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Emil Lederer's Theory of Economic Fluctuations and the Role of Financial Institutions

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Abstract Emil Lederer was characterized as the "leading academic socialist of Germany in the 1920's" by Joseph Schumpeter and was a highly respected economist of his time. However, most aspects of his work remain totally unexplored. This paper focuses on Emil Lederer's theory of economic fluctuations defending the thesis that certain aspects of Lederer's conceptualization of economic fluctuations underwent considerable modifications when his 1925 article *Konjunktur und Krisen* is compared with his 1938 book *Technical Progress and Unemployment*., a shift unacknowledged so far in the literature. In his first attempt to tackle the issue, in *Konjunktur und Krisen* (1925), Lederer had constructed an explanation consistent with the so-called "disproportionality theory" introduced by Tugan-Baranowsky (codified as "early Lederer"). However, Lederer's conception of the business cycle during the 1930s and especially in his major work *Technical Progress and Unemployment* underwent considerable modifications. Lederer's (1938) analysis is, apparently, very 'Schumpeterian' (codified as "late Lederer"). In this version of his theory, the cycle is explained by supply-side factors, and more specifically by technical change. Additionally, Lederer's view on the role of financial institutions

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(credit and banks) with regards to business cycles is analysed. Lederer avoided attributing a causative role to monetary factors. The interrelation between 'real' factors and financial institutions constitutes an essential element in his analysis of the business cycle.

Keywords Lederer · Schumpeter · Hilferding · Tugan-Baranowsky · Economic fluctuations · Credit

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Introduction

Emil Lederer had been characterized as the "leading academic socialist of Germany in the 1920's" (Schumpeter 1954, p. 884) and was a highly respected economist of his time. He studied law and economics at the University of Vienna. Among others, his professors were Carl Menger, Friedrich von Wieser, Eugen von Böhm-Bawerk and Eugen von Philippovich, while Ludwig von Mises, Otto Bauer, Joseph Schumpeter and Rudolf Hilferding were among his friends or classmates. He taught at the University of Heidelberg while he held lectures as guest professor at Tokyo Imperial University. Lederer was active in Social Democratic circles and in 1919, he was appointed member of the *German Socialisation Committee*, along with Hilferding and his old Vienna classmate, Joseph Schumpeter (Michaelides and Milios 2005). In 1931 he succeeded Werner Sombart at the *German Faculty for National Economy and Financial Sciences* at Humboldt University of Berlin. However, in April 1933 the Nazis began to suspend professors on reasons of "Jewish ancestry" and "political unreliability" (Hager 1949) and Lederer was forced to immigrate[1] to Japan and then to the USA where he stayed until his death in 1939.

Lederer exemplified a type of versatile economist whose analysis reflected a rich background of diverse influences and theoretical traditions. His 1936 paper "Developments in Economic Theory" presented at the 48th Annual Meeting of the American Economic Association is an example of his encyclopaedic knowledge of the trends in economic theory and methodology. His interests included to other disciplines as his posthumously published sociological work *The State of the Masses* testifies.[2] As Allgoewer (2003, p. 328) noted: "Lederer's work combines approaches that were at other times the subject of fierce professional debates […] Therefore it is impossible to fit Lederer into any one school of thought; he does not conform to expected patterns. In his writings he comes off as a fascinating, if idiosyncratic, thinker".

In addition, Lederer combined an academic career with an active engagement in politics. Looking at the various economic and social issues which he studied throughout his career, one immediately notices their immense practical interest (technological unemployment, business cycles, the middle class, totalitarianism, war, etc.). However, his involvement with politics took also the form of being an active

[1] For Lederer's attempt to sociologically understand the main features of war, especially World War I, see Lederer (2006).

[2] Odegard (1941, p. 203) characterized it as a "profound analysis of modern fascism".

member of U.S.P.D and serving on both the Austrian and German socialization commissions after World War I. Lederer also contributed regularly in socialist and trade union newsletters and in newspapers (Huebner 2008).[3]

However, Lederer's contributions remain unexplored as very few papers have been devoted to his work (e.g. Allgoewer 2003; Dickler 1981, 1983, 1987; Diebolt 2006; Esslinger 1997, 1999; Hagemann 1997, 2000; Huebner 2008; Michaelides et al. 2010; Vouldis et al. 2011). This paper focuses on Emil Lederer's theory of economic fluctuations. It defends the thesis that certain aspects of Lederer's conceptualization of economic fluctuations underwent considerable modifications when his 1925 article *Konjunktur und Krisen* is compared with his 1938 book *Technical Progress and Unemployment.*

In his first attempt to tackle the issue, in *Konjunktur und Krisen* (1925), Lederer had constructed an explanation consistent with the so-called "disproportionality theory" introduced by Tugan-Baranowsky and later adopted by Hilferding and others (codified as "early Lederer"). However, Lederer's conception of the business cycle in *Technical Progress and Unemployment* underwent considerable modifications. Lederer's (1938) analysis is, apparently, very 'Schumpeterian' (codified as "late Lederer"). In this version of his theory, the cycle is explained by supply-side factors, and more specifically by technical change.

Furthermore, Lederer's view on the role of financial institutions (credit and banks) as regards business cycles is analysed. Lederer avoided attributing a causative role to monetary factors. However he considered the interrelation between 'real' factors and financial institutions, as an essential element in his theory of the business cycle.

The paper is structured as follows: in "The Demand Side Approach (1925)" Lederer's demand driven theory of the business cycle is presented ('early Lederer'); in "The Supply Side Approach (1938)", Lederer's supply-driven theory of the business cycles is described ('late Lederer'); in "The Role of Financial Institutions" an analysis of the credit mechanism especially with regards to its effect on economic fluctuations takes place; finally, "Conclusion" concludes.

The Demand Side Approach (1925)

Lederer attempted to provide a theoretical explanation of the business cycle, an issue which he regarded as being of great importance: "We can say without exaggeration that the bulk of modern theory is business-cycle theory" (Lederer 1936, p. 157). Lederer's vision of business cycles, as an endogenous phenomenon inseparably linked with the growth process of a capitalist society, remains unchanged in all his works. However, Lederer's conceptualization of business cycles underwent modifications in certain aspects and when his 1925 article *Konjunktur und Krisen* is compared to his 1938 book *Technical Progress and Unemployment* the differences are discernible as we are about to analyze below.

In his first attempt, in *Konjunktur und Krisen* (1925), Lederer had constructed an explanation consistent with the so–called "disproportionality theory" introduced by

[3] It should also be noted that Lederer's major work on Technological Unemployment was published by the International Labour Office rather than an academic publisher.

Tugan–Baranowsky and later adopted by Hilferding, Bucharin and others. Lederer argued that: "Almost all the cycle theories agree about the nature of these disturbances-they are disproportionalities" (*ibid*, p. 156).[4]

According to Lederer, in order to understand the business cycle, a clarification of the interconnection between the processes of production and distribution is needed. In this respect, it is necessary to distinguish between different social groups according to the sources of their income. Lederer deems it necessary to extend the Marxian dipolar class struggle between workers and capitalists.[5]

More specifically, he uses the distinction between a productive and an unproductive sector with the later obtaining income through taxes and interest payments. The productive sector is further divided into the industrial and the agricultural sector. As a result, his social groups include capitalists and workers, in the industrial sector, along with farmers and agricultural workers. In addition, he considers the group of public employees whose income is derived from the taxes paid by the productive sector. Finally, rentiers also receive their income as transfers from the productive sectors in the form of rent. The incomes of the "unproductive" social groups (public employees and rentiers) are less volatile compared to profits and wages and this is a crucial aspect of Lederer's business cycle theory.

In Lederer's analysis, the boom period starts due to an increase in effective demand, which is attributed to the social groups with fixed incomes (i.e. public employees and rentiers). Credit creation follows as an essential component of the booming period. This phase is characterized by an increase in prices although this increase is disproportional in the various sectors of the economy: prices in the producer's goods sector will typically raise more compared to consumer's goods. In addition, the increase in wages will be also at lower rates compared to those of prices thus the real wages will decrease. The slower rate of increase in wages is the explanation for the existence of *extra profits* during this phase of the cycle. A redistribution of income will take place from wage-earners to capitalists. The composition of demand will, as a result, contain a greater part of demand for investment goods than demand for consumer goods (on the assumption that profits are invested and wages are spent on consumption). The general trend will therefore be of a disproportional growth rate between the sectors of producer goods and

[4] Disproportional developments in the producer and consumer goods sectors in the course of the business cycle constitute a common point between Lederer's 1925 analysis and Schumpeter's work on business cycles (Allgoewer 2003, p. 333). While Schumpeter acknowledged the importance of disproportionality ("[T]his idea […] is moreover easy to substantiate from certain very obvious facts" [Schumpeter 1954, p. 1133]) he avoided attributing a causative role to it. He stressed the importance of looking for "the definite factors that are to account for it" and concluded that "those factors and not disproportionality per se will individuate an author's theory" (*ibid*, p. 1133).

[5] Lederer was especially concerned with what he considered to be a weak point of Marxist theory, namely the dipolar class struggle between capitalists and workers. Together with other socialist theoreticians of the period he sought to develop a conceptual framework within which to analyse the complex stratification of the inter-war German society and especially the increasingly important middle class (Mayer 1975). However, Lederer's views on this issue did not remain unchanged. While in 1907 he wrote that the formula "capitalist—proletarian blurs all contrasts within the economic order and thus obscures all distinctions outside of and within the process of production" (Lederer 1912), in an article written in 1926 (jointly with J. Marschak) he expressed the view the that salaried employees are seemingly becoming aware of the "fundamental incompatibility between capital and labor" and consequently are joining themselves with the working class (see further Burris 1986; Hagemann 2000).

consumer goods. This discrepancy will be revealed at the turning point of the cycle when it will become clear that the growth which took place in the producer goods sector is not matched by a corresponding growth in the demand for final goods.

The insufficiency of demand, which signals the initiation of the depression phase, will be felt, according to Lederer, most probably in heavy industries.[6] However, it will spread through the whole of the economy and decreases in prices and profits will make their appearance. Wages will fall at a slower rate than prices and the explanation offered is that the contracts which determine them are less prone to change than prices. The redistribution of income will be reversed compared to the prosperity period. The real wages will rise in parallel with the increase in purchasing power of the fixed income group. The later social category is again considered to play a pivotal role in the revival of the economy. The relative stability of their incomes is a decisive factor in restoring the levels of effective demand and initiating a new prosperity period.

Haberler (1937) regarded Lederer as an underconsumptionist due to the latter's focus on demand insufficiency at the end of the booming phase.[7] More specifically, he classified Lederer's theory, as presented in *Konjunktur und Krisen,* as an over-investment version of under-consumption theories. Over-investment refers to forced savings due to excessive profits of the entrepreneurs: "This profit-inflation can and must arise because wages and certain other incomes fail to advance in harmony with rising prices" (Haberler 1937, p. 137). Allgoewer, on the other hand, stressed the differences between Lederer and typical underconsumptionist theories. In the first place, Lederer, unlike underconsumptionists, "considers the crisis as necessary to bring about the adjustments in the production sphere" (Allgoewer 2003, p. 342). Furthermore, she noted that for Lederer, "savings are desirable as they allow accumulation and growth, a classical concern separating Lederer from under-consumptionists" (*ibid*, p. 342).

In Lederer's early explanation of the business cycle, it is not very clear what the *ultimate* cause of the boom period is. Allgoewer (2003, p. 331) described Lederer's vision of the business cycle as demand-driven and assigned the leading role to classes with fixed incomes, the purchasing power of which increases during the crisis phase. Meanwhile, Allgoewer regarded credit as an essential precondition but not as the ultimate cause of the cycle. On the other hand, Kuznets classified Lederer in the group of theoreticians who stress the comparative stability of wages as compared to the movement of prices of commodities (Kuznets 1930, p. 312). Such wage "stickiness" leads to a demand-driven revival phase succeeding a depression. However, Kuznets seems to have misinterpreted Lederer's theory when he defined as its central element the assumption of a comparative stability of wages and contrasted

[6] Lederer mentioned the decrease in employment as the most reliable leading indicator for a phase change in the economic cycle. More specifically, a deceleration of demand, either in the capital or the consumer's goods sector, will inevitably lead to dismissal of workers.

[7] Certain passages in Lederer's work are of an underconsumptionist character. In his 1934 article on technology he wrote: "The question of equitable distribution of the social product is a difficult one because of the antinomy in capitalist production whereby wages not only figure as costs of production but are at the same time also a source of purchasing power. Whereas the lowering of wages up to a certain level is often a necessary condition for the realization of profits, it may likewise involve a danger for profits" (Lederer 1934, p. 554).

this to Tugan Baranowsky's reference to the stable income flow of certain social groups such as public sector employees, bondholders and landlords. In fact, as the presentation of Lederer's theory above showed, the Austrian theoretician incorporated in his business cycle analysis both Tugan's idea of the role of fixed incomes alongside the general characteristic of relative wage stickiness.

The Supply Side Approach (1938)

Lederer's analysis of the business cycle during the 1930s and especially in his *Technical Progress and Unemployment* (1938) was differentiated from that of his 1925 work. His conception of the business cycle in 1938 is, apparently, very 'Schumpeterian'. The initiation of a boom is explained by supply-side factors, and more specifically by technical change.[8] Lederer emphasized the existence of different forms of technical change which do not all produce the same effects and considered inadequate all theories which regarded it as a uniform phenomenon: "[I]f we lump all technical changes indiscriminately together we are applying the same theoretical standards to facts which theoretically differ fundamentally from each other, both in their nature and in their effects" (Lederer 1933, p. 8). Specifically, Lederer decomposed technical change into two types, namely 'rationalization' and 'inventions'.[9]

The term 'inventions' was used by Lederer to describe "technical innovations as led to the production of goods which enlarge the scale of needs" (Lederer 1938, p. 7) and create "hitherto unknown 'genuine' or 'social' needs" (Lederer 1938, p. 24). The new firms, which adopt inventions compel 'old' firms to react to the new situation or become obsolete: "most of these commodities have a double character: they lead on the one hand to the realization of new necessities and lead so far to an expansion of the total production, but in most cases they compete with other branches of production too" (Lederer 1938, p.23). The introduction of inventions leads to a general expansion of the economic system: "inventions lead to an expansion of the whole system of production and a parallel increase in the total purchasing power of the community, through the creation of money or a rise in the velocity of circulation. These effects cannot be regarded as disturbances but must be recognized as one of the fundamental forms of the growth of the industrial system" (Lederer 1938, p. 135).

For Lederer, this type of technical change is not directly linked to his explanation of the business cycle. In his analysis of the booming period following the introduction of inventions, Lederer does not mention the possibility of a depression phase following it. More specifically, for Lederer, this type of technological change is primarily linked to long-run growth rather than business cycles. In 1933, he mentioned the continual appearance of inventions as a precondition for promoting the general process of economic development and smoothing disturbances in economic activity (Lederer 1933, p. 7).

[8] In an earlier article from the 1930s, Lederer had noted that "it is certain that the dynamics of capitalist economy is bound up intimately with modern technology" (Lederer 1934, p. 553).

[9] Lederer's distinction between these two forms of technical change reminds us of the one proposed in the (neoclassical) literature between process and product innovations (see e.g. Acemoglu 2009).

Rationalization is the second type of technological change responsible for the appearance of fluctuations. In Lederer's work it is a general concept covering every cost-saving process (either capital-saving or labor-saving) related to increased efficiency in organization. Rationalisation "lower[s] the cost of producing certain goods, but do so by directly or indirectly reducing the number of man-hours necessary to produce them" (Lederer 1933, p. 4). In contrast to the application of inventions, rationalization and especially labor-saving technical improvements do not ensure unhindered growth and can have serious social repercussions.[10]

Lederer envisaged a boom period following this form of technical change, facilitated by an 'elastic' monetary system and the creation of new means of payment. The mechanism behind the boom initiation is based on the initial redistribution of income from the displaced workers (in the form of wages) to the capitalists (in the form of profits), caused by rationalization. Re-investment of the increased profits will provide spur to economic expansion. The boom period signaled by the application of technical progress "creates a new initial situation enabling employment capacity to be enlarged by a fresh combination of capital and labor, which can be financed by recourse to extra short and long-term credit" (Lederer 1938, pp. 233–4). Differential profits will be earned in the course of the prosperity period (*ibid* pp. 236–8).

For Lederer credit expansion was a necessary complement to the new undertakings in a way analogous to the Schumpeterian description of the process. He stressed the importance of credit creation in explaining business cycles by emphatically arguing that: "no cyclical development can be explained or described without taking account of the monetary aspect, additional credit providing the fuel without which any dynamic power would spend itself very quickly" (Lederer 1936, p. 156).

However, when the initial wave of expansion, caused by rationalization, new investments and credit creation, has subsided, and firms are forced to repay the loans from their profits, depression will set in, resulting in unemployment: "the decline in employment in the mechanized industries, which was concealed by the general increase in employment and activity while the boom lasted, will begin to make itself generally felt" (Lederer 1938, p. 244). His analysis is mainly focused on the prospects of re-absorption of the displaced workers that rationalization has produced and so he does not provide a detailed theoretical description of the depression phase.

The function of credit expansion is the financing of new investments especially during boom periods. The initial credit expansion will be spent on working capital but in the long-run the need will arise for additional fixed capital. This need will manifest itself first of all as increasing demand for working capital in the capital goods industries and later on as an investment demand both in the consumption goods and in the capital good industries. The danger inherent in this sequence of events was, according to Lederer, the inability to consolidate the provoked credit expansion from the savings (profits): "It is true that every expansion of production implies a possible increase in the volume of savings, but dangerous stresses may arise if the reserves of idle savings are small and if business credit is expanded to an extent exceeding the rise in savings which may be expected as a result of the boom,

[10] Lederer mentioned the mechanical spindle and loom as a great historical example of the disturbances caused by this type of technical change (Lederer 1933, p. 5).

an eventuality which is all too probable, because modern systems of payments permit of a rapid increase in the supply of money and therefore in business credits" (*ibid*, pp. 230–1).

Regarding the prospects of a revival that are reinforced through the course of the depression phase, Lederer explicitly mentioned the possibilities of a new phase of expansion that are created during phases of depression in the monetary sphere: "Every depression […] will, owing to the severe shrinkage of production, renew the possibilities of monetary expansion; the total circulation of money diminishes, the velocity of circulation is retarded, and reserves increase. This means that side by side with the displacement of the factors of capital and labour from production, fresh opportunities arise of expanding production through credit" (*ibid*, p. 227).

Lederer's supply-side approach to the business cycle was only presented as an underlying business cycle theory in his major works which focused on the issue of technological unemployment (Lederer 1931, 1938) and other articles during the 1930s. As a result, most business cycle theorists considered Lederer's thesis on the business cycle phenomenon to be based on the disproportionality explanation of his 1925 article. Only the Marxist theoretician Natalie Moszkowska pointed out the inconcistency between Lederer's two approaches in her *Zur Kritik moderner Krisentheorien* (1935).

Moszkowska criticized Lederer's supply-side approach as it dissociated technical change from the level of wages. Lederer explicitly rejected the view that technical change is a function of real wages (Lederer 1931, pp.13–5). Moszkowska's argument was that technical change takes place only when the productivity growth rate brought about by the introduction of new methods of production is much higher than the resulting rate of increase of capital per worker (so that the profit rate rises). As a result, technical change will be introduced only when it economizes a relatively high quantity of labor.[11] Consequently, Lederer's assumption that wages do not influence technical change is equivalent to the assumption that newly introduced machines *always* increase labor productivity to a much higher degree than it increase the quantity of available capital. In other words, Moszkowska accused Lederer of overestimating the effects of technical change on labor productivity. Lederer's view, on the other hand, of technical change being independent of the wage level, reflected his observation of continuing technical change during the Big Depression, despite falling wages: "[M]ost of those technical advances which might well be expected to be induced by rising wages are in fact applied during periods of depression when wages are falling. For instance, certain improvements which led to a saving of raw materials or to their fuller utilization (e.g. the utilization of fuel) were introduced during the recent depression while wages were falling just because the comparative efficiency of the new process is so great that it actually outweighs the fall in wages, i.e. they improve the cost-price relation whatever the absolute level of wages" (Lederer 1938, p. 33).

Lederer's shift in emphasis in his business cycle explanation could be attributed to his gradual movement away from certain interpretations of Marxist theory, the possible influence of other contemporary economists upon his work, and the need to provide explanations for economic reality, especially the Great Depression. His 1925

[11] See also Moszkowska's critique on Grossman (Moszkowska 1935, Chapter IV).

theory is similar to other disproportionality theories which were popular, during the first half of the 20th century, among Marx-inspired economists (such as those formulated by Tugan Baranowsky and Rudolf Hilferding) incorporating, however, the new 'twist' by considering the role of other classes besides capitalists and workers.

His view of the business cycle during the 1930s is further removed from traditional Marxian arguments by focusing on the role of technology and innovation in a Schumpeterian spirit. In his analysis of the mechanism which gives rise to cyclical fluctuations, the importance of the social stratification of the capitalist society is downgraded while the role of the innovator-entrepreneur is stressed. However, in contrast to Schumpeter, Lederer was especially concerned with the issue of technological unemployment and provided arguments which challenged predominant views about the existence of swift adjustment mechanisms of reabsorption for the unemployed (see further Vouldis et al. 2011).

No doubt, the theory of business cycles formulated by the 'late' Lederer should be placed in the context of alternative explanations of the Great Depression and the ensuing high levels of unemployment, for example with Ludwig von Mises' views on unemployment being caused by 'interventionism' in the labor markets. On this matter, and for a juxtaposition of Lederer's and von Mises' views, see Hülsmann 2007, p. 623 ff.[12]

The Role of Financial Institutions

Lederer laid emphasis to the role of financial institutions (credit and banks) in both of his theoretical approaches to business cycle, and throughout the whole body of his work. In his *Technical Progress and Unemployment* (1938) he emphasized that "it would be wrong to disregard the effect of monetary phenomena through which the real factors act upon the economic process" (Lederer 1938, p. 220).

Lederer discerned two forms of credit. First, there is the "static" view which regards credit simply as a transfer of savings. However, there exists a second and more dynamic conception of credit taking into account the possibility of "additional credit" (in German *zusätzliche Kredit*) defined as credit not backed by existing means of payment. Lederer considered the latter as a distinguishing feature of modern financial institutions.

Initially, Lederer analyzed the static view and argued that credit mechanism functions in a twofold manner. In the first place, it provides an argument in favor of Say's law by enabling savings to be utilized effectively in the production process. Seen from this angle, credit tends to facilitate the equalization of supply and demand and, thus, it performs a stabilizing role. This conceptualization of credit is, roughly

[12] Of course, Lederer's approach could be explained in association with other economists' works (mostly German speaking) such as Hilferding, some members of the so-called German Historical School, and several others, whose works covered a broad theoretical spectrum. See, for instance, Michaelides and Milios (2005), Michaelides and Milios (2009), Michaelides et al. (2010) and Vouldis et al. (2011). In fact, Lederer seems to have incorporated insights from his political involvement in Social Democratic circles to his theory, trying to combine his Marxist views with interwar German economic realities (Krohn 1981).

speaking, consistent with the mainstream view of the credit mechanism as improving efficiency and economic welfare.

However, Lederer acknowledged that credit, even in its static form, could act, under certain circumstances, as a factor of instability. More specifically, credit may favor the disproportional growth of the capital and consumer goods sectors which constitutes, as was analyzed earlier, the business cycle explanation of the "early Lederer". Excessive growth of the capital goods sector is caused by the investment of excess savings and subsequently a discrepancy between production and consumption arises. Conclusively, credit market makes saving an economically sensible option and thus it tends to favor relatively higher growth of the capital goods sector compared to the consumption goods sector.

The static conception of credit overlooks the possibilities offered in modern financial institutions to create new means of payment by granting "additional credit". Lederer attributed great importance to the later form of credit where new means of payment are created ex novo. In analogy with the static form of credit, Lederer discerned a twofold role for additional credit. Its first function is to enable innovative undertakings which hold promise for high profitability. Once again, in a 'Schumpeterian' spirit, Lederer regarded credit, in this sense, as the selection mechanism of a capitalist economy which directs the means of production towards their higher value-producing uses.[13] Thus, additional credit is, according to Lederer, an indispensable device for growth: "The extra purchasing power will go to form the incomes corresponding to the services rendered by the extra workers, and to provide the interest and amortization on the new capital invested in the previous year. […] The whole process, which implies a permanent expansion of annual production from year to year, can only develop without raising the value of money if there is a simultaneous and corresponding increase in the money supply" (Lederer 1938, p. 229).

Nevertheless, additional credit is also a source of instability as the expectations of profitability for the funded enterprises may be ill-founded. The direction of additional credit towards certain industries which hold promise for high profitability entails also a risk and creates the possibility of a devastating crisis if these expectations are not realized: "Of the credits granted during the preceding boom period, special attention is due to those which would not have been granted without an expansion of credit. These are the credits granted to the least profitable undertakings will be the first to collapse […]" (Lederer 1933, p. 20). Lederer argued that the market structure of the financial sector is crucial for the degree of instability caused by additional dcredit. Specifically, he considered that a more concentrated banking sector would be able to accurately evaluate the funding proposals and lead subsequently to a "right", capitalistically, distribution of additional credit.

Lederer believed that the form of additional credit dominated boom periods. Only additional credit is a sufficiently quick transmission channel through which firms are able to respond to increasing demand with an expansion of production. In contrast,

[13] The following excerpt is typical: "Heavy demands on the credit market are therefore only likely to arise as the result of sudden prospects of large profits, created in particular by the opening up of new markets, the manufacture of new products, and improved methods of production in the broadest sense of the term" (Lederer 1938, p. 230)

credit originating from savings and realized profits lags behind the immediate needs of firms for new means of payment.

Apparently, Lederer gave emphasis on the instability of financial institutions with regards to the emergence of crises. Instability is caused by the extension of the means of payment and more specifically the granting of additional credit to enterprises whose profitability cannot be accurately predicted beforehand. In his *Konjunktur und Krisen*, he noted that the absence of institutions delegated to supervise the functioning of financial markets may lead to devastating crises. This could be the case, for example, if big credit institutions connect their fate too much to a certain group of enterprises and therefore lack sufficient risk compensation in their debtors.

Lederer noticed, in his 1925 article, a tendency of the banking system for concentration which echoed the corresponding tendency of the industrial system to cartelization. He considered such a development to be positive in the sense that it ensured greater stability of the economic system and a decreased volatility of business cycles. Lederer assumed that concentration of the banking sector would enhance the reliability of credit granting decisions and additional credit would ideally function as a selection mechanism. However, Lederer, noted, in 1927, that regulation through credit policy would probably be insufficient in the context of a highly monopolistic industry as monopolistic firms rely on internal financing and can therefore circumvent credit markets (Allgoewer 2003, p. 336).[14]

Conclusion

This paper presented Lederer's contribution to the business cycle theory. It seems that Lederer ascribed to two distinct theories of the cycle. In his first attempt, in *Konjunktur und Krisen* (1925), economic fluctuations are demand-driven and his theoretical analysis seems influenced from the so-called disproportionality theories such as the ones formulated by Tugan-Baranowsky, Hilferding and others. Moreover, in one of his last works, *Technical Progress and Unemployment* (1938), the explanation of the cycle is sought in supply-side factors and more specifically, in a purely 'Schumpeterian' spirit, in technical change which cannot be absorbed immediately by the economic system (see also Vouldis et al. 2011). Furthermore, Lederer's views regarding the function of credit and the banking system were analysed. In addition to the mainstream view of credit as a transfer of savings, he conceptualized credit in a more dynamic and 'Schumpeterian' way as the creation of new means of payment (see further Michaelides and Milios 2005). The credit mechanism in his view constitutes an essential element of a modern capitalist economy and its effect is both increased efficiency but also infusion of instability

[14] Lederer's vision of the role of the state in alleviating the impact of economic fluctuations underwent a change after his emigration in the United States: "[Lederer] adopted a less pessimistic view of the ability of market mechanisms to compensate for the labor displacement effects of technological change; and he moved away from his earlier insistence on the need for comprehensive economic planning, advocating instead a greater reliance on traditional policy interventions such as deficit spending and public works. His change of stance on these matters no doubt reflected an increased concern about the State's potential to abuse its power" (Mongiovi 2005, p. 431). See also Allgoewer (2003, p. 337).

into the economic system. Finally, Lederer placed emphasis on the role of the banking system in ensuring the granting of additional credit into profitable enterprises.

Despite the differences in Lederer's respective analyses, some central aspects of his vision remain unchanged. Lederer regarded economic fluctuations as an endogenous phenomenon, inseparably linked with the growth process of a capitalist economy. In addition, he did not consider a dichotomy of the real and the monetary economy but placed emphasis on their interconnection. Lastly, his emphasis on the credit and its two-fold function as an efficiency-enhancing institution but also as a destabilizing factor remained unchanged. However, an interesting question for future research would be to investigate the reasons for Lederer's shifting attitude towards business cycle fluctuations.

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