by the pressing needs of the moment than by an understanding of the long period effects[163].

[159] Hayek (1950, p. 177).
[160] Hayek (1950, pp. 178-180).
[161] See Hayek (1958; 1959).
[162] Hayek (1958).
[163] Hayek (1950, p. 184).

However, faced by the evident political inability to implement wise and long-term economic policies, Hayek comes to doubt the adequacy of democratic governments to deal with the political problems of the moment. This is because of the inevitable desire to be re-elected and therefore the possibility of achieving this result via the shortest route: by spending money. It is therefore clear that, because of such a narrow view, the control of money must be taken away from politics, a politics that rewards politicians who create inflation (with temporary employment and future unemployment) while punishing those who, in being obliged to curb inflation, will see the false employment created by their predecessors simply fade away[164]. Yet Hayek is sceptical over such possibilities and remarks that it is

> more than doubtful whether in the nature of democratic institutions it is possible that democratic governments will ever learn to exercise that restraint, which is the essence of economic wisdom of not using palliatives for present evils which not only create worse problems later but also constantly restrict the freedom of further action[165].

Hayek returned to this topic in the mid-1970s, especially after winning the Nobel Prize in 1974. Interest in the relationship between aggregate expenditure and full employment was resumed in the wake of serious inflation that became pressing after the oil crisis in the early 1970s and the end of the Bretton Woods agreement in 1971. Hayek even addressed this issue in the speech he gave during the Nobel Prize award ceremony[166]. In 1975, the Austrian economist expanded the argument with a paper for the *Institute of Economic Affairs*[167] and a speech presented at a conference, *The Money Problem Today*, held in Rome on 8 February of the same year[168]. The opening remarks at this Conference deserve to be quoted in full; the reader will forgive us, but in doing so we aim to highlight first of all how the topic of the presumed relationship between aggregate expenditure and employment genuinely concerned the Austrian economist; secondly, we wish to emphasise the controversial tone adopted by Hayek, which clearly shows that he was by no means alien to the 'practical' concerns affecting the situation of his own times, so similar to our own.

> After a unique quarter-century of great prosperity, the economy of the Western world has arrived at a critical point. […]
>
> By eliminating the automatic brakes that operated in the past (namely, the gold standard and fixed rates of exchange), we have indeed succeeded in maintaining the full employment – and even over-employment – created by an expansion of credit and ultimately prolonged by open inflation. We have, in fact, succeeded in maintaining this for a much longer time than I should have thought possible. But the inevitable end is now near, or perhaps has already arrived.
>
> I find myself in an unpleasant situation. I had preached for forty years that time to prevent the coming of a depression is during the boom. During the boom nobody listened to me. Now people again turn to me and ask how we can avoid the consequences of a policy about which I had constantly warned. I must witness the heads of the governments of all the Western industrial countries promising their people that they will stop the inflation *and* preserve full employment. But I know that they *cannot* do this. I even fear that attempts to postpone the inevitable crisis by a new inflationary push may temporarily succeed and make the eventual breakdown even worse[169].

Faced with the disaster caused by inflation as regards the distortion of the employment system, Hayek saw only three possible alternatives[170]:

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[164] Hayek (1976, p. 16).
[165] Hayek (1950, p. 184).
[166] Hayek (1974).
[167] Hayek (1975b).
[168] Hayek (1975a).
[169] Hayek (1975a, p. 3).
[170] Hayek (1975a, p. 4).

1. continue with inflation through to the total disintegration of the economic system;
2. impose continuous controls, which would bring about centralisation and then totalitarianism;
3. halt monetary expansion by allowing the system to attempt, through a process of discovery of information and adaptation of preferences, to reorganise the distribution of labour and capital in keeping with the structure of demand and the general structure of intertemporal preferences.

It is clear that solutions 1. and 2. are not desirable; and it is equally true that solution 3. cannot avoid a so-called 'stabilisation crisis'. As we saw above, the end of monetary expansion may launch the readjustment process, the new search for equilibrium. Yet the transition cannot but be painful. It is clear then – and the problem is exquisitely political – that while Keynesian policies in representing the budget deficit as a virtue are highly fascinating[171], the measures that keep a country on the path of sustained rather than fictitious growth are entirely unpopular and therefore of little appeal to politicians[172].

As we have seen so far, this should be enough to demonstrate how the trumpeted relationship between an increase in aggregate spending and full employment is not true. In fact, the inflation generated by increased spending, while producing desirable effects in the short term (increase in employment and monetary wages), ends up being more damaging. Indeed, distorting the structure of employment in order to maintain an artificial level of employment requires continual injections of money. Yet this situation is not indefinitely sustainable and situations such as the Great Inflation in Austria and German in the 1920s are clear proof. When further artificial inflation is no longer possible, the system will begin to move towards realignment, which entails the loss of such artificially created employment resources as well as the closure of economic activities launched in sectors where aggregate demand had been manipulated. The outcome is consequently a situation worse than at the outset.

Is there perhaps a remedy for all this? Having made so many errors, it is clear that restabilising the situation cannot but be painful. Yet it will be fruitful in the long term only if it brings with it new principles and new approaches, rather than the same old mistakes. Firstly, it idea that "full employment" is desirable must be buried as a paradisiacal concept and therefore not possible in human affairs. What Hayek (1975a, p. 17) says is that we should 'content ourselves' with achieving a «high and stable level of employment [i.e., *continuing*]». And this, as we saw in the previous chapter, can only be allowed in a free-market regime, where enterprise can be performed and, through a mechanism of free transmission of information, expectations and plans can meet and change precisely thanks to their meeting and the new information. All this in an effort to create a production and employment structure in harmony with the system of time preferences.

## APPENDIX 2: The Fatal Conceit

Hayek not only criticized interventionism as expressed in Keynes's new macroeconomics, but he also developed all these insights[173] within a broader philosophical paradigm, which can be considered as the definitive theoretical answer to every attempt to impose economic interventionism even when disguised by good intentions such as full employment. After spending years to demolish – from the standpoint of economic theory –

[171] Hayek (1975a, p. 8).
[172] Hayek (1975a, p. 9).
[173] Together with what he learned during the Socialist Economic Calculation Debate. See Ferlito (2013, pp. 113-119).

all interventionist tendencies (monetary and fiscal), he then turned his attention to the development of a much broader theory of society, freedom and spontaneous order to demonstrate that the predominant economic policies are steps towards general human slavery.

His speech accepting the Nobel Prize in 1974 is memorable[174]. Once again, the starting point for the Austrian economist was the inflationary policies perpetrated by Governments and, even more serious, supported by many economists[175]. Taking up a number of crucial considerations expressed in Hayek (1942b), Hayek (1974, p. 30) associates the persistent errors of economists with «their propensity to imitate as closely as possible the procedures of the brilliantly successful physical sciences». Economists, with the pretext of being 'scientists', imitate the methods of the natural sciences but in doing so apply an inappropriate method to the study of human sciences, giving birth to utterly unscientific theories, since the method is not imposed by the object studied in accordance with to the Aristotelian tradition but by the ideological preconceptions of the scholars themselves. This scientific pretext is entirely evident in so-called full employment policies.

> The theory which has been guiding monetary and financial policy during the last thirty years, and which I contend is largely the product of such a mistaken conception of the proper scientific procedure, consists in the assertion that there exists a simple positive correlation between total employment and the size of the aggregate demand for goods and services; it leads to the belief that we can permanently assure full employment by maintaining total money expenditure at an appropriate level. Among the various theories advanced to account for extensive unemployment, this is probably the only one in support of which strong quantitative evidence can be adduced. I nevertheless regard it as fundamentally false[176].

Hayek consequently argued that, in the social field, a theory cannot be true merely because it is quantitatively demonstrable. Let's take an example. We could take the distribution of GDP in European countries and, for the same countries, the number of people with large ears. We may, quite by chance, discover a positive correlation between large ears and high rates of growth in GDP. Should one consequently conclude that having large ears stimulates the economy? This is evidently a paradox. What is missing is the scientific logic underlying the question. Nonetheless, econometrics could prove that such a correlation exists and produce a theory, which is 'exact' in formal terms but blatantly false from the point of view of logic. And this also helps eliminate the misconception that what can be proven mathematically is also true.

In complex phenomena, fundamental data are often not measurable. If our analysis were to refer only to measurable entities, we would be obliged to restrict the field of investigation to a great extent. It is consequently the case today in our science that those who believe they have a truly scientific approach because they do nothing other than correlate and correlate series and series of data in the search for functional relationships, actually produce theories which are extremely limited and most unlikely to say anything useful about reality[177]. In this context, the relationship between aggregate demand and overall employment seems to be demonstrated by quantitative evidence, but this correlation can be rejected because it is false[178].

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[174] Hayek (1974).

[175] Hayek (1974, p. 30) bitterly acknowledges, with reference to economists, that «as a profession we have made a mess of things».

[176] Hayek (1974, pp. 31-32).

[177] Hayek (1974, p. 42): «I still doubt whether their search for measurable magnitudes has made significant contributions to our theoretical understanding of economic phenomena – as distinct from their value as a description of particular situations. Nor am I prepared to accept the excuse that this branch of research is still very young: Sir William Petty, the founder of econometrics, was after all a somewhat senior colleague of Sir Isaac Newton in the Royal Society!».

[178] Hayek (1974, pp. 33-34).

Instead, we can use a series of *qualitative* data to demonstrate how widespread unemployment cannot be 'cured' by inflationary policies and that it is due to «discrepancies between the distribution of demand among the different goods and services and the allocation of labour and other resources among the production of those outputs»[179] . Yet this is what we saw in the previous chapter and inasmuch there is no need repeat these considerations.

Consequently, ignorance of true economic science and the presumption that science can only be based on measurable quantities has culminated in producing massive damage in the real world. The presumption of providing exact requirements in time and space, of being able to determine the level of employment exactly starting from planned fixing of aggregate demand, has created a «very extensive misallocation of resources which is likely to make later large-scale unemployment inevitable»[180].

The Hayekian method does not allow exact forecasts predictions and 'provable' cures. Nevertheless, it helps explain the phenomenon of unemployment and a general reading of the effects of inflationary policies on the production system and employment itself.

> But the effects on policy of the more ambitious constructions have not been very fortunate and I confess that I prefer true but imperfect knowledge, even if it leaves much indetermined and unpredictable, to a pretense of exact knowledge that is likely to be false[181].

Yet what are the long term consequences of the pretextual science of those economists who intend to act only by means of measurability? There are certainly erroneous expectations by and about economic scientists. One cannot expect the economy to produce forecasts based on the model of natural sciences. The insistence on the 'scientific' method may generate faulty expectations, manipulation and trust in very dangerous social engineering plans. This is the most serious consequence. If the economy is like physics, then why not rely on economists as apprentice sorcerers who, using exact formulas, can generate social welfare, cancel unemployment and distribute wealth equitably? All attempts to do so have led to the construction of earthly hells rather than paradises[182].

Today it seems that economic theory in all this is merely a pretext and used to determine even more social control, with the excuse of thinking higher interests or a notorious common good. Yet the

> welfare of a people, like the happiness of a man, depends on a great many things that can be provided in an infinite variety of combinations. It cannot be adequately expressed as a single end, but only as a hierarchy of ends, a comprehensive scale of values in which every need of every person is given its place. To direct all our activities according to a single plan presupposes that every one of our needs is given its rank in an order of values which must be complete enough to make it possible to decide between all the different courses between which the planner has to choose. It presupposes, in short, the existence of a complete ethical code in which all the different human values are allotted their due place[183].

Yet the problem is that such a comprehensive code of ethics able to organise society in hierarchical terms in accordance with a precise scale of purposes and values, cannot exist and be defined. In particular, cannot be defined by way of imposition. The most one can expect is the shared agreement to define a framework of common rules. For the rest, individuals must be free to act in order to implement their plans. Every top-down attempt at social engineering will mutate into violence.

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[179] Hayek (1974, p. 34).
[180] Hayek (1974, p. 44).
[181] Hayek (1974, pp. 43-44).
[182] Writes Hölderlin, quoted in Hayek (1944, p. 24): «What has always made the state a hell on earth has been precisely that man has tried to make it his heaven».
[183] Hayek (1944, p. 60).

As we have seen so far, serious analysis of planning cannot but lead to the conclusion that, in order to be implemented, it has to be conducted through more or less accentuated forms of dictatorship[184]. The freedom that planners promise is nothing more than freedom from the responsibility of deciding for oneself, freedom from action and from decisions with all the weight of personal responsibility that it entails[185]. The desire for presumed equality and an easy life can destroy the longing for liberty, because true freedom always implies responsibility.

A society can only grow, on the contrary, through free individual action. Economists should be servants of that principle and not slaves of artificial systems of ideas[186], which often become the justification for erroneous policies, 'scientists' whose only goal is to restrict freedom by ever increasing degrees. The main point for a social scientist is to acknowledge that planning cannot be implemented, unless the intended goal is collective suffering.

> The recognition of the insuperable limits to his knowledge ought indeed to teach the student of society a lesson of humility which should guard him against becoming an accomplice in men's fatal striving to control society – a striving which makes him not only a tyrant over his fellows, but which may well make him the destroyer of a civilization which no brain has designed but which has grown from the free efforts of millions of individuals[187].

[184] Hayek (1944, pp. 91-92).
[185] Hayek (1944, p. 95).
[186] Hayek (1992, pp. 53-54): «One's initial surprise at finding that intelligent people tend to be socialists diminishes when one realises that, of course, intelligent people will tend to overvalue intelligence, and to suppose that we must owe all the advantages and opportunities that our civilisation offers to deliberate design rather than to following traditional rules, and likewise to suppose that we can, by exercising our reason, eliminate any remaining undesirable features by still more intelligent reflection, and still more appropriate design and 'rational coordination' or our undertakings. This leads one to be favourably disposed to the central economic planning and control that lie at the heart of socialism».
[187] Hayek (1974, pp. 55-56).

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