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Sylos Labini's Unpublished Notes on Schumpeter's *Business Cycles*

Carmelo Ferlito

ABSTRACT: Paolo Sylos Labini (1920–2005) was the one of the most influential economists in Italy after the Second World War. After graduating in 1942, Sylos Labini won a fellowship in the USA. After an initial period in Chicago, he moved to Harvard, where he was able to attend Schumpeter's lectures from 1948 to 1950. During this period, Sylos Labini read Schumpeter's *Business Cycles* and decided to write down his impressions before giving them to his former professor in February 1949, who discussed them over a couple of lessons. These notes are still unpublished, and Sylos gave me a copy at our first meeting (2002), saying that it was time to publish them. This paper discusses the content of the unpublished notes, focusing on the critical aspects of Schumpeter's business cycle theory to which Labini draws attention. In the last section, I present Sylos Labini's business cycle theory, an interesting mix of Schumpeterian, Keynesian and Marxian elements.

KEYWORDS: Sylos Labini, Joseph Schumpeter, business cycles

JEL CLASSIFICATION: B25, B31, E32

Dr. Carmelo Ferlito (carmelo.ferlito@gmail.com) is an independent economic journalist and writer in Verona, Italy.

I. THE YOUNG SYLOS LABINI AND SCHUMPETER AT HARVARD

Paolo Sylos Labini was born in Rome on October 30, 1920, and died on December 7, 2005. After graduating in 1942, Sylos Labini won a fellowship in the USA. After initially living in Chicago, he moved to Harvard, where he was able to attend Schumpeter's lectures from 1948 to 1950.[1] Sylos reported that not only was he strongly influenced by Schumpeter's work,[2] but that he was also highly impressed by his personality. The Italian observed that Schumpeter was a genius and, like all geniuses, intimately lonely, with a dramatic personality.

I first met Sylos Labini on December 3, 2002, when I went to Rome to discuss my thesis with him on the intellectual heritage of Schumpeter in Sylos Labini's work. During this first meeting, I learned more about how Sylos' passion for economics and for the concept of *innovation* had developed.

In fact, the Italian economist's first true passion was innovations. After graduating, the young Sylos Labini wanted to study engineering, in order to become an inventor. But there was war, and Sylos' father thought this branch of study too long and expensive. So Paolo decided to enroll in the law program, which would be cheaper and shorter. But he had no passion for studying law, and dedicated his spare time to studying mathematics and economics.

When the time came to choose the subject of his thesis, Sylos Labini decided to work on innovation, under the guidance of Professor Papi.[3] In his research, the young scholar was astonished to find so little literature in a period of such great innovation. He found that the only important work on this subject was Schumpeter

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[1] When the 75-year-old Taussig retired in 1935, Schumpeter took over the famous economic theory class for postgraduates.

[2] "I studied at Harvard with Schumpeter, in 1949, just a while before his death, being affected--hoping in the right way--by him. Therefore my vision on innovations is not simply economic, but social too." Sylos Labini (1989, p. 31) (trans. Carmelo Ferlito).

[3] The thesis title is "Gli effetti economici delle invenzioni sulla organizzazione industriale."

(1911).[4] This was the first scientific contact between Sylos Labini and the Austrian economist.

While he was at Harvard, Sylos Labini read Schumpeter (1939b)[5] and decided to write down his impressions before giving them to his former professor (February 1949), who discussed them over a couple of lessons. These notes are still unpublished, and Sylos gave me a copy at our first meeting, saying that it was time to publish them. He spoke about these notes in Roncaglia (1988, pp. 135–139).

The first part of this paper comments on the connections between the economic works of the authors. In particular, their perspectives on market theory and interest theory are analyzed.

The content of the unpublished notes is then briefly discussed, focusing on the critical aspects of Schumpeter's business cycle theory to which Sylos draws attention.

The last section presents Sylos Labini's business cycle theory, an interesting mix of Schumpeterian, Keynesian and Marxian elements.

The unedited notes appear in an appendix.

II. SCHUMPETER AND SYLOS LABINI: NOTES ON A SCIENTIFIC RELATIONSHIP

The link between Schumpeter and Sylos Labini is immediately evident upon reading their major books. Sylos may be considered the only Italian economist to have used a general Schumpeterian approach to economics, albeit in his own way. In particular, Sylos Labini's thought can be seen as an original mixture of Marxian, Schumpeterian and Keynesian elements. The comparison between Marx and Schumpeter was very important for Sylos Labini,[6] and many other Italian economists have stressed this

[4] At the beginning of the 1940s this book had only been partially translated into Italian, edited by Giovanni Demaria. See Demaria (1932). The first complete Italian translation was published in 1971.

[5] Losing many diopters, he told me.

[6] See Sylos Labini (1954).

point.[7] We should here briefly recall that Sylos, like Schumpeter and Marx, was convinced that capitalism would be substituted by socialism.[8] But there are many other points of contact between the two economists.

First, in some ways, Sylos Labini starts where Schumpeter ends. Schumpeter (1942), the last economic text written by the Austrian, deals with the life of the capitalist system during its last phase, in which oligopolistic firms rule the scene. Sylos Labini (1956), the Italian's first important book, tackles the same problem, admitting that the oligopolistic system is the new face of capitalism.[9] But the link between Schumpeter and Sylos becomes more evident when reading that this birth of the oligopolistic system within capitalism is no accident, but a natural evolution of reality, caused by the mechanisms of innovation and competition (in Schumpeterian terms).[10]

Related to this is the central role of innovation and technology.[11] In Schumpeter's opinion, the innovative process dies out with "trustified" capitalism, while Sylos Labini states rather that big firms, and public firms too, can play an important role in stimulating the innovative process through large investments in research and development.[12] Moreover, Sylos Labini emphasizes the new life

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[7] See, in particular, Vitello (1965), Egidi (1981), Tronti (1983), Salvati (1983), Messori (1983), Gattei (1984), Bellofiore (1984), Zagari (1986). For a general perspective of Sylos Labini's thought on Marx see Sylos Labini (1994).

[8] Sylos Labini (1984a, p. 53 of the Italian edition).

[9] Lachmann (1954, p. 134), states that one of the three major events we see in the field of economic thought in the 1933–53 period is "the evolution of various theories of mixed market forms, like monopolitistic and imperfect competition." And he adds (p. 137) that "the most interesting problems in the theory of mixed market forms arise in connection with the question of whether, to what extent, and, if at all, in what sequence the various market forms can be said to succeed each other in time. In this context the 'inevitability of monopoly,' or perhaps oligopoly, calls for particular attention."

[10] Sylos Labini (1956, pp. 2–3, 8–9, 11–12).

[11] "Technological innovations are not simply an important aid for economic development process: in the long run they are even a necessary condition of such a process." Sylos Labini (1992, p. 5) (trans. Carmelo Ferlito).

[12] Sylos Labini (1956, pp. 35–36 and 146–147) and Sylos Labini (1990, pp. 447–449).

that small firms can experience in the shadow of big ones, helping and cooperating with them.[13]

Another point regards the interest rate. Before meeting Schumpeter, Sylos Labini tried to build up a dynamic theory of interest (in Sylos Labini [1948]).[14] The same attempt can be found in Schumpeter (1908, pp. 332–346), Schumpeter (1911, pp. 173–223) and Schumpeter (1939a, pp. 152–159). Schumpeter does not agree with Böhm-Bawerk's concept of interest as a measure of temporal preference. He associates interest with innovation, profit and creation of credit by banks.[15] Sylos Labini's vision is very similar: he speaks of interest as a "tax" which entrepreneurs pay banks for supplying the capital, necessary for the innovative process.[16] Moreover, Sylos states that money is *created* by banks, agreeing entirely with Schumpeter's view on the matter.[17] In a phone call to me on April 22, 2003, Sylos stressed how close he was to Schumpeter even before meeting him. When at Harvard, Sylos presented this paper to the Austrian, Schumpeter was very enthusiastic, finding it an exact demonstration of his interest theory.[18] Schumpeter did his best to get the paper published in the *Quarterly Journal of Economics*, but died before he could do so. Sylos Labini, considering himself too young to knock on the door of such an important publication,[19] refrained from any such attempt.

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[13] Sylos Labini (1993a, pp. 224–227).

[14] Sylos Labini suggested we read this old paper. He took up the arguments of the article in Sylos Labini (1998b) and Sylos Labini (2003).

[15] Schumpeter (1911, pp. 173–175).

[16] Sylos Labini (1948, pp. 428–429).

[17] Sylos Labini (1992, p. 25).

[18] Schumpeter's unaccomplished dream was to write a brilliant book on interest and money. His monetary treatise was published after he died, but it cannot be considered a masterpiece. See Schumpeter (1970) and Schumpeter (1996). When he was at Harvard, Sylos Labini asked to Schumpeter about his book on monetary theory and when he would finish it, but Schumpeter answered, "My friend, I guess I'll finish it in heaven, with the help of celestial cherubs; or perhaps, as it is more probable, in hell, with the imps, led by Barbariccia."

[19] For a complete explanation of Sylos Labini's thought on relations between money, credit, interest and economic development, see Sylos Labini (1992, pp. 17–27).

Another important aspect of this link is economic theory and the role of history. From this point of view too, a number of connections between the two authors can be found. Specifically, both Schumpeter and Sylos Labini stress the link between theory and history. Schumpeter's passion for history is renowned, particularly if one considers the "old" Schumpeter.[20] Thanks to his *History*, Schumpeter reaches his full methodological growth,[21] clearly defining the tools an economist must use for his work. According to the Austrian, the *scientific* economist can be identified by his mastery of approaches, relating to three specific groups that together serve as the foundation of economic analysis: history, statistics, and theory.[22] He then adds that, were he forced to choose among one of the three approaches, he would doubtless opt for history.[23] Actually, as it appears in his *Cycles*, he had already lingered on the combination history / statistics as a focal point, outlining his predilection for economic history; this step would be then completed by his *History*. In Schumpeter's opinion, history in general (social, political, cultural), economic history, and history of industry are essential in understanding all problems. All other methods, the statistical and theoretical ones, must be subordinated to historical understanding. Schumpeter even considers them useless, if outside the field of history.[24] In his *Business Cycles*, we read that the historical approach to the business cycles issue is so fundamental that

> the ultimate goal is simply a reasoned (= conceptually clarified) history, not of crises only, nor of cycles or waves, but of the economic process in all its aspects and bearing to which theory merely supplies some tools and schemata, and statistics merely part of the material.[25]

Schumpeter (1939a, p. 237) adds that such historical analysis, with the purpose of understanding the cyclic trend as characteristic

[20] Schumpeter (1954, pp. 15–30). See also De Vecchi (2002).

[21] Schumpeter (1954, pp. 15–30).

[22] *Ibid.*, pp. 15–16.

[23] *Ibid.*, p. 16.

[24] Schumpeter (1939a, pp. 53–54).

[25] Schumpeter (1939b, p. 220).

of the capitalist progress, must at least consider the last 250 years. Therefore, Schumpeter means to show the capitalist period as a whole economic process shaped by history, following the example of what Spiethoff meant by *wirtschaftstil*. This idea is a synthesis of the *methodenstreit*. According to the last representative of the German Historical School, an economic analysis can be achieved, but it must refer to a clear-cut historical and economic period, marked by distinctive elements, allowing the identification of a specific "economic style." Capitalism is one of these styles, marked by cyclic trend; Schumpeter wants to focus on capitalism with the aid of historical research. This is what Schumpeter meant by the creation of an economic theory shaped by history.

Sylos stated that every theory is historically conditioned. Math is a useful instrument, but every starting point has to be connected with historical reality.[26] Moreover, like Schumpeter, Sylos believed that an effective theory had to be a dynamic one. And a dynamic theory is compatible with historical analysis.[27]

In a later text, Sylos (2005, p. 182) stated that when elaborating an economic theory, he would think about a method using historically conditioned models. In the same way as Marx, Sylos (2005, pp. 182–183) stressed that the business cycle is clearly historically conditioned. It could be interesting to compare this approach to the methodological view presented by Werner Sombart[28] and Arthur Spiethoff.[29]

First of all, Sylos explains that in any science, a proposition can be interpreted only if it is, at the same time, logically correct and somehow relevant. That is to say, connected to reality.[30] We recall here the modern formal models. Sylos notes that it may appear that, since economics is a social science, an historical approach is to be preferred to a mathematical one. However, he warns us, this is not the case, for mathematics and history do not have to be considered antithetical. Of course the requirements for the

[26] Sylos Labini (1992, pp. VI–XII) and Sylos Labini (2005, p. 189).

[27] Sylos Labini (1992, pp. VI–VIII). See also Sylos Labini (2002, pp. 69–70).

[28] See Sombart (1929).

[29] See Spiethoff (1952, 1953, 1970), and the first part of Spiethoff (1925).

[30] Sylos Labini (1992, p. VII).

research must be found within historical reality, but mathematics can turn out to be a useful reinforcement tool. There must be interaction between theoretical analysis and empirical research. What he criticizes is the mere creation of formal models produced without a connection to reality.[31] We may now think there are some differences with Schumpeter's methodology, considering that the Austrian economist always promoted the use of mathematics and econometrics, practically being obsessed by them. However, we also know that Schumpeter never actually used mathematics to create his models, thus favoring a wider approach so as to unite a wide sociological and historical vision with the rigors of economic analysis. The faith Schumpeter had in mathematics was more of a theoretical than an actual kind.

Moreover, Sylos can only see the analysis as dynamic, opposing the static neoclassical approach prevailing in his time. A dynamic analysis can be seen in agreement with an historical analysis.[32] Therefore, within economic analysis, all steps must be taken in reference to a specific social reality and the results so obtained *must* refer to it, with no demand that the time period be extended.[33] Such an approach leads Sylos to consider cultural and economical phenomena as interdependent, with no dominance of facts of the one kind over facts of the other kind, as happens with the Marxist theory.[34]

There is a last aspect of the connection that should be pointed out, which shows a great difference between the two economists. Sylos Labini was normative in his economics. We cannot say the same in regard to Schumpeter. We have already emphasized Schumpeter's desire to keep from passing any judgment, whether a positive or a negative one, each time he evaluates a scenario. Reading *Capitalism, Socialism and Democracy*, we seem to find a "worried" Schumpeter; despite his trying to be unbiased, he cannot hide his gloominess caused by the disappearance of the system whose main character, the businessman, he had described in apologetic terms. The situation is different for Sylos. We can see how dedicated he

[31] *Ibid.*

[32] *Ibid.* and Sylos Labini (2002, pp. 69–70).

[33] Sylos Labini (1989, p. 99) and Sylos Labini (1993a, pp. 124–125).

[34] Forcellini (1983, p. 54) and Sylos Labini (1984a, pp. 37 and 89).

was, above all late in his life, to fighting political and social fights. This kind of commitment is very different from Schumpeter's ministerial involvement. Whereas Schumpeter aimed at value-free scientific considerations, the Italian economist tended to relate economic thought to socio-political preferences. For instance, Sylos assesses the development process as good, while underlining the risks embedded in it.[35] Whereas Schumpeter sees the economic theorist as a "narrator" of reality as it is, without judging what he is researching, Sylos' opinion is that the economist, while analyzing the different situations, must consider all the effects deriving from the description of such situations.

The last point pertains to business cycles: both Schumpeter and Sylos believed that the cycle is the real form of economic development in a capitalistic system. Capitalistic development and business cycles are inseparable.[36] This point brings us to the main focus of the paper, but we will leave a detailed analysis of Sylos' business cycle theory, as related to Schumpeter's thought, to the fourth section.

III. COMMENTS ON SYLOS LABINI'S UNPUBLISHED NOTES

1. Schumpeter's Business Cycles: a Summary

We shall now discuss the contents of the comments Labini wrote on Schumpeter's *Business Cycles* point by point. First, it is necessary to briefly summarize Schumpeter's cycle theory.

According to Schumpeter, the wave motion (cycle) is the pattern taken on by economic development under capitalism. But assuming we start from a system in static equilibrium, what sets the cycle in motion? Schumpeter identifies certain causes that can be found both inside and outside the economic system; the economist cannot observe or analyze the external causes (wars, earthquakes, etc.), while the internal causes are typically economic factors and may

[35] Sylos Labini (1954, pp. 12–14) and Sylos Labini (1984a, pp. 37 and 89).

[36] This is a transverse position, which, from Marx, touches many economic schools. We have to think, i.e., about the position of Spiethoff (1925), Schumpeter (1939a) and Lachmann (1956, pp. 110–112).

thus be examined by the economic scientist.[37] Schumpeter makes three key "approximations" in his business cycle theory.

First, we assume a perfect static balance, where the conditions of perfect competition are valid, where the population is steady, where there are no savings, and we have all the requirements for the circular flow[38] (Schumpeter calls such a balanced situation a "theoretical norm").[39] We also assume that, in the model of a capitalist society, there is always the possibility of new combinations of the factors of production, and that people are able to and ready to carry them out (motivated by the prospect of profit).

> Some people, then, conceive and work out with varying promptness plans of innovations associated with varying (and ideally correct) anticipations of profits, and set about struggling with the obstacles incident to doing a new unfamiliar thing [...] Conforming to previous considerations, we suppose that he founds a new firm, constructs a new plant, and orders new equipment from existing firms. The requisite funds—his entrance ticket to the social store of means of production—he borrows from a bank. On the balance acquired by so doing he draws, either in order to hand the checks to other people who furnish him with goods and services, or in order to get currency with which to pay for these supplies. Under our assumptions he withdraws, by his bids for producers' goods, the quantities of them he needs from the uses which they served before. Then other entrepreneurs follow, after them still others in increasing number, in the path of innovation, which becomes progressively smoothed for successors by accumulating experience and vanishing obstacles.[40]

What can we see from the explication of the above? First of all, Schumpeter assumes that businessmen spend their funds right away, with the exception of a minimal stock. Second of all, without unused resources (due to the hypothesis of the circular flow), the prices of the factors of production will rise, and monetary incomes and interest rates will behave the same way. Thirdly, incomes will also increase, in correspondence to the entrepreneurs' expenses in investment goods. Workers' expenses will rise as well, as long as

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[37] Schumpeter (1939a, pp. 96–97).

[38] *Ibid.*, p. 161.

[39] *Ibid.*, pp. 62–70.

[40] Schumpeter (1939b, pp. 130–131).

they receive a higher salary and in correspondence to the expenses of those people receiving all of these increased payments.[41] Nevertheless, so far, we can suppose there has not been any increase in production yet.[42] This is what happens until the first entrepreneur's system starts working.[43]

> Then the scene begins to change and a new business situation emerges, characteristically differing from the one we glanced at, but not less easy to understand. The new commodities—let us say, new consumers' goods—flow into the market. They are, since everything turns out according to expectation, readily taken up at exactly those prices at which the entrepreneur expected to sell them. […] A stream of receipts will hence flow into the entrepreneur's account, at a rate sufficient to repay during the lifetime of the plant and equipment originally acquired, the total debt incurred plus interest, and to leave a profit for the entrepreneur. […T]he new firms, getting successively into working order and throwing their products into the market of consumers' goods, increase the total output of consumers' goods which had been previously reduced.[44]

Such new goods, in Schumpeter's opinion, enter the market at too fast a pace to be absorbed with no shocks. In particular, the old companies, the chasers, face different scenarios, which do not follow a predetermined rule. Some get into new scenarios. Some others die, not being able to fit in. Still others still look for a new purpose.[45] Nevertheless, even the driving company's competitive lead tends to decrease. As the products enter the market and the importance of debt repayment rises, entrepreneurial activity diminishes to the point of finally disappearing.[46] As soon as the entrepreneurial expansion stops, moving the system away from its balanced position, the system itself struggles again towards a new equilibrium. We now start seeing the first outline of a cyclic scheme.[47]

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[41] Schumpeter (1939a, p. 161).

[42] *Ibid.*,p. 163.

[43] *Ibid.*

[44] *Ibid.*, p. 133.

[45] Schumpeter (1939a, p. 165).

[46] *Ibid.*, p. 166.

[47] *Ibid.*, p. 170.

When we look at the skeleton, we behold the picture of a distinct process in time that displays functional relations between its constituent parts and is logically self-contained. This process of economic change or evolution, moreover, goes on in units separated from each other by neighborhoods of equilibrium. Each of those units, in turn, consists of two distinct phases, during the first of which the system, under the impulse of entrepreneurial activity, draws away from an equilibrium position, and during the second of which it draws toward another equilibrium position.

Each of those two phases is characterized by a definite succession of phenomena. The readers need only recall what they are in order to make the discovery that they are precisely the phenomena which he associates with "prosperity" and "recession": our model reproduces, by its mere working, that very sequence of events which *we observe in the course of those fluctuations in economic life, which have come to be called business cycles* and which, translated into the language of diagrams, present the picture of an undulating or wavelike movement in absolute figures or rates of change.[48]

We can observe the following from Schumpeter at this point:

1. Progress makes the economic mechanism unstable and makes it move in a cyclic trend.[49]
2. Prosperity moves away from balance, while recession is a rapprochement. This appears to be far from the usual meanings.[50]
3. Nothing in the theory gives any indication that cycles will be regular. The duration mostly depends on the potency of innovation, therefore the cyclic process is structurally irregular.[51]

Herein is the reasoning leading us to the analysis of the second approximation cycle. If innovations are embedded in new plants and facilities, the expenses for consumer goods will rise as fast as the expenses for investment goods. They will both expand starting from those points in the system where they had previously

[48] Schumpeter (1939b, p. 138).

[49] Schumpeter (1939a, p. 170).

[50] *Ibid.*, p. 174.

[51] *Ibid.*, p. 175.

generated an impact, and they will create that set of economic situations that we call prosperity. Hence we note two phenomena. Firstly, the old companies will react to this situation, and secondly, many of them will "speculate." Those willing to take advantage of the situation will act assuming that the observed change must carry on forever; such conduct will anticipate prosperity, thus creating a *boom*.[52] This way, credit will not be simply an investors' prerogative, and deposits will be created to fund the general expansion. Every loan generates another, so that a series of price increases will begin. At this stage, we see transactions becoming possible just with an increase in prices, whether actual or expected. We now have, in the cyclic process, the introduction of a secondary wave, whose effects overlap those of the primary wave.[53] The consequences of the secondary wave are even more noticeable than the first one, as observing a growing fire is easier than observing the match lighting it. Due to this difficulty, we often identify speculation as the cause of the cycle, while the innovation causing speculation is disregarded because it is harder to single out.[54]

Even in the secondary expansion, the end comes from a turning point of the process. Any state of prosperity entails a period of failures, which, besides eliminating obsolete companies not capable of readjustment, also determines a painful process of readjustment in prices, quantities and values, as the new equilibrium emerges.[55] In the secondary prosperity, risky, deceitful, or unlucky enterprises also take shape, and they will not withstand a recession. The speculative position implies a lot of unsustainable elements, which will collapse after the slightest deterioration in value of the other collateral elements. Therefore, a large proportion of the current business investments will suffer a loss as soon as prices fall, and they will indeed fall, due to the primary process. A part of the debt structure will also collapse. If, in this case, panic and crisis ensue, further adjustments will be necessary: values fall and every decline induces the following decline. For some time,

[52] *Ibid.*, p. 177.

[53] *Ibid.*, p. 178.

[54] *Ibid.*

[55] *Ibid.*, p. 180.

the pessimistic expectation will play a critical part, but it must be endorsed by objective elements, otherwise it will not last.[56]

Now we see the outline of a four-phase cyclic scheme (recalling that in the first approximation we only had prosperity and recession): prosperity, recession, depression, recovery:

> Now that class of facts [*the secondary wave*], whenever it is of sufficient quantitative significance, has an important bearing upon our schema. As long as we took no account of it, we had only two phases—Prosperity and Recession—in every unit of the cyclical process, but now we shall understand that under pressure of the breakdown of the secondary wave and of the bearish anticipation which will be induced by it, our process will generally, although not necessarily, outrun (as a rule, also miss) the neighborhood of equilibrium toward which it was heading and enter upon a new phase, absent in our first approximation, which will be characterized by what we shall refer to as Abnormal Liquidation, that is to say, by a downward revision of values and a shrinkage of operations that reduce them, often quite erratically, below their equilibrium amounts. While in recession a mechanism is at work to draw the system toward equilibrium, new disequilibrium develops now: the system again draws away from a neighborhood of equilibrium as it did during prosperity, but under the influence of a different impulse. For this phase we shall reserve the term of Depression. But when depression has run its course, the system starts to feel its way back to a new neighborhood of equilibrium. This constitutes our fourth phase. We will call it Recovery or Revival.[57]

Dropping the hypothesis that the examined innovation is the first one in history, we must conclude that every observable and historically placed cyclic phase brings with it the effects of the previous cycles, and will influence the following phases. We must also understand that perfect competition is not a frequent phenomenon within the ordinary cyclic trend. Instead, the entrepreneurial push is based on a world in which imperfect competition reigns. Innovation itself changes the market, creating for the innovator a competitive advantage that forces the others to adjust. In the first phase, the costs saved by the innovator allow him price-searching status that is not seen under the conditions of perfect competition. According to Schumpeter, the only real competition is the one

[56] *Ibid.*, p. 181.

[57] Schumpeter (1939b, p. 149).

established between the emerging new and the old struggling to survive. This competition is to neoclassical perfect competition (a mass of identical companies producing homogeneous goods) what a bombing is to the pressure necessary to break open a door.[58]

The third approximation originates from Schumpeter's argument that innovations are the source of cyclic flows. Thinking them as a consistent wave motion is impossible, because the periods of gestation and effects absorbed by the economic system are not the same for all innovations undertaken at any given time.[59] Therefore Schumpeter sees three simultaneous wave motions, alternating within the capitalistic dynamic. This does not mean we won't be able to find others, such as Kondratieff, Juglar and Kitchin cycles. The Kondratieff cycle is completed in 50–60 years, the Juglar cycle in 7–10 years, and the Kitchin cycle in 2–3 years.[60]

In his *Economic Cycles*, Schumpeter thoroughly analyzes some Kondratieff cycles he detected (incidentally showing his vast knowledge of economic history):

a. 1786–1842: First Kondratieff cycle, connected to the growing use of hydro power for industrial purposes[61]

b. 1843–97: Second Kondratieff cycle, connected to railway growth[62]

c. 1898–1913: Third Kondratieff cycle, connected to electrification.[63] (This study stops in 1913 due to wartime.)

Now that Schumpeter's economic cycle theory has been summarized, Sylos Labini's ideas can be properly introduced.

2. Types of Innovations, Growth and Evolution

First of all, Sylos considers one of the types Schumpeter indicates as *innovations*: the opening up of new sources of supply and that

[58] *Cf.* Schumpeter (1942).

[59] Schumpeter (1939a, pp. 195–196).

[60] *Ibid.*, pp. 197–198.

[61] *Ibid.*, pp. 237–261.

[62] *Ibid.*, pp. 263-312.

[63] *Ibid.*, pp. 312–345.

of new markets. According to Sylos, it is not true that the opening up of new sources of supply *always* implies a new production function; we can imagine the opening up of new lands with the same degree of fertility as the already cultivated ones. In this case we would not have a new production function and no innovation would occur. Moreover, the Italian economist admits (Schumpeter perhaps not) that firms could increase production volume with the same technical coefficients, without varying the production function. As Sylos explained later,[64] it is misleading to associate the concept of innovation with the introduction of a new production function and, in his opinion; this sentence was just a form of verbal obeisance paid to neoclassical language by Schumpeter. In any case, continues Sylos, the concept of innovation is linked to that of a new production function and the production function is linked to the introduction of a new technical method.

The next point is particularly important. Schumpeter is known to distinguish between *growth* and *evolution* (or *development*), the latter entailing innovation. According to Schumpeter, in the circular flow, growth alone exists but not evolution. Sylos agrees with the fact that growth by itself is incapable of generating the business cycle, but, as regards the opposition of the two terms, he is, maybe, more Schumpeterian than Schumpeter: in Sylos' opinion, growth without evolution (or innovation) is inadmissible. He writes, "'Growth' is conceivable without innovation only in the (exceptional) case of opening up of new lands with the same degree of fertility than the cultivated ones and with which it is possible to produce with the same coefficients." This is because of the law of diminishing returns of land (in the Ricardian sense) and the scarcity of natural resources. So, if we want to expand production at constant average costs, innovations are necessary. Sylos took up this concept in his subsequent books. For example, in Sylos (1956, pp. 132–33), we read,

> But the other kind of investment, which associated with a change in technical coefficients, is of primary importance—so much that it is the determining factor of economic development. Unless the technical coefficients change, economic development cannot go on indefinitely, if only because of the direct or indirect effects of the diminishing returns of land;

[64] See Roncaglia (1988, p. 137).

> the overall rate of increase in production would be bound to diminish and, in the long run, would tend toward zero. Development can go on indefinitely only if technical coefficients change not merely occasionally but systematically, that is, as a result of a series of innovating investment. Such investment consists primarily of new and improved machines, which have the effect of lowering the labor coefficient and which, for this reason, may well generate technological unemployment.

And in Sylos (1984a, 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.[65]

Sylos suggests that those innovations which do not entail the construction of new plant requiring a great amount of time and outlay (the ones which Schumpeter does not consider) could also be included in the analysis of *growth*.

Moreover, Sylos classifies innovations from the money cost perspective. He distinguishes between innovations "that allow to expand [sic] production at constant average costs and innovations that bring about a diminution of average costs." In Sylos' opinion, only the second type of innovations could give rise to the competition-reducing process, and thereby to the cycle.

A crucial criticism is connected with the concept of *credit creation* in an economy with growth and without development. Sylos, stating that in this case credit creation does not imply inflation, adds that perhaps in such a system credit creation is not conceivable. In fact, credit creation is based on the payment of interest, but the latter arises from profit opportunities that are not conceivable without innovation, and thus development. So, to sum up, admitting the existence of credit expansion is not possible when opportunities of profit and innovation are not present. This means that the possibility of a non-inflationary credit expansion is self-contradictory. In this coherent analysis Sylos is close to

[65] See also Sylos Labini (1981, p. 41) and Sylos Labini (1989, p. 32).

Mises's thought. However, that thinking appears to have faded in Sylos' later work. In Sylos (1992, p. 25) we find a change in his course; Sylos even states that the creation of credit can be used in an anti-inflationary mode. He claims that there may be a productive expansion with steady prices if, when the product flow rises, a proportional monetary means flow rises also. The creation of credit finds its basis in increased production, which forms some kind of alternative counterbalance to the increased savings.[66] Here the relationship among savings, credit and economic expansion is diametrically opposed to the Austrian paradigm.

3. Decline of Capitalism

We may further consider the relationship between the upswing phase of the cycle and general welfare. Sylos says that the arguments made by Schumpeter suggest the existence of an inverse relationship between the two, and he seems a little skeptical on this point. Two other doubts relate to social problems. According to Schumpeter, democracy works better in periods of declining prices; Sylos states that there may be some consequences. In fact, during a period of declining prices, capitalists might attempt to maintain their income levels through monopolistic barriers, while, for the same reasons, workers would try to preserve their wage levels by fighting against wage cuts. Thus, we might observe, during a phase of declining prices, an increase in social struggles.

According to Sylos, this matter is related to the decline of capitalism. It seems that Sylos, in his questions, agrees with Schumpeter, when the Austrian states that "capitalism produces by its mere working a social atmosphere... that is hostile to it, and this atmosphere, in turn, produces policies which do not allow it to function."[67] Sylos makes two points that would seem to confirm this. The dynamics of capitalism breeds a trend of unemployment during the depression, but the power of working classes and workers' unions is increasing in capitalist countries, so, during depressions, these two facts could lead to the generation of anti-capitalistic economic policies, bringing about structural changes

[66] Sylos Labini (1992, p. 26).

[67] See Appendix, I.3.

in the system. Still there is a great difference between Sylos and Schumpeter's patterns. While the Italian focuses on strictly economic factors, connected to the genesis of depressions within the area of the economic cycle, Schumpeter's analysis has a wider quality, sociological, socio-historical, outside the spectrum of pristine economics. Such vision is not seen in his *Business Cycles*, but in *Capitalism, Socialism and Democracy*. *Capitalism, Socialism and Democracy*, written between 1938 and 1941, is undoubtedly his most famous effort. Although the first edition (1942) was only known to a small number of people, the second one (1947) was very successful. The text, opening with a multifaceted analysis of Marxist thinking,[68] revolves around two crucial questions: "Can capitalism survive?"[69] and, "Can socialism work?"[70] Schumpeter answers negatively to the first question, but he argues that the end of capitalism will be due to non-economic causes. In his opinion there is a hostile attitude within the bourgeois society when it comes to capitalism. This hostility is fomented by the increasing number of intellectuals, as basically all of them are against capitalism. According to Schumpeter, intellectuals are not a class themselves, but they like controlling other classes and explaining to workers what they should think. The analysis led Schumpeter to believe that demoralization was spreading within the capitalist society. Schumpeter saw a middle class lacking in vitality and resigned to defeat. The middle class was disenchanted and, in Schumpeter's opinion, this would to lead to the maturation of socialism. But the transformation would not necessarily be a short one: there could be a moment when capitalism would prove incapable of both dying and surviving.

In Schumpeter's mind the decline of capitalism is also connected to the decline of the *pure* entrepreneurial role, typical of capitalism's first phase, which portrayed the entrepreneur as a heroic figure mastering the scene. In his opinion, capitalism was changing, leaving greater room to big firms and state companies, which were unable to give capitalism the innovative push vital to its survival. Sylos took, over time, a different stand. First of all, he believed that

[68] Schumpeter (1942, pp. 3–56).

[69] *Ibid.*, pp. 59–169).

[70] *Ibid.*, pp. 173–227).

a virtuous cooperation between small and big companies could be established, on the basis of innovation.[71] In particular, he claimed we are in the presence of a mechanism of vertical integration; according to this mechanism, small companies create innovative processes, which will be continued and developed by research facilities of the big firms. The dynamic innovations of small companies create a virtuous competition and a stimulus for big firms. Therefore, Sylos began his analysis of the development of oligopolistic capitalism where Schumpeter had stopped. Though he did not agree with his master's pessimistic vision, he re-launched the centrality of the innovative process within a completely changed economic context.

4. Quantity of Money, Saving and Interest

Section II is the most important of the notes. Sylos stresses that in this section there are three crucial points.[72] The first is the concept of quantity of money. Schumpeter writes that it is impossible to speak of a quantity of money in the sense in which we speak of the quantity of a commodity, adding that the distinction between velocity and quantity may become blurred. Sylos agrees that we cannot strictly talk about quantity of money, as we talk of quantity referring to any other goods. But he wonders whether such an idea is useless from a scientific point of view. Sylos says that banks' reserves are not money and cannot be used as money, so we can distinguish between velocity and quantity. Answering Roncaglia in 1988[73] and talking to me in 2002, however, Sylos admitted that, as his studies had progressed, he had come closer to sharing Schumpeter's interpretation on this point. Sylos never elaborated, during the course of his career, on the idea of quantity of money, perhaps because he decided that it was pointless.

The second objection in section II concerns saving. In Sylos' opinion, we cannot deny the role of saving as Schumpeter does, at least during periods of crisis. Sylos refers, in particular, to saving accumulated by banks. It constitutes the banks' reserves and is

[71] Sylos Labini (1993b, pp. 269–274).

[72] Roncaglia (1988, p. 138).

[73] *Ibid.*

very important during crises. Accumulated saving is needed by banks to deal with bankruptcies and insolvencies, and represents an integration of the deflation process and liquidation. If banks' reserves are insufficient, the central bank has to tackle the crisis with injections of money, bringing about a price increase. Sylos adds[74] that this point is not a criticism of Schumpeter's theory, but an attempt to integrate it, explaining the case of a per capita income increase caused by rising prices.

Finally we reach the point that Sylos considers the most interesting[75] (II. 3). He starts by quoting Schumpeter, when he writes that the cheapness of money (a low interest rate) pushes the system towards mechanization. This is a typical neoclassical belief, which Schumpeter espouses in his 1939 book. Schumpeter (1939b, p. 123) defines the interest rate as a premium on present over future means of payment, or, as we will say, *a potiori* balances. He considers the interest phenomenon to be connected to innovation. As a matter of fact, given the previous assertion, for interest to be generated, it is necessary that someone place a higher value on current money than on future money. From where can this disparity originate? In capitalistic dynamic, as Schumpeter analyzed it, such a phenomenon can occur with an innovative effort by the entrepreneur who, if the interest rate is low, estimates that profits connected to the innovative process will be sufficient to supersede the interest monetary cost. Sylos, rather, says that lowering the interest rate must be an incentive to expand production, raising demand for all production factors, machines and labor. According to Schumpeter this is not admissible. What motivates the entrepreneur is not the possibility of increasing production, but the possibility of generating a profit. This can be done with innovation alone, often marked by mechanization. However, in private, Schumpeter, commenting on this point, told Sylos: "But then you reject an essential part of the traditional [neoclassical] theory!" Sylos, in Roman dialect and shrugging his shoulders, answered: "Ehn bè…? [And then?]" So Schumpeter simply said: "All right, all right." So the Austrian economist seemed to be aware of a weakness in his system. Besides,

[74] *Ibid.*

[75] *Ibid.*

a complete monetary analysis is the missing piece of Schumpeter's theoretical approach and also one major reason for friction with the other Austrian economists. We only need to remember how severely he criticizes the distinction between the actual interest rate and the natural interest rate, which can be typically found in the Wicksell-Mises-Hayek approach.[76] As Sylos told me, and Roncaglia before me,[77] Schumpeter in *The Theory of Economic Development* seems much closer to Sylos' thought on this point. Sylos states that the first attempt to break down this theory (the inverse relationship between the interest rate and mechanization) is to be found in Sraffa (1960) and the ensuing debate on capital theory.[78] His thoughts on this matter are later developed in Sylos (1988).

The last two points of section II are not so interesting, while section III is a list of bibliographical suggestions, which Schumpeter may not have appreciated, believing that Sylos wished to challenge his immense erudition.

IV. SYLOS' BUSINESS CYCLE THEORY

As mentioned previously, Sylos' business cycle theory was strongly influenced by Schumpeter. In particular, the Italian economist sees the capitalistic process as a relationship between innovation, development and the business cycle.[79] For this reason, studying this topic means explaining the cycle and development *at the same time*. Such explanation must be centered on the role of investments.[80]

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[76] Schumpeter (1939a, pp. 156–58).

[77] Roncaglia (1988, p. 139).

[78] *Ibid.*

[79] "In our time, therefore, the relationship between scientific progress and technological innovations is systematic: we have reached the point where our research and innovations have been institutionalized. Productive development continued, through accelerations and temporary downswings (crisis); in other words, development went on through cycles. Productive development, business cycles and technological innovations are three aspects of the same process: this is Schumpeter's perspective." Sylos Labini (1989, p. 20) (trans. Carmelo Ferlito). See also Sylos Labini (1993a, pp. 121–122) and Sylos Labini (1992, p. 16).

[80] "Thus, investments must be the essential element of such a process, because these must not only have an immediate multiplier effect on consumptions, but, when completed, also have the effect of increasing either productive capacity

Like Schumpeter, Sylos indicates several types of innovation that may generate business cycles: production of new goods, changes in production coefficients, and changes in the quality of products.

Sylos then mentions four stages of capitalistic evolution, close to the Schumpeterian idea of Kondratieff cycles.[81] But the Italian does not want to define them as cycles, preferring to associate them with the four industrial revolutions.[82] The first one was the English Industrial Revolution, which historians date to between 1780 and 1850. During this period, the development process was driven by the introduction and diffusion of steam power and modern factories. The second revolution, during the second half of the 19th century, was characterized by the application of steam power to railroads and steamboats. During the third, in the first half of the 20th century, there were a variety of large-scale innovations: electricity, the internal combustion engine, chemistry. In addition, other energy sources also appeared: oil and electricity, in addition to coal. There

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and factor productivity, in particular labor." Sylos Labini (1992, p. 235) (trans. Carmelo Ferlito).

[81] Sylos Labini (1993a, p. 115) adds that we can distinguish three main cyclical periods. During each period the features of fluctuations differ greatly. At least "three periods need to be distinguished: (1) 1800–1913, (2) the interwar period and (3) the period starting with the end of the Second World War. The cycles observable in the nineteenth century and until the First World War can be called classical business cycles, the interwar period was marked more by violent and irregular fluctuations than cycles, and the cycles that can be observed after the Second World War can be defined as new business cycles." See also Sylos Labini (2004, pp. 92–95).

[82] The "idea of long cycles must be approached with great caution. It may prove to be only analytically deceptive, but also dangerous for economic policy, since it may generate an almost fatalistic acceptance of the economic difficulties with which we are at present grappling. This idea can be useful only if it is used as a rational basis for grouping, and improving the description of, certain complex processes which take place in historical time. Some aspects of these processes recur because the impulses which generate them are themselves recurrent, and in the ultimate analysis they flow from major innovations. But recurrence and regularity are separate concepts. Regularity may be an optical illusion; and it is possible to identify other 'long' cycles, of a different duration, as Schumpeter himself was inclined to admit. In any case, the idea is still valid, that there are several industrial revolutions succeeding each other over time and characterizing different periods of the modern age." Sylos Labini (1984b, pp. 87–88). See also Sylos Labini (1989, pp. 58–59).

was also an expansion of the "public hand" in the economic system. Today, Sylos stated, we are living in the fourth industrial revolution, dominated by atomic energy and airplanes.[83]

In this regard, Sylos does not agree with Schumpeter when the latter states that cycles began in the dawn of time. Sylos refers to Marx, saying that cyclical movements began just after mechanical industry established itself, after the Napoleonic wars.[84] Sylos adds that social, institutional and economic changes influenced the cycle and its features. Until the First World War, small firms dominated the scene, so the cycle was more regular and an average length of 7–9 years (the Juglar cycle in the Schumpeterian terminology) was clearly distinguishable. After the Second World War, the long cycle idea no longer sufficed to explain fluctuations. We now had to consider the role of the State and the unions.[85] This was the first statement indicating Sylos' fusion of Keynes and Schumpeter.

> Schumpeter does not consider in his theoretical model either the State or the trade unions, which Keynes on the contrary does, although only in a stylized and circumscribed way. Keynes, however, does not consider either the changes in productivity or innovations, which Schumpeter places at the heart of his analysis. As to market forms, Schumpeter is well aware of the spread of the large units of production, so much so that he puts forward the distinction between "competitive" and "trustified capitalism" to indicate the new economic system which, in his view, is tending to emerge from the concentration of the units of productions; however, he feels that the new market structures have not yet succeeded in dominating the scene and in modifying in depth the mechanism of reaction of the economic system. Hence, he reasons as if the traditional type of competition continued to operate fully in our days as well. Paradoxically Keynes' position is the inverse one. He assumes competition, but at bottom he reasons as if the formation of, and changes in, price took place in non-competitive markets.[86]

[83] Sylos Labini (1984b, pp. 86–88), Sylos Labini (1993a, pp. 115–116), Sylos Labini (1989, pp. 33–36), Sylos Labini (1983, pp. 379–380).

[84] Sylos Labini (1984a, p. 59 of the Italian edition; it is not translated in the English edition), Sylos Labini (1998a, p. 347).

[85] Sylos Labini (1984b, pp. 93–94).

[86] *Ibid.*, p. 89.

Sylos thus distinguishes three models of business cycle theories: Schumpeterian, post-Keynesian and integrated models.[87] In the Schumpeterian approach, innovation gives the first impetus to cyclical development. This impulse means increasing investment, powered by credit creation. The rising demand for production brings out increases in the demand for consumption goods too; this means rising prices and profits. When innovative products reach the market and firms start to return loans, prices fall, causing bankruptcy for the non-innovative firms, since they failed to reduce costs and acknowledge the changes in prices.[88]

At first glance, it might seem that this approach has nothing in common with Keynesian perspective.[89] In fact, Keynesian models regard technology as given and prices as constant; moreover, the cycle is analyzed in terms of aggregates. In Keynesian models, the initial impulse comes from autonomous investment (generated by innovation or public decisions). An autonomous investment makes consumption rise and thus, via the multiplier, income rises too. The income increase, in turn, causes further investments via the accelerator. This way a spiral mechanism is created; it reinforces itself, until it breaks down, when full utilization of productive resources is imminent. At this point, the rate of increase in income tends to slow down, then fall. The decrease, first relative to the multiplier, becomes absolute: income falls. So, the explanation of cyclical movements, in this approach, is via the interaction of the multiplier and the accelerator. However, this interaction can generate the cycle *or* development, not both at the same time.[90]

Sylos tried to combine the two approaches. In fact, the starting point, in his opinion, is the same.[91] In the Keynesian models, growth comes from a specific mechanism of interaction in which a central role is played by a progressive and irregular increase in

[87] *Ibid.*, pp. 86–100.

[88] *Ibid.*, pp. 90–91.

[89] *Ibid.*, p. 91.

[90] *Ibid.*, pp. 90–91. See also Sylos Labini (1993a, p. 121).

[91] Sylos Labini (1984b, p. 91).

prices. This process is hinted at, although in a non-methodical way, by Schumpeter too.[92]

Price stability is one of the major limitations of the Keynesian approach. But neither this, nor the Schumpeterian model, take account of the State, unions, foreign demand or imports. To build up an integrated model, three corrections need to be made.

The first concerns market theory. Sylos says we have to distinguish between the sector of industrial products and the branch of raw materials. The link between prices and direct costs regards industrial prices only, while for the raw materials market, the perfect competition assumptions are valid. Moreover, Sylos tries to apply the Schumpeterian view to an oligopolistic system, while Schumpeter, though saying oligopoly is reality, elaborates a model for a competitive system. Specifically, Sylos states that, in the new reality, the "new" does not merely add to the "old," but replaces it, and the volume of investment may even fail to rise, though the productivity of production factors rises.[93]

The second correction deals with purchasing power. Price variations are not proportional to those regarding salaries, because of changes in productivity. Moreover, they are not proportional in the price system in itself, because of innovations (Schumpeter) and because different price categories are ruled by different mechanisms. Thus, changes in prices cause variations in the way income is distributed between different production factors. The profit share changes too, and this mutation affects investment decisions, having effects on the development of the cycle.[94]

The last correction concerns productivity. An increase in labor productivity is one of the most important effects of innovations. It is a frequent, but not necessary, effect. In fact, in Sylos' opinion, it is possible to talk about such an increase only in the case of innovations regarding production processes, not in the case of new products.[95]

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[92] *Ibid.*

[93] Sylos Labini (1956, pp. 147–148). See also Sylos Labini (1968).

[94] Sylos Labini (1984b, pp. 93–94).

[95] *Ibid.*, p. 94.

Schumpeter pays attention to autonomous innovations, neglecting innovations resulting from an increase in demand.[96] If we observe changes in productivity, it can be seen that productivity increases constantly, though at varying rates. This means that the smaller innovations—generated by expansion of the market and by a rise in the relative cost of labor—have, in the aggregate, the most weight. That is to say, in each historical period, the big innovations create impulses and requirements for development, while the development, once activated, is powered by the flow of small innovations.[97]

In Sylos' opinion, the link between the increase in aggregate demand and the incentives created by the flow of small innovations is, together with the central role of autonomous investments, the bridge between Schumpeter and Keynes. Unlike Keynes, Sylos focuses not only on aggregate demand, but also on the demand of each sector. However, Sylos states that the faster the rise in aggregate demand, the faster the rise in sector demand. In this context, the dynamics of aggregate demand and factors that affect movements in the demand of every consumption good[98] need to be studied.

In this integrated model, Sylos introduces the hypothesis that, when certain conditions change, fundamental equations change too. This modification stands on the following set of assumptions.

1. During the downswing, families save less, trying not to reduce consumption. Thus, in this phase the consumption/income ratio increases.
2. Capital stock rises with investments, so the limit to the income increase rises too.
3. The income increase is generated by the increase in investment. However, when these investments tend toward zero (on account of the limitation mentioned above), they decrease and favorable conditions come about for autonomous investments (i.e. low interest rates).[99]

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[96] Ibid .and Sylos Labini (1992, p. 14).

[97] Sylos Labini (1984b, p. 94) and Sylos Labini (1983, p. 385).

[98] Sylos Labini (1984b, p. 94).

[99] Sylos Labini (1993a, pp. 121–122).

According to Sylos, after 2–3 years, an increase in investment (the real starting point of the cycle) produces an increase in production capacity and in the productivity of production factors (labor as well). Via the multiplier, these influence aggregate demand. Total demand and supply increase, on account of the increasing utilization of production capacity. The rapid increase in demand for labor and raw materials during the upswing, pushes up labor costs and the prices of raw materials, raising direct costs and consumption prices. But prices increase slower than costs, so profits fall. The rise in labor costs stimulates technological investments, but slowing employment generates a fall in total consumption. Thus we can say, according to Sylos, that:

a. when investments made to increase production capacity stop, the increase in supply is rapid; and

b. when investments made to cut labor costs stop, the productivity increase is rapid, but consumption slows down.[100]

These assumptions lead to a general slowing of the economy, caused by the conflict between accelerating supply and decelerating demand. The origin of this situation is a decline in profits generated by increasing labor costs. As profits drive investment, falling profits mean falling investment and thus falling total demand. Thus, the upper turning point is caused by falling profits related to contracting demand. In Sylos' vision, the upswing lasts as long as the investment gestation period lasts, two or three years. The subsequent contraction will last at least one year: the time required to rebuild profit margins by (partially) restructuring the fixed capital stock.[101]

The recovery can be achieved by autonomous innovations, public expenditure, foreign demand, or lowering salaries. The last method has been impossible since after the Second World War. Sylos adds, following Keynes, that in the short run we only have one possibility: public expenditure.[102]

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[100] *Ibid.*, pp. 122–123.

[101] Sylos Labini (1993a, p. 123).

[102] *Ibid.*, p. 124. We have to recall that even Hayek admits the importance of public expenditure for a policy of supplementing demand, during the later half of the declining phase of the cycle. See Hayek (1939, p. 63).

Monetary policy is also important, especially during the economic revival. A new increase in total demand may be created by autonomous investments, public expenditure or foreign demand. In all these cases, additional money is needed, because a reduction in the money supply / total production ratio would bring about a rise in the interest rate, stopping the recovery. If demand is driven by deficit spending, the central bank has to increase the basic monetary aggregate (Keynes considers this case). If the recovery is driven instead by private investments, the increase in the money supply may derive from an increase in bank's deposits on demand (Schumpeter emphasizes this fact).[103]

This is the business cycle theory elaborated by Paolo Sylos Labini. It is a useful interpretative instrument, constructed on the work of Marx, Schumpeter and Keynes.[104]

[103] *Ibid.*, p. 125.

[104] An analytical illustration of this theory is presented by the author in Sylos Labini (1956), pp. 103–187) and Sylos Labini (1993a, pp. 131–135). A detailed analytical and empirical model is elaborated in connection with the Italian economy: see Sylos Labini (1992, pp. 251–305) and Sylos Labini (2004, pp. 95–100).

APPENDIX: CONTENT OF THE UNPUBLISHED NOTES[105]

Paolo Sylos Labini

I. 1. Types of innovations. 2. Growth and evolution. 3. Prosperity and welfare.

II. 1. The quantity of money. 2. Saving and the theoretical model. 3. Cheap money and unemployment. 4. Mortgages. 5. "Hungry forties."

III. 1. On the rate of interest. 2. On the life of the firms. 3. An example of "resistance to the new."

I.1. Among the examples of innovations you mention the opening up of new sources of supply and that of new markets.

Does the opening up of new sources of supply necessarily imply a new production function? Is it not possible to conceive, for instance, the opening up of new lands with the same degree of fertility than the already cultivated ones, so that the production might be carried out with exactly the same coefficients?

And does the opening up of new markets mean innovation in any case? We may conceive that the firms expand their production within the same production functions (at decreasing average costs if there are "lumpy factors"). The opening up of new markets might allow for the possibility of applying new technical methods, of setting up new production functions; in this case the application of these new methods would be really the innovation.

I.2. In your Business Cycles and in other works of yours I have noticed the opposition: Growth vs. Evolution, the former excluding, the latter including--and being originated by--innovations.

You designate as "Growth" the changes in population and in the sum of total saving plus accumulation" (p. 83). And you say that "the effects of Growth are... capable of being currently absorbed... hence, cannot by themselves create the alternation of

[105] We have published here the original content of the notes. Any grammatical errors are in the original version.

booms and depressions we observe" (p. 84). This point of view seems to me acceptable.

But I ask myself: is a growth logically conceivable without changes in production functions?

I am still reflecting on this point.

It seems to me that "Growth" is conceivable without innovations only in the (exceptional) case of opening up of new lands with the same degree of fertility than the cultivated ones and with which it is possible to produce with the same coefficients. But without free lands "Growth" without innovations does not seem to me possible. The population cannot increase indefinitely without a corresponding increase in the "subsistencies"'; and the real capital cannot increase indefinitely without increase in the production of raw materials. It seems to me that neither Böhm-Bawerk's concept of the lengthening of production period nor the hypothesis of an increase of capital per man-hour could remove the doubt. I think that it is really "impossible to assume that there" is "no decreasing-return influence (defined with respect to given production functions and invariant fertility of soil) to overcome" (p. 237). I think that ever in order to expand production at constant average costs (in the long run at least) innovations are necessary.

You make a distinction between innovations that entail, and innovations that do not entail, construction of New Plant requiring non negligible time and outlay (p. 93), stating that in your analysis you will restrict yourself to the first type of innovation. Would not be of some help to introduce a distinction of this kind in connection with the question of "Growth"?

If it were possible to define all the innovations in terms of money costs, we might distinguish between innovations that allow to expand production at constant average costs and innovations that bring about a diminution of average costs. (The main difficulty, of course, arise in the case of innovations consisting in the supply of new commodities; theoretically, perhaps, we might compare the average cost of the new commodity with that of the "nearest" old commodity, namely with the cost of the commodity that satisfies a similar want and that is likely to suffer directly and immediately from the competition of the new commodity).

The innovations of the first type, those which simply enable the firms to neutralize "Law" of diminishing returns, might be absorbed without considerable trouble; they, plausibly, might be currently adopted by the existing firms and anyway might not give rise to the "competition-down" process. On the contrary, the innovations that not only neutralize the "Law" of decreasing returns, but bring about a diminution of the cost of production (of the "normal value"), might give rise, sooner or later, to the competing-down process and, possibly, to the cycle in your sense.

A question related to the problem of "Growth" is that of the effects of credit creation. Namely, if we take into account "Growth", the credit creation does not imply necessarily (or not proportionately) increase of price level. The case of credit creation without increase of prices might be linked with the possibility you mention (p. 111, footnote) of an hypothetical shift of factors of production.

If an economic system showed "Growth" only, a continuous credit creation would be conceivable without changes in the price level. But in this case it would be necessary to see whether credit creation itself would be conceivable; as credit creation necessarily implies the payment of interest, it would not be conceivable, if we admit that interest arises from profit and profit arises form reduction of costs (in a broad sense).

I.3. I agree that (cyclical) prosperity is not synonymous with welfare; but from your considerations one draws the impression that, in a sense, an inverted relation exists.2 It is true that, in this kind of statements, you put always many important qualifications (the most important is that concerning the "deep depressions"); but, when we consider the negative phases of the long waves the qualifications, perhaps, may appear more important than the statements.

You say, if I remember correctly, that, in general, Democracy works better in periods of declining prices. There are two considerations that leave doubtful on this point: the effort of a non negligible part of the capitalist classes to maintain their vanishing incomes through "artificial" (mainly political) monopolistic barriers; and the effort of the working classes to maintain the employment and to contrast wage cuts. For these and similar reasons (but not taking into account evolutionary changes) one might think that social

struggles should rather increase during the periods of falling prices, above all, of course, during the depressions occurring in these periods.

There are some connections between this question and that of the stagnation and the decline of "capitalism".

You say that "capitalism produces by its mere working a social atmosphere... that is hostile to it, and this atmosphere, in turn, produces policies which do not allow it to function."

You stress, among the other things, the declining importance of the function of entrepreneur in a "trustified" capitalism, the "crumbling of the protective walls" and the anticapitalist attitude of many "intellectuals".

I hope to have the opportunity to speak with you about two points related to this matter. Here I only indicate these points.

First, the increasing economical and political power of the working classes and, second, the increasing relative importance of the industrial sector in the capitalist societies.

The second point might give rise to the idea that, given the characteristics of the "industrial" activities, the gravity of the problem of unemployment tends necessarily to grow in every depression. Perhaps, it would be possible to speak of a rising "result trend" of unemployment.

The increasing economical and political power of the working classes also result from the cyclical evolution (increase of real income and technical and economical possibility of organizing powerful unions).

From the comparison of the two tendencies we might draw, perhaps, interesting considerations. We might stress, for instance, the fact that workers' organizations are, during depressions, more and more able to oppose laissez faire (=bourgeois) solutions of the problem of unemployment and impose, directly or indirectly, policies bringing about structural (probably anticapitalist) modifications of the economic system.

II.1. I agree that "it is... impossible to speak of the quantity of 'money' in the sense in which we speak of the quantity of a

commodity" (especially because the production of money, in the case of paper money, is a think completely different from the production of a commodity). But I wonder whether the concept of quantity of "money" is completely valueless or deceitful. You say that "certain claims to 'money' serve, within wide limits, the same purposes as legal tender itself"; and that one of the consequences is that "the distinction between velocity and quantity becomes blurred." I am not convinced of this. The point of view of Wicksell (shared, if I remember correctly, by Rist) seems to me to be unsound. The banks' reserves (even if consisting of gold coins) may be not considered as money, because they are not used as money; if, during emergencies of periods of panic, they come back into circulation, they become again money, but in this case they are no longer reserves. And if we refer ourselves to a given moment, the distinction between velocity and quantity (theoretically at least) seems to me clear: if there are 100 individuals and 100 bank notes, each individual, in a given moment, can hold (and not simply expect) one bank note and build up "plans" with it. I think that analogous considerations might apply to balances held by individuals with deposit banks.

II.2. "Accumulations and saving provide the means for consolidating rather than for building up industrial ventures" (p. 601). I agree. Also your thesis that "saving is not a major factor initiating economic change" (p. 83) seems to me acceptable.

But the exclusion of saving from your theoretical model leaves me doubtful.

If I have understood correctly, your considerations about the consolidation function of saving apply mainly to saving used to buy stocks and bonds (p. 588).

What about saving lent to banks? To a considerable extent this saving is used by banks to build up their reserves. Therefore the question arises: is the cyclical process conceivable without the banks' reserves?

It seems to me that recovery and prosperity can, recession and depression cannot, be conceived without banks' reserves. In other words, the process of "autodeflation" does not exhaust the relations between banks and firms during the negative phases of the cycles,

because there are bankruptcies and anyway insolvencies. Deposit banks find themselves with "deposits" that, having been born simultaneously as credits and debts, become only debts. The banks can face (and eventually eliminate) this disequilibrium if only they have adequate reserves. From this point of view, saving may appear as a condition of the very life of banks. More generally, in the cyclical process saving may appear as an element necessary for the liquidation of the "old firms" and therefore may appear as a necessary integration of the process of "autodeflation". If saving is not sufficient to liquidate the "old firms," consequences may follow very important for the structure of the economic system.

These considerations might perhaps have also to do with the question of the "result trend" of prices. Because, if bankruptcies and insolvencies of firms are considerable and the banks' reserves are insufficient to face the claims of the creditors; and if the bank of issue, on behalf of the government and protected by a declaration of inconvertibility of its notes (or only by a depreciation of them in terms of gold), come to rescue of the deposit banks granting its notes to them, at the end of the cycle the total quantity of "money" might result so much increased as to originate a price level higher than that existing during the previous "neighbourhood of equilibrium." This possibility (it is only a possibility, of course) may be conceived even in relation to periods so long as to include more than one "Kondratieff."

In Italy, for instance, during the seventy years preceding the second world war, we hand an increasing trend of prices; and this, I think, not only for reasons related to "unproductive" expenses of the state (e.g., war expenses), but also for "cyclical" reasons (rescuing of banks and firms operated, during depression, by the bank--or banks--of issue on behalf of the state), though undoubtly the cyclical process in Italy has been, to a variable but never negligible extent, the result of the impact of the "cycles" of more capitalist countries. During the same period the increase of per capita income, which has been very small, may be attributed to the fact that the increase of the wage level has been a little higher than the increase of the price level. In other words, the increase in the standard of living in Italy took place through an increase in wages greater than the increase in prices, instead of a decrease in prices without a decrease in wages.

II.3. "The prevailing cheapness of money will give them a slant towards mechanization..." (p. 954; also: p. 995).

This point is not clear to me. The possibility, for firms, to obtain "money" more cheaply should give them a slat to increase the demand of all the factors of production, labour included. If the firms prefer to buy more machinery and less personal services, the choice would seem to me to be based on the comparison of the prices of the various factors of production and not on the cheapness of money. (E non è detto che i prestiti a lunga scadenza servano solo a finanziare acquisti di macchinari e quelli a breve di capitale circolante. Può darsi che un'impresa si carichi di debiti a breve che via via rinnova ed anzi accresce, per pagare salari totali, che aumentano; poi consolida il debito emettendo azioni o obbligazioni a lunga scadenza. Viceversa, l'impresa può far debiti a breve che rinnova ed accresce per acquistare macchinari. Si può dire che questi sono casi "patologici," "anormali," Può darsi, ma il principio cade).

II.4. More than once I found in your Business Cycles statements that could give rise to the idea that mortgages contracted for the purpose of buying lands are necessarily unproductive. If mortgages are contracted in periods of rising prices and, moreover, with the purpose of ripening gains due to the increasing land values rather than harvests, what you say is unquestionable. But we may think that an entrepreneur, possessing no factors of production and needing agricultural land in order to actuate an innovation, may acquire a piece of land with a mortgage loan. In this case, it seems to me, that mortgage loan may come into category of "productive" loans.

II.5. As a historical indication of the "shift" of factors towards the production of producers' goods at the beginning of the (long) cycle, you mention more than once the "hungry forties" (p. 142, 503, 576). But I wonder whether those "hungry forties" may be rather attributed to a slackening of the agricultural production consequential to the long preceding agricultural depression, coupled with a series of poor or bad harvests. If the "shift" was one of the factors determining that situation, it was not, I think, a major one. (In general, I think that, taking into account "Growth,"

the "hypothetical" shift may be considered--especially in relation to the long waves--more important than the "actual" one.)

III.1. I have found an interesting consideration in a paper by F. Knight about the behavior of the rate of interest during the business cycle (interest does not become zero principally because "men do not expect the depression last forever"; Rev. of Ec. St., 1941, n. 2).

III.2. "Quantitative information about the life span of individual firms and analysis explanatory of their careers and their age distribution are among our most urgent desiderata" (p. 95, footnote).

Perhaps the following list of Italian statistical papers may be of some interest to you. (I had the list from the courtesy of Prof. G. Capodaglio.)

F. Vinci, La vita delle società per azioni, Rivista delle società per azioni, 1918, p. 316.

G. Lasorsa, Indagini sulla mortalità delle società per azioni, Rivista di Politica Economica, 1936, p. 527.

G. Capodaglio, Storia di un investimento di capitale. La società italiana per le strade ferrate meridionali (1862-1937), Milano, Bietti, 1939 (p. 60: Tavola di sopravvivenza delle società italiane per azioni)

III.3 The "Legge sulla disciplina dei nuovi impianti industriali" of 1933 (January, 13) affords a good example of legalized and "planned" resistance to the "new" in a fascist state. According to this law, every project of new industrial plant or of enlargement of the existing ones had to be examined and approved by the competent corporazione, i.e., practically, by the representatives of the already operating firms. The information about the application of the law and, more broadly, the analysis of the Italian Industrial sector during the decade preceding the second world war might be interesting perhaps, also in connection of the theoretical question of "Growth" and of what you call cyclical evolution. (L. Einaudi, La corporazione aperta, Riforma sociale, 1934, n. 2, p. 134; A. Santarelli, Dati e considerazioni intorno alla disciplina corporativa delle nuove iniziative industriali, Rivista internazionale di scienze

sociali, 1941, n. 1, p. 48; L. Einaudi, Intorno alla disciplina degli impianti industriali, Giornale degli economisti, 1941, n. 7–8, p. 458; G. Demaria, Il problema industriale italiano, Giornale degli economisti, n. 9–10, 1941.).

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