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Emil Lederer and the Schumpeter– Hilferding–Tugan-Baranowsky Nexus

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ABSTRACT *This paper focuses on the thinking of Emil Lederer, one of the leading academic socialists of Germany in the 1920s. Lederer's views on economic development, technical change, credit and business cycles are compared to those of Schumpeter. The paper traces the roots of some of their ideas back to the work of two prominent Marxists, Rudolf Hilferding and Mikhail Ivanovich Tugan-Baranowsky. The paper concludes that although Lederer and Schumpeter are traditionally classified in different schools of thought, their theoretical views on many issues converge.*

1. Introduction

Although Emil Lederer was probably ‘the leading academic socialist of Germany in the 1920’s’ (Schumpeter, 1954, p. 884), many important aspects of his work have not been widely discussed. Lederer had a broad knowledge of different theoretical traditions, and he utilized them eclectically to analyze economic growth, business cycles and technological unemployment. His dynamic vision of capitalism and his emphasis on the endogenous nature of technological change are consistent with research directions that only recently have been explored by mainstream economic theory.

Given the presence of central elements of Lederer’s works in the analyses of other great theoreticians, such as Joseph Schumpeter, it is surprising that so little attention has been paid to him, and that affinities with other great economists or schools of economic thought have been left unexplored. This paper focuses on Emil Lederer’s theory of growth and business cycles. It attempts to clarify his contribution by providing an analysis of various issues in his work and by evaluating its importance in relation to other theoretical traditions, such as Marxism.

In the first place, the paper focuses on comparing Emil Lederer’s vision on economic development, credit and business cycles with that of Joseph Alois

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Schumpeter, to which it bears some striking similarities. Schumpeter's ideas were not quite as novel to prominent German-speaking colleagues, such as Emil Lederer, as they appeared to be to his English-speaking audience. Schumpeter and Lederer belonged to a rich theoretical tradition that has been marginalized by the domination of neoclassical thinking. One aim of the paper is to bring this tradition to light.

A distinctive feature of the outlook of Schumpeter and Lederer, is that they both saw rejected the assumption that the economy is practically always in a state of static equilibrium. The economic system they envisaged is open and forever changing. Economists typically treat innovation as an 'exogenous factor' that, like an earthquake, can have a profound influence on the economy as a whole but is not part of economics as a science. Schumpeter argued that innovation is the very essence of economics; he saw the innovator as the main agent of social evolution and as *the* subject of economics. Schumpeter and Lederer were students of the great figure of the Austrian camp at a time when Vienna was a 'melting pot' of nationalities and the capital of economic theory, but their works started out and proceeded with the assumption that the central problem of economics is *not* equilibrium but change.

The roots of some of Schumpeter's and Lederer's views can be traced back to two eminent theoreticians of the Marxist camp, namely Rudolf Hilferding and Mikhail Ivanovich Tugan-Baranowsky. Hilferding was a major Marxist theoretician of his time, while Tugan-Baranowsky made a major contribution in redefining Marxist orthodoxy on economic crises. We will argue that Hilferding's analysis in *Finance Capital* ([1910] 1981) constitutes a revision of Marx's 'macroeconomic' theoretical system in favor of a 'microeconomic' point of view that seeks causality in the individual enterprise. Lederer's approach is grounded in Hilferding's and not Marx's theoretical paradigm. We will also argue that Tugan-Baranowsky's approach allows for a Keynesian interpretation of Marx's theory; the apparent affinities in the works of Lederer and Tugan-Baranowsky stem from Tugan-Baranowsky's Keynesian interpretation of Marx, rather than being direct elaborations of Marx's original analysis.

The paper is structured as follows. Section 2 explores Lederer's and Schumpeter's respective theses on economic development and the role of technology. Section 3 discusses their views on business cycles and credit. Section 4 discusses the influence of Rudolf Hilferding and Tugan-Baranowsky on Lederer's views, and Section 5 shows that Rudolf Hilferding and Tugan-Baranowsky put forth arguments that were not always in line with Marx's analyses. Section 6 concludes the paper.

2. Economic Development and Technology

In the first Japanese edition of his *Theory of Economic Development*, Schumpeter noted that his purpose had been to create 'a theoretic model of the process of economic change in time . . . to answer the question how the economic system generates the force which incessantly transforms it' (Clemence, 1951, pp. 158–159). The book begins with a discussion of a circular flow process which, in the absence of innovative activities, leads to a stationary state. The stationary state

is, according to Schumpeter, a Walrasian equilibrium. The Walrasian approach took account of the interdependences of economic variables but was applicable only to a stationary process.

However, Schumpeter (1928) made it clear that this ‘stationary flow’ is a theoretical abstraction and serves only as a reference point. For Schumpeter, the process of economic development involved spontaneous and discontinuous change in the channels of flow, disturbances of equilibrium, which forever altered and displaced the equilibrium state previously existing. According to Schumpeter ([1912] 1961, p. 66), economic development covered the following cases: ‘1. The introduction of a new good ... or a new quality of a good. 2. The introduction of a new method of production ... 3. The opening of a new market ... 4. The conquest of a new source of supply ... 5. The carrying out of the new organisation of any industry.’ The agent of change is the entrepreneur (Schumpeter, [1912] 1961, pp. 79–80). Schumpeter clearly distinguished this process from growth due to the gradual increase in population and capital: economic development depends primarily upon productivity increases based on innovation. In *Socialism, Capitalism and Democracy* Schumpeter ([1942] 1950, pp. 81ff) linked the introduction of innovations to market structure and more specifically stressed the predominant role of large oligopolistic firms in technical innovation.

Lederer’s approach to economic development is surprisingly close to Schumpeter’s conception. For Lederer, economic development consists of: ‘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). Like Schumpeter, he considers the concept of equilibrium inadequate to analyze properly an economic system. He notes that for it to have any meaning we must fix the data so that ‘the inherent or observed tendencies towards change would have to be ignored.’ According to him ‘the idea of economic equilibrium can be effectively applied under a static system, but such a system is based on assumptions that remove it from most of the problems that have to be dealt with in actual practice’ (Lederer, 1938, p. 78). However, the examination of a static system can be useful in analyzing the short run, when most of the dynamic factors can legitimately be treated as fixed.

Lederer advocated that the static system be defined in the narrowest sense (with the growth rates of population and capital assumed to be zero) because the static system must serve as a basis for comparison and ‘the accidental inclusion of one or more elements of the dynamic system creates confusion in which it is difficult to distinguish the essentials of a static system and the consequences of disturbances from the outside’ (Lederer, 1938, p. 86). It is exactly the same principle that Schumpeter followed in order to explain the mechanism that sets the system into motion from a state of immobility.

Lederer used a static system to prove the possibility of permanent unemployment even in an actual dynamic system ‘if there are structural obstacles to any rapid change in quantitative ratios or in prices in the dynamic system’ (Lederer, 1938, p. 81). For Lederer the utilization of all factors of production is not a justifiable proposition even for a static system. The full utilization would presuppose the destruction or neglect of all surplus factors that exist in a system. Lederer noted that the optimistic view that delineates the static equilibrium as characterized

by the absence of idle factors ‘comes from the attitude of the laissez faire school, which invested the economic system with a harmony that is entirely unjustified within the dry and precise framework of the static system’ (Lederer, 1938, p. 81). In practice, it is necessary to ‘consider a longer period, with the changes that may normally be expected to occur within it. In that case the concept of static equilibrium has no meaning. That is why the concept of moving equilibrium was developed in its place’ and ‘this moving equilibrium means a system of “disturbances”’ (Lederer, 1938, p. 91), the combination of which produces a dynamic system where any regressive movements, which might occur, do not preclude further progress.

Just like Schumpeter, Lederer explicitly identified technical development as the distinguishing characteristic of a real dynamic system: ‘dynamic development can be adequately understood only if its essential feature is taken as being not a tendency to equilibrium but a series of impulses constantly driving it beyond the point it has reached. In this movement the tendency towards equilibrium exists only as an undercurrent’ (Lederer, 1938, pp. 91–92).

Monopolies and cartels also occupy an important role in Lederer’s work. He conceived the relation of technical progress and monopolies in a way very similar to Schumpeter:

[O]wing to its command and knowledge of the market and its power of deciding freely and with full knowledge of the circumstances on the technique to be adopted, a monopoly will be better able to transfer its operations to a lower level of costs and prices than one operating under free competition. Even assuming that under free competition too many firms can react immediately to every opportunity of reducing their costs, monopoly undertakings are still more likely to make a change when it involves heavy investment (and therefore a greater need for capital) and a very large expansion of output, as in the case of mass production. (Lederer, 1938, p. 133)

Lederer stressed the tendency for cartelization and monopolization of the market and considered this market structure to have destabilizing effects, because the rigidity they introduce to the price system tends to prolong slumps (for further discussion, see Allgoewer, 2003).

De Vecchi (1995, p. 3) has noted that Schumpeter’s work is ‘a comment, from constantly varying viewpoints, on a single affirmation: every aspect of social life is continually being transformed under capitalism.’ This same emphasis on change is also present in Lederer’s work.

We have noted that, for Schumpeter, economic development is mostly the result of innovation. Economic evolution is however discontinuous because of a discontinuity in the introduction of major innovations into the economic system (e.g., Schumpeter, 1935, p. 4).¹ Lederer too emphasized technical development as the distinguishing characteristic of the economic system (see for example Lederer, 1931;

¹See, for example, Schumpeter (1935, p. 4): ‘[The] historic and irreversible changes in the way of doing things we call “innovation” and we define: innovations are changes in production functions which cannot be decomposed into infinitesimal steps. . . . The kind of wave-like movement, which we call the business cycle, is incident to industrial change

1933, pp. 1–26). Technical change is important, according to Lederer, because technical development is more likely than other causes of change to bring about sudden change, which cannot easily be absorbed in a harmonious process of readjustment and adaptation (see Lederer, 1931, p. 112; 1938, p. 89). Technical development is, thus, responsible for ‘the extensive ups and downs in production that are typical of our modern capitalist process’ (Lederer, 1938, p. 90). Lederer (1938) stressed that ‘[i]t is idle to consider technical development simply as non-economic phenomenon and therefore of relatively little importance, involving merely a change in data which cannot change the nature of economic process. . . . [T]echnical progress . . . alone could have moulded the course of modern economic development along the lines in which we know it.’²

Regarding the relation between technological change and unemployment, the views of both Schumpeter and Lederer converge significantly. Schumpeter considered technological unemployment as an inevitable side-effect of evolution based on innovative activity. He distinguished between ‘technological unemployment’ as ‘unemployment arising from disturbance by innovation within the system . . .’ (Schumpeter, [1939] 1964, Vol. 2, p. 514).³ Cyclical unemployment, the ‘total by which unemployment varies in the course of cycles,’ is in fact a form of technological unemployment (Schumpeter, [1939] 1964, Vol. 2, p. 515): the emergence of dislocations is explicitly connected to the readjustments that take place during the cyclical process.⁴ While cognizant of the suffering that unemployment inflicts, Schumpeter insisted that ‘the primary long-run interest of the working class is in the effects of innovation on the total real wage bill and not in the incident variation of employment, which is but an element of the mechanism

and would be impossible in an economic world displaying nothing except unchanging repetition of the productive and consumptive process.’

²Lederer was, like Schumpeter, interested in the motive behind economic acts inducing economic evolution. He suggested that, a possible motive is the ‘[d]ynamic psychology on the part of individual economic subjects. Persons who are not satisfied with the beaten track strike out along new lines when they see a prospect of profit. This dynamic attitude may be deduced from the economic principle that man [is] always endeavouring to better his situation . . . This particular kind of initiative is restricted to the entrepreneur type. The desire for advancement which people who are not entrepreneurs also experience induces them to save. . . . Saving, however, only pays the people who perform this function in so far as the entrepreneurs invest and they themselves are willing to hand over their savings to the entrepreneurs for this purpose’ (Lederer, 1938, p. 86).

³The term ‘technological unemployment,’ Schumpeter ([1939] 1964, Vol. 2, p. 514) notes, ‘has always been intended to cover displacement of workmen by machinery. We make it cover a much wider range and include not only the effects on employment of every kind of change in industry and commerce—organizational change, for instance—but also the effects which changes have on employment in firms or industries that are competed with by the firms of industries that introduce new production functions.’

⁴See Schumpeter ([1939] 1964, p. 515): ‘Technological unemployment . . . linking up as it does with innovation is cyclical by nature. [P]eriods of prolonged supernormal unemployment coincide with the periods in which the results of innovations are spreading over the system and in which reaction to them by the system is dominating the business situation.’

that produces the changes of the former and can be separately handled by public policy' (Schumpeter, [1939] 1964, Vol. 2, pp. 515–516).

Lederer also recognized that technological unemployment could result from the introduction of labor-saving techniques. In *Technical Progress and Unemployment* he undertook a detailed examination of this phenomenon. In the first place, he disputed the claim of the *laissez-faire* school that automatic adjustment is ensured by the market mechanism. He pointed out that there is a contradiction between (i) the contention that technical progress does not alter the demand for labor because the resulting increased profit and reduced costs will bring about new investments and expansion of production; and (ii) the allegation that 'labour-saving technical improvements by which workers are displaced diminish the marginal productivity of labour and thus necessitate a reduction of wages' (Lederer, 1938, p. 9). He also called attention to the social effects of labor displacement: 'economists often admit that technical progress may involve dislocation, although their logical arguments point to the opposite direction. They explain this by saying that the dislocation is only temporary. But is this a valid argument? Human life itself is also temporary, and in matters of economics, interest will accordingly always be centered on changes that are of vital importance to any one generation, even if they will ultimately be assimilated to the general process' (Lederer, 1938, p. 147). The only important question, therefore, is whether medium-term unemployment can be attributed, at least partly, to technological progress (see Diebolt, 1997, 2006).

Initially, Lederer rejected the 'compensation theory,' which contended that, on the one hand, the displaced workers would be absorbed by the industries producing the same machines that are responsible for their unemployment and, on the other, that technical progress does not reduce total purchasing power. With regard to the first argument, Lederer noted that it is practically irrelevant because it would presuppose 'an accelerating expansion of capital accumulation and investment,' which is only possible for short term periods and with the aid of external factors such as 'export to other economic territories' (Lederer, 1938, p. 149). As far as the second statement is concerned, Lederer argued that there is no essential connection between the preservation of the total purchasing power and the sustention of the demand for labor at an unchanged level; in fact, the demand for labor could decrease (Lederer, 1938, p. 151). Overall, his analysis pointed to the absence of automatic compensation mechanisms and he finally came to the conclusion that the introduction of labor-saving techniques 'set[s] in motion a lengthy process of adjustment, and it is not until the final stages of this process are reached that the unemployment can be reabsorbed' (Lederer, 1938, p. 218; see also on this point Allgoewer, 2003).

Where Schumpeter's definition of technological unemployment covers all the cases where an innovation is applied, and encompassed a wide range of phenomena, Lederer considered technological unemployment as the result of technical improvements alone, and in particular of labor-saving technical improvements. But he saw these technical improvements to be more closely linked with medium-term unemployment than inventions; the latter, he argues, 'will not reduce the volume of employment but may even increase it temporarily during the period of actual investment' (Lederer, 1938, p. 25).

Despite the convergence of their views regarding the existence of technological unemployment, the emphasis Schumpeter and Lederer placed on the phenomenon varies significantly. Schumpeter devoted only a handful of pages to the issue in Volume 2 of *Business Cycles*, where he merely classified the various causes of unemployment and linked them to the process of capitalist development. As we saw above, he regarded technological unemployment as an ‘inevitable’ side-effect of capitalist development. For Lederer, fighting technological unemployment was a matter of the utmost priority due to the grave social consequences it entails. Accordingly, he devoted a large part of his efforts to investigate the issue of technological unemployment.

3. Credit and Business Cycles

Schumpeter viewed credit as inextricably linked to entrepreneurial activity and the introduction of innovations. Credit ‘enable[s] the entrepreneur to withdraw producers’ goods which he needs from their previous employments, by exercising a demand for them, and thereby to force the economic system into new channels’ (Schumpeter, [1912] 1961, p. 106). The provision of credit comes from the capitalist, who may, of course, use funds that are themselves the result of successful innovation and entrepreneurial profit. The capitalist bears the financial risk (the entrepreneur risks his job and his reputation) and, because capital utilization is nothing but the diversion of the factors of production to new uses, the capitalist has some power to dictate new directions to production. In this spirit, Schumpeter ([1912] 1961, p. 74) argued that ‘new combinations of means of production’ and ‘credit’ are the ‘fundamental phenomena of economic development,’ and that ‘fresh opportunities arise of expanding production through credit’ (Schumpeter, [1912] 1961, p. 230).⁵

Lederer’s view is consistent with Schumpeter’s thesis that anyone who wants to act as an entrepreneur in the pursuit of profit, must raise funds, the provision of which comes from the capitalist. He shared Schumpeter’s view of credit as indispensable to economic expansion: ‘the introduction of a new process of production can only be held up by the absence of extra means of payment’ (Lederer, 1938, p. 224; see also Lederer, 1925). Moreover, without access to credit, many non-expanding industries would have to contract (Lederer, 1938, p. 230). Economic activity is not financed by the savings of the past but only from additional credit (or new savings), which is equal to the creation of supplementary production capacity (Lederer, 1930, p. 514). For Lederer, additional credit is what matters as far as the business cycle is concerned: ‘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; see Diebolt, 2006, for further discussion).

⁵Schumpeter ([1912] 1961, p. 106) stressed the importance ‘of credit means of payment created *ad-hoc*, which can be backed neither by money in the strict sense nor by products already in existence.’ For Schumpeter credit provides an additional purchasing power fosters development; it ‘operates as an order on the economic system to accommodate itself to the purposes of the entrepreneur’ (Schumpeter, [1912] 1961, p. 107).

Lederer's argument has striking similarities with Schumpeter's. Both note the discontinuous character of the need for credit to drive economic development. Lederer stressed the importance of innovation in raising the demand for credit, since technical improvements are the main reason entrepreneurs want to borrow:

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. But . . . technical progress . . . may be regarded as the main cause of the demands for credit which arise. (Lederer, 1938, p. 230)

Both Schumpeter and Lederer consider credit, determined principally on the demand side of the market (i.e., the creation of credit money resulting from the demand for investment funds), to be indispensable for the functioning of capitalism. They linked credit creation with entrepreneurship and regarded it as a precondition for the introduction of innovations.

The two theoreticians' views on the nature of economic fluctuations also converge significantly. Schumpeter's well-known theory of the business cycle was based on the idea that the introduction of innovations into the production process provokes adjustments that are reflected in the recurrent economic fluctuations characterizing all industrial economies. He conceptualized business cycles as alternating disturbances of one equilibrium and returns to a new one.⁶

Lederer, too, attempted to provide a theoretical explanation of the business cycle. His central vision of business cycles as an endogenous phenomenon inseparably linked with the growth process of a capitalist society dominates his work. Lederer's conception of the business cycle in *Technical Progress and Unemployment* (1938) is very Schumpeterian. The initiation of a boom is explained by supply-side factors, and more specifically by technical change. Technical change is decomposed into two types, which have entirely different effects, namely 'rationalization' and 'inventions.'

The term 'inventions' was used by Lederer to describe 'technical innovations [that] 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

⁶In Schumpeter's analysis of business cycles, a prosperity phase begins when an entrepreneur introduces an innovation, which enables the firm to earn an extra (monopolistic) profit and stimulates the demand for credit in order to finance new investments. In turn, this produces a rise in prices and a general expansion. When the profit possibilities offered by innovative activity are exhausted, an economic downturn (the second phase of the cycle, recession) ensues. The decline continues because 'enterprises created . . . cannot stand the test administered by Recession' (Schumpeter, [1939] 1964, p. 122). Many firms are liquidated and production contracts; this marks the third phase (depression) of the Schumpeterian cycle. Depression continues until all investments are liquidated. Once this point is reached, a movement towards a new 'neighborhood of equilibrium' marks the fourth phase of the Schumpeterian cycle (i.e., revival).

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).

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. 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. 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. 233–244).

We have seen that for Lederer credit expansion was a necessary complement to new undertakings: '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.

Regarding the prospects of a revival that are reinforced through the course of the depression phase, Lederer explicitly mentioned the possibilities for 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 (Lederer, 1938, p. 227).

Despite Lederer's lack of a complete theoretical exposition of the phases and effects of the business cycle, he shared several common insights with Schumpeter. One theme they have in common was the role that unsound credit plays in causing the depression phase. Lederer warned that there are dangers inherent in the process of credit expansion that takes place in the prosperity 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 (1938, pp. 230–231), the inability to consolidate the provoked credit expansion from the savings (profits). The process described here has parallels with the depression phase in Schumpeter's schema, which is characterized by unsound credit and ill-founded undertakings. Both writers attributed this state to the uncertainty that prevails during booms and which may lead to erroneous expectations.

Another obvious similarity exists in the abstract model that both Lederer and Schumpeter used to describe the onset of the boom period. They both conceptualized a stationary economy without savings and unused reserves. The impulse that sets the system in motion is the application of innovations. Both writers made the simplifying assumption that these innovations will be implemented by the setting up of new enterprises and the building of new plants. The new enterprises demand new credit in order to finance their plans. Due to the assumptions concerning the initial state, the materialization of their business plans forces them to exercise a demand for producers' goods and labor. Prices of producer's goods and wages rise (wages will rise at a slower rate) and a shift of demand from consumers' to producers' goods will be observed, leading simultaneously to an increase in the price of consumers' goods (Diebolt, 2006, p. 10). Differential profits will be earned in the course of the prosperity period (Schumpeter, [1939] 1964, Vol. 1, pp. 130–138; Lederer, 1938, pp. 236–238).

Lederer's conceptualization of business cycles underwent discernable modification from the 1920s.⁷ In 'Konjunktur und Krisen,' Lederer (1925) had constructed an explanation consistent with the so-called 'disproportionality theory' introduced by Tugan-Baranowsky and later adopted by Hilferding and others (see Miliotis *et al.*, 2002, pp. 145–189). In this work, the boom period is set off by an increase in effective demand (in contrast to his 1938 thesis that technical change is the cause of economic fluctuations). Expansion of effective demand is attributed to the social groups with fixed incomes (i.e., public employees and renters).⁸ Credit creation follows as an essential component of the boom period. This

⁷Lederer's view of the role of the state in alleviating the impact of economic fluctuations also underwent a change after his emigration to the United States. He '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' (Mongioli, 2005, p. 431; see also Allgoewer, 2003, p. 337).

⁸Disproportional 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, he did not attribute a causative role

phase is characterized by an increase in prices, although this increase is disproportional in the various sectors of the economy: prices in the producers' goods sector will typically rise more compared with consumers' goods. In addition, wages will increase at lower rates than prices, so 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. On the assumption that profits are invested and wages are spent on consumption, the composition of demand will therefore shift so as to contain a larger proportion of investment goods relative to consumer goods than previously. The general trend will therefore be a disproportional growth rate between the sectors of producers' goods and consumers' goods. This discrepancy will be revealed at the turning point of the cycle when it will become clear that the growth that took place in the producers' goods sector is not matched by a corresponding growth in the demand for final goods.⁹

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

However, in his early explanation of the business cycle, Lederer is not very clear about what ultimately causes the boom period. Allgoewer (2003) 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. She interprets credit as an essential precondition but not as the ultimate cause of the cycle, whereas Moszkowska (1935) classified Lederer's analysis as a credit theory of the cycle. The different readings reflect the ambiguity of Lederer's discussion.

4. The Marxist Influences: Tugan-Baranowsky and Hilferding

In this section, the roots of some of Schumpeter's and Lederer's views are traced back to Mikhail Ivanovich Tugan-Baranowsky and Rudolf Hilferding. Tugan-Baranowsky formulated one of the earliest systematic analyses of the business cycle. He conceived of the cycle as an endogenous phenomenon and

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' (Schumpeter, 1954, p. 1133).

⁹For an insightful discussion of whether Lederer should be classified as an underconsumptionist see Allgoewer (2003).

his explanation of cyclical fluctuations emphasized the disproportional growth between the sectors of the economy. Tugan-Baranowsky also analyzed in detail the roles of technology and credit in a capitalist economy. Hilferding, in his best-known work *Finance Capital* ([1910] 1981), examined from a Marxian perspective the extension of credit money and the increasing importance of financial institutions. His ideas on the primacy of monopolies, cartels and the banking sector became a point of reference for German-speaking economists; some elements of Lederer's and Schumpeter's systems appear to stem from his conceptions. Disproportionalities also play a fundamental role in Hilferding's business cycle theory.

4.1. Tugan-Baranowsky

According to Schumpeter (1954, p. 1126), Tugan-Baranowsky 'was the most eminent Russian economist of' his time, whose work 'did make a mark and did exert influence far and wide.' Barnett (2004, p. 235) summarizes the character of Tugan-Baranowsky's work as follows: 'he attempted to combine an analysis of historical evolution with an account of economic structures and the formation of economic policy, and he paid particular attention to the social consequences of economic actions and illustrated his analysis with statistical data.' Tugan-Baranowsky (1894) formulated a theoretical analysis of economic development based on the reproduction schemas of Vol. II of Marx's *Capital* ([1883] 1993). In this work he put forth an extensive theoretically and empirically grounded critique of the underconsumptionist theory then predominant among Russian and German Marxists.

The only prerequisite for unimpeded expansion of a capitalist production system, according to Tugan-Baranowsky, is that the 'right' proportion be maintained between production in the two basic sectors (production of means of production and production of consumption goods):

The general view, which to a certain extent was also shared by Marx, that the poverty of the workers, i.e. of the great majority of the population, makes it impossible to realize the products of an ever expanding capitalist production, since it causes a decline in demand, is mistaken. ... Capitalist production creates its own market—consumption being only one of the moments of capitalist production. (Tugan-Baranowsky, 1894, p. 33; poorly translated in Luxemburg, 1971, p. 312)

The idea of unequal expansion rates between the two sectors of production is common to Tugan-Baranowsky and Lederer. Lederer's frequent references to Tugan-Baranowsky's works (e.g., in his 1925 article on business cycles) indicate that the Ukrainian economist had a certain degree of influence upon his work.

Probably the most fundamental difference between Tugan on the one hand, and Lederer and Schumpeter on the other, is that Tugan-Baranowsky adopted the absolute immiseration thesis reckoning a gradual deterioration of the standard of living of the working class (Miliotis *et al.*, 2002; Miliotis & Sotiropoulos, 2007). In contrast, both Lederer and Schumpeter believed that in the capitalist system crises are inseparably linked with economic growth and that every depression

phase results in a higher level of social product without any clear trend regarding the relative shares of wages and profits.

Tugan-Baranowsky viewed technology from a Marxian perspective and examined the relationship between technological progress and the rate of profit. He was critical of the law of the falling tendency of the rate of profit and attempted to substantiate the view that the introduction of technological innovations always results in a rise and never in a fall in the rate of profit. The increase in the rate of profit following mechanization of production is brought about by the increase in the productivity of labor and in the rate of surplus value, the later being effected by the reduction in the labor-value of variable capital (Milios *et al.*, 2002).

Credit and investment also play key roles in Tugan-Baranowsky's explanation of the business cycle. In a way that is similar to Lederer's 1925 business cycle theory, Tugan-Baranowsky had assigned a distinct economic role to the social groups whose income does not fluctuate during the different phases of the cycle. The savings of this part of the population lead to the accumulation of free loanable capital. However, the demand for free capital (i.e., credit, although not in the sense of *additional credit* as in Lederer's theory) is discontinuous and therein lies the actual cause of business cycles. During a recession phase, free capital lies idle in the banks and interest rates fall. This creates favorable conditions for investment and a moment is bound to come where a revival will occur, when demand for loanable funds increases again. Investment in physical capital, which has been accumulated during the depression phase, will have multiplier effects in the total economy. Expansion of the economy will take place, especially in the capital goods sector. The expansionary phase will come to an end when demand for capital exceeds supply. During the recession phase, the conditions for a new boom period will be re-created (see Colacchio, 2005, and Besomi, 2006, for further discussion).

Lederer and Tugan-Baranowsky share the view that a symptom of the upper-turning point of the cycle is that credit contracts. However, the explanation for credit contraction varies between the two authors. For Tugan-Baranowsky the contraction of credit is due to the disproportion between productive departments while Lederer attributes it to the decisions of banks in response to erosion of their profits.

Despite the profound similarities between their positions, Tugan-Baranowsky's assumption that savings remain idle in the banks during the recession phase provoked Lederer's criticism.¹⁰ According to Lederer, savings are invested during all phases of the business cycle. For Lederer, additional credit is what matters as far as the business cycle is concerned. Economic activity is not financed by the savings of the past as Tugan-Baranowsky's theory implies but only from additional credit, or new savings.

For Tugan-Baranowsky, capitalist crises are entirely the result of temporary disproportions between production in the capital goods and the consumption goods sectors: 'If social production is proportionately organized, there is no

¹⁰A thorough critical assessment of this aspect of Tugan-Baranowsky's analysis is provided in Barnett (2001).

limit to the expansion of the market other than the productive forces available' (cited in Luxemburg, 1971, p. 313). Thus:

The underconsumption of the popular masses can be an obstacle for the realization of the social product only insofar as it hinders a proportional distribution of the social production. Yet, the lack of proportionality is, also in this instance, the only cause of an insufficient demand. Therefore, one should not consider both, the lack of proportionality and underconsumption, as two particular causes of the crises since, strictly speaking, both are one and the same. (Tugan-Baranowsky, 2000, p. 86)

Lederer's theory of the business cycle is remarkably similar in many respects to Tugan-Baranowsky's approach. On the one hand, there is the idea of unequal expansion rates between the two sectors of production. Moreover, they both link this process with a redistribution of income from the working class to the capitalists (Barnett, 2001, p. 447). The role of credit is stressed by both theoreticians as an essential element of economic fluctuations. Furthermore, they share similar views in some other less central aspects. They both emphasize fluctuations in the prices of products in the heavy industries (both citing, specifically, the iron price as a business cycle indicator) and consider this phenomenon indicative for the initiation of the various phases of the cycle. Finally, they describe in a very similar manner the transmission mechanisms taking effect when a change in the price level propagates throughout the economy as a whole in a particular phase of the cycle.

Lederer differentiated his disproportionality theory from other explanations of the business cycle that come under the same heading, especially the one developed by Tugan-Baranowsky, on the grounds that they explain the differences in the expansion rates between the two main sectors of the economy as a result of absence of central planning in the capitalist system with respect to the growth process. In contrast, his theory conceptualized the emergence of disproportions as economically 'correct' and necessary for economic growth. Lederer ascribed the function of economic development to the capitalist class and thus the alteration in the income distribution during the boom period is a consequence of this fact. The disproportionality in the expansion rates of the two sectors is a reflection of this income redistribution. The partial re-establishment of the previous income shares of the different classes takes place in the crisis period when the rate of accumulation decreases.

Lederer referred to Tugan-Baranowsky's disproportionality theory when discussing policy measures for coping with economic crises. There he drew a parallel between the proposal for granting credit during the crisis period in order to sustain enterprises that are unable to withstand the decrease in profits, and Tugan-Baranowsky's view of an unimpeded expansion process conditioned only on the preservation of the right proportions between the two sectors of the economy. The affinity between such proposals and Tugan-Baranowsky's expansion process lies in their perception of the possibility of 'producing for the sake of production,' i.e., that a sufficient level of demand for consumers' goods is not a necessary condition for the expansion of the economic system. Lederer thought that the granting of such unlimited credit would have inflationary

effects, and would therefore be unsustainable by any credit system. He regarded Tugan-Baranowsky's vision as unrealistic for the reason that accumulation and individual consumption are not independent of one another (see Milios *et al.*, 2002; Milios & Sotiropoulos, 2007).¹¹

4.2. *Hilferding*

In *Finance Capital*, Hilferding ([1910] 1981) introduced the notion of a 'latest phase' of capitalism, characterized by: (a) the formation of monopolistic enterprises, which put aside competition; (b) the fusion of bank and industrial capital leading thus to the formation of finance capital, which was considered to be the ultimate form of capital; (c) the subordination of the state to monopolies and finance capital; and finally (d) the formation of a protectionist and expansionist policy (see Milios, 2001).¹² He foresaw a transformation of the capitalist economy, characterized by increasing concentration of capital. For Hilferding, economic development depends on large non-competitive enterprises, whose technological superiority derives from their ability to attain above-average profits (Michaelides & Milios, 2005).

Hilferding's hypothesis that perfect competition is an unstable market structure, while only large enterprises can push technological progress forward, anticipates the views of Schumpeter and Lederer conceptions. Schumpeter's arguments are well known. Lederer, in *Technical Progress and Unemployment* (1938, pp. 132–133) argued in a similar vein that:

owing to its command and knowledge of the market and its power of deciding freely and with full knowledge of the circumstances on the technique to be adopted, a monopoly will be better able to transfer its operations to a lower level of costs and prices than one operating under free competition [and] monopoly undertakings are still more likely to make the change when it involves heavy investment . . . and a very large expansion of output.

Lederer also believed that that concentration and cartelization would lead to stable market structures made necessary by modern production technology. However, in contrast to Schumpeter and Hilferding, Lederer thought that the cartelization of industry aggravates the depression phase of the business cycle due to the dampening of price fluctuations (Allgoewer, 2003, p. 333). Hilferding had

¹¹Allgoewer (2003, p. 331) points out another difference in the analyses of the two theoreticians: 'Lederer's business cycle is driven by demand: consumption spending out of fixed incomes stabilizes the economy in the depression and eventually leads to recovery. In Tugan the importance of fixed incomes lies in the continuous provision of savings during the business cycle. In the depression this leads to an accumulation of loanable funds; these will eventually induce renewed investment and lead to an expansion.'

¹²In this latest phase, according to Hilferding [(1910] 1981, p. 301), 'The previously separate spheres of industrial, commercial and bank capital are brought under the common direction of high finance, in which the masters of industry and of the banks are united in a close personal association . . . The basis of this association is the elimination of free competition among individual capitalists by the large monopolistic combines.'

developed a similar approach: ‘[T]he corporation can install new technology and labour saving processes before they come into general use, and hence produce on a large scale, and with improved, modern techniques, thus gaining an extra profit, as compared with the individually owned enterprise’ (Hilferding, [1910] 1981, pp. 123–124). Consequently, ‘The introduction of improved techniques ... [benefits] the tightly organized cartels and trusts. ... [T]he largest concerns introduce the improvements and expand their production’ (Hilferding, [1910] 1981, p. 233).

Hilferding also emphasized in his analysis the crucial role of ‘credit money.’ Credit money is a ‘private affair,’ not backed by the government (Hilferding, [1910] 1981, p. 66); it replaces money proper by a promise to pay.¹³ Lederer, as we have seen, recognized the essential function of credit money in facilitating the expansion of the economic system by enabling the introduction of new production processes when the chance for high profits occurs. The general adoption of non-cash payments increases the amount of transactions so that ‘although the amount of currency in circulation remains stationary, the active money supply rises’ (Lederer, 1938, p. 225).

Hilferding ([1910] 1981, p. 241) held that ‘such expressions as “overproduction of commodities” and “underconsumption” tell us very little’ about economic crises. He propounded a theory of economic fluctuations based on the notion of disproportionality crises. This disproportionality theory is based on a two-sector model with the difference in organic composition of capital between sectors producing a time lag structure in production and capacity expansion. This time lag structure in turn gives rise to an asymmetric price structure across the various sectors, which causes, in the end, a disruption in the proportionality relations required for smooth capital accumulation. Hilferding believed that if changes in prices are uniform then there is no redistribution of capital among the various sectors of economic activity and the conditions of smooth accumulation are satisfied. Consequently, if the increase in prices is non-uniform then crises occur. Again, as we have seen, Lederer, who was familiar with Hilferding’s work, based his 1925 business cycle analysis on the disproportions between producers’ and consumers’ goods production.

5. Hilferding and Tugan-Baranowsky versus Marx

Notwithstanding their shared Marxian foundations, the theories developed by Hilferding and Tugan-Baranowsky are original advances. Hilferding’s work

¹³Hilferding drew a distinction between ‘circulation credit’ (which enlarges the scale of transactions between capitalists) and ‘capital credit’ (which converts idle money into active money capital). When a promissory note functions as a means of payment, money capital has been saved, and this type of credit is called ‘circulation credit’ (Hilferding, [1910] 1981, p. 83). Capital credit is a transfer of money to those who use it as money capital, i.e., for the purpose of purchasing the elements of productive capital: credit ‘puts money into circulation as money capital in order to convert it into productive capital’ (Hilferding, [1910] 1981, p. 88); thus, the scale of circulation is enlarged by utilization of previously idle money.

represents a shift towards a microeconomic perspective, compared with Marx's macroeconomic approach. Tugan-Baranowsky diverges in significant ways from mainstream interpretations of the Marxian *oeuvre*. The influence they exerted on Schumpeter and Lederer can be traced to these advances.

5.1. Hilferding

All versions of Marxism until the publication of Hilferding's *Finance Capital* accepted an identical point of view concerning the relationship between the capitalist economy as a whole and the individual enterprise. This point of view was based on theses formulated by Marx, which reflected a 'macroeconomic' approach to the capitalist economy, according to which the 'laws' of the capitalist system stand at the level of the capitalist economy as a whole and are imposed as 'motives' on the individual elements of the economy. In other words, the immanent causal relationships governing the capitalist economy transform the totality of enterprises ('individual capitals') into elements of *social capital* (*Gesamtkapital*), i.e., they situate them within an economic system, which then exercises an influence on them (see Milios, 2000).

As individual capitals, enterprises intend to maximize their profit. However, this tendency is through competition subordinated to the laws inherent in the concept of social capital, and more specifically to the process of equalization of the rate of profit and the formation of a tendentially average profit rate. By introducing 'the elimination of free competition among individual capitalists by the large monopolistic combines' (Hilferding, [1910] 1981, p. 301), an idea that Lederer and Schumpeter also adopted, Hilferding replaced Marx's 'macroeconomic' approach with a 'microeconomic' view, according to which the characteristics of the individual capital shape the social capital and determine its patterns of evolution. Practically, we have here an inversion of the flow of cause and effect in the relationship between social capital and individual capital, which constitutes a shift within Marxian economic theory. With respect to the theory of 'monopoly capitalism,' Hilferding ([1910] 1981, p. 228) himself admitted that his vision was not compatible with Marx's value theory: 'It seems that the monopolistic combine, while it confirms Marx's theory of concentration, at the same time tends to undermine his theory of value.'

Contrary to Marx's approach, both Hilferding and Lederer considered monopolies to be a characteristic of modern capitalism; indeed, as we have seen, they both thought of monopolies as the decisive feature of capitalism, from which both innovation and growth originate.

Marx's sharp distinction between 'social capital' and 'individual capital' entails a very different understanding of the motive force of technical change in the capitalist enterprise from the one adopted by Hilferding and Lederer. In Marx's 'macroeconomic' perspective, technical change and innovation emerge from the regularities determining the capitalist system as a whole: innovation and technical change are the main means of increasing labor productivity. Consequently, production relations *per se* impose on all individual capitals the urge towards innovation and technical change. Innovation ensures on the one hand the increase in the rate of exploitation of labor by capital (i.e., production

of relative surplus-value), while on the other it is the means *par excellence* for improving the individual enterprise's position vis-à-vis its competitors (see for example Marx, [1867] 1990, p. 1037).

The outlook of Lederer and Hilferding clearly identifies the large-scale enterprise as the principal vehicle of technological progress. Things are much more complex with Marx's approach. From the abstract level of analysis, one may move to lower levels of abstraction, i.e., to more concrete objects of investigation, regarding specific capitalist societies, at certain economic conjunctures. It is at this lower level of abstraction that the question may be posed as to which sector of capital takes the lead of innovation and technical progress in a given situation. The answer is not clear-cut: within Marx's approach, the question of whether technical change is promoted by big or small firms cannot be answered on the general level of analysis, since it is situated on a lower level of investigation.

5.2. Tugan-Baranowsky

In this section, we will argue that Tugan-Baranowsky's approach allows a Keynesian reading of Marx's theory.¹⁴ Starting from the reproduction schemes from Volume 2 of *Capital*, Tugan-Baranowsky identified the conditions under which a capitalist economy could reproduce itself on an expanding scale. In Marx's model, Sector I produces means of production, and Sector II produces means of consumption. Tugan-Baranowsky argued that as long as Sector I products and Sector II products are in the appropriate proportions, there will be no problem with the realization of surplus value. Sector I demand for consumer goods realizes Sector II demand for capital goods, and vice versa. He concludes that even when Sector II contracts, the system is not endangered by underconsumption, since there will always be a suitable price for means of production that will enable the surplus product of Sector I to be absorbed. We arrive, in Tugan-Baranowsky's words, at the 'most important conclusion that in capitalist economy the demand for commodities is in a sense independent of the total volume of social consumption' (quoted in Luxemburg, 1971, p. 312).

In another formulation, Tugan-Baranowsky argued that it was disproportionality between the production of fixed (invested) and working (free) capital that caused crises to manifest themselves. Another way of conceiving of Tugan-Baranowsky's idea would be in relation to aggregate savings and investment. Tugan-Baranowsky (1914, p. 789) wrote that 'the principal part of loanable capital is the saved part of national income which is not invested where it originated.' For Tugan-Baranowsky the fundamental disproportion was the one between savings and investment. At every level of consumption, the national product may be sold and surplus value realized, on the condition that investment expenditure is

¹⁴Keynes, for his part, thought highly of Tugan-Baranowsky's work: 'I find myself in strong sympathy with the school of writers . . . of which Tugan-Baranovski was the first and most original, and especially with the form which the theory takes in the works of Tugan-Baranovski himself' (Keynes, 1930, Vol. 2, p. 100).

sufficiently high. However, a key feature of Tugan-Baranowsky's model is that it contains no mechanism to ensure that capitalists will in the long-run invest to the extent necessary to bring about full utilization of productive equipment. Thus, Tugan-Baranowsky pointed towards a Keynesian approach, according to which the origin of crises and destabilization of accumulation must be traced to the unequal distribution of purchasing power.

In the Keynesian system, autonomous investment is the main determinant of effective demand; effective demand in turn determines the level of output; and the level of output, in turn, determines real wages since the condition for maximizing profits at the prevailing level of aggregate output is that the real wage be equal to the marginal product of labor.¹⁵ But more than two decades before the publication of *The General Theory*, Keynes had been moving towards Tugan-Baranowsky's idea that a lack of free loanable funds caused economic crises. While Keynes doubted how such loanable funds could ever be 'free' he suggested that such funds were crucial. It was Keynes's thesis that investment in fixed capital was the underlying reason for crises and hence the cure was to slow down investments until savings caught up (Keynes, [1913] 1973). In *The General Theory*, Keynes (1936, p. 81) wrote that 'The prevalence of the idea that saving and investment ... can differ from one another is to be explained, I think, by an optical illusion due to regarding an individual depositor's relation to his bank as being a one-sided transaction.' He denied that savings could disappear into the banking system so that they were lost to investment. Moreover, 'up to the point of full employment, no amount of actual investment, however great, can exhaust and exceed the supply of savings, which will always exactly keep pace' (Keynes, 1937, p. 248). This is because an amount of saving sufficient to cover the new investment would be automatically created through a multiplier process from the incomes generated by the investment. In this respect, Keynes's *General Theory* could be regarded as an elaboration of Tugan-Baranowsky's conception that it was disproportionality between savings and investment that caused cyclical movement.

In contrast to the Keynesian view of business cycle as rooted entirely in investment, and independent of structures of ownership and control, most Marxist writers contend that economic crises and business cycles are endogenously generated by contradictions in the process of surplus value appropriation. But Marx wrote no systematic treatise on business cycles, and one finds only fragments of a crisis theory in his writings. Hence, many interpretations of the Marxist theory of business cycles have been put forth.

Following a (non-mainstream) Marxian approach that points to the totality of capitalism's internal contradictions as the 'absent cause' of crises, we may argue that for Marx the ultimate cause of an economic crisis is not 'lack of demand' but 'lack of surplus value.' In the process of capitalist accumulation, capital may be rendered 'unable to exploit labour at the level of exploitation that is required by the "healthy" and "normal" development of the capitalist production process'

¹⁵In other words, real wages are endogenously determined, in contrast to Marx's treatment of wages.

(Marx, [1894] 1991, p. 364). In this context, the fluctuations of the rate of profit during the business cycle could be considered as a reflection of the class structure of the capitalist society and, more precisely, as reflecting the effects of class antagonisms, and above all the class struggle between workers and capitalists. Within Marx's theoretical system, there is no single cause (such as disproportionality or underconsumption) behind crises and the cyclical process of capitalist accumulation; instead, these phenomena are explained by the totality of internal causal relations governing capitalist production: *all* the internal contradictions immanent in the capitalist mode of production could lead to economic crises and a downturn of the cycle.

In this respect, Tugan-Baranowsky's 'Keynesian' perspective, which gives causal priority to investment demand and which influenced Lederer's work, constitutes a break with Marx's own approach rather than an extension of it.

6. Conclusion

Both Schumpeter and Lederer regarded the capitalist economy as a dynamic system whose distinctive characteristic is the introduction of innovations. In such a system, a static analysis based on the concept of equilibrium is useful only as an expository device to describe the system's adjustment mechanisms. On a wide range of issues—the relation between industrial concentration and technological progress; the psychological factors that motivate entrepreneurial activity; the function of credit; and the endogeneity of cyclical fluctuations—Schumpeter and Lederer put forward analytical arguments that are similar in scope and conclusions.

The paper clarifies the influence of Hilferding and Tugan-Baranowsky on Schumpeter and Lederer. Hilferding's analysis in his *Finance Capital* constitutes a shift from Marx's 'macroeconomic' theoretical system towards a 'microeconomic' point of view that seeks causality in the individual enterprise. It is Hilferding's and not Marx's theoretical paradigm that is most closely related to the outlook of Schumpeter and Lederer. We have also seen that Lederer's understanding of crises has a close affinity to Tugan-Baranowsky's distinctively Keynesian reconstruction of Marx's crisis theory. Schumpeter and Lederer developed their theories in the same social, political, theoretical and ideological environment, and they were acquainted with each other's ideas. The similarities in their work were not coincidental, but were instead the outcome of cross-fertilization of their own ideas with insights drawn from Marx, Hilferding and Tugan-Baranowsky.

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