Kanazawa University,
Faculty of Economics and Management
Discussion Paper Series
No. 076

Towards the reconstruction of Schumpeter's credit theory of money

-Wicksell, Hahn, and the monetary circuit-

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26 May 2023

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Towards the reconstruction of Schumpeter's credit theory of money
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1. Introduction

The purpose of this study is to examine whether Schumpeter's theory of money and credit can be clearly located in the genealogy of the history of economics on the construction of monetary economic theory. To preemptively conclude, we propose that the trend "from Wicksell to Hahn and Schumpeter" can be clearly positioned apart from the "Wicksell Connection," which questions the connection from Wicksell to Keynes, as has been discussed in the past.

The background of this study is based on the following two issues. The first is that Schumpeter's theory of money and credit is the missing link in his system of economics. Based on previous studies, Schumpeter's unpublished book on money has so far been mainly a literature study, and it seems that studies that go into the contents of Schumpeter's theory of money and credit are still relatively insufficient. Therefore, this study partially attempts to reconstruct Schumpeter's theory of money and credit. Here, partial means to focus on the "credit theory of money. The second concerns Schumpeter's position in the genealogy of monetary economic theory. Although Schumpeter's theoretical system can be seen as finally completed in his business cycle theory, his business cycle theory is often typified as a real business cycle theory. However, it is credit creation by bankers that opens the door for entrepreneurs to carry out the new combination. Given that Schumpeter's theory of money and credit has not yet been published, it is not surprising that the realistic

aspect is emphasized. The above-mentioned issues and their background

Based on the above awareness of the problem and its background, this study adopts the method of examining the interrelationship or dissimilarity between Knut Wicksell and L. Albert Hahn in the theoretical aspects of Schumpeter's theory of money and credit in order to clarify the content of Schumpeter's theory. Wicksell, on the other hand, is a predecessor of Schumpeter, who, like Wicksell, started from Walras's general equilibrium theory and pioneered his own method to overcome (not to deny) the quantity theory of money. In considering the speed of circulation of money, Wicksell proceeded in three stages: a "pure cash economy," a "simple credit economy," and an "organized credit economy. His "pure credit money model" takes the same approach as Schumpeter's in that it starts with the creation of bank deposits. Hahn, on the other hand, was a leading German monetary and credit theorist of the same era as Schumpeter. Although they do not seem to have interacted directly with each other, it is certain that they influenced each other, as both mentioned each other's research. This study examines the similarities and differences between their theories of money and credit, relying on previous studies on Hahn.

The paper is organized as follows. Section 2 clarifies Schumpeter's theory of money and credit by relying on his major works. However, this section does not deal with the literature study on Schumpeter's unpublished "book on money. In section 3, we will focus on Wicksell and Hahn's monetary and credit theories, especially those related to Schumpeter's, and discuss the differences between them and Schumpeter's. Finally, we summarize the results of this study and discuss remaining research issues.

2. Schumpeter's Theory of Money and Credit

As is well known, Schumpeter emphasized "entrepreneurs, new

combinations, and credit creation" as the driving forces of capitalist development[1]. Traditionally, "new combinations" have been particularly highlighted as one of the driving forces that bring about economic growth and development. And in the current debate on innovation in Japan, the relative focus seems to be exclusively on "entrepreneurs, new combinations," with "credit creation" being relatively neglected. This seems to be one of the reasons why innovation is less likely to occur in Japan, and why the country has lost its former economic vitality. Of the three driving forces mentioned above, Schumpeter specifically identified credit (purchasing power, means of payment) creation by bankers, not entrepreneurs, as "capitalist[2]." This is the new element in the development process and the key to making the practice of new combinations by entrepreneurs a reality[3].

However, the theory of money and credit is one of the missing links in Schumpeter's system of economics, as he never published his book on money, which was one of his lifelong research themes. Previous studies have focused on literature studies, especially on Schumpeter's posthumous works, and many results have been obtained[4]. This study takes the results of such literature studies and attempts to develop the content of his theory of money and credit from them.

2.1 Theory of Money and Credit

As is well known, the structure of Schumpeter's system of economics is characterized by the static-dynamic dichotomy and its integration. In addition,

[1] Shionoya (1997), p. 163. Shionoya states that each corresponds to the "subject, cause, and means" function of the new union.
[2] Schumpeter (1934), pp. 69-70.
[3] Ibid, pp. 74, 107.
[4] Beginning with Marget (1951), who worked with E.B. Schumpeter to organize the manuscripts, the research results were generally established in Berti and Messori eds. (1996). See also Earley (1994), Messori (2003), and Lakomski-Laguerre (2016).

another dichotomy of note is that of real and monetary analysis. With regard to this latter dichotomy, according to Schumpeter (1954), on the one hand, real analysis "proceeds from the principle that all the essential phenomena of economic life are capable of being described in terms of goods and services, of decisions about them, and of relations between them" (p. 264). Money in this real analysis is merely a technical device to facilitate exchange and, therefore, has no influence on the economic process. A barter economy is assumed there, and money is merely a neutral veil.

On the other hand, monetary analysis is said to have the following four characteristics (pp. 265-267):

1. Monetary Analysis, in the first place, spells denial of the proposition that, with the exception of what may be called monetary disorders, the element of money is of secondary importance in the explanation of the economic process of reality.
2. Monetary Analysis introduces the element of money on the very ground floor of our analytic structure and abandons the idea that all essential features of economic life can be represented by a barter-economy model.
3. [I]t means in addition Aggregative Analysis or, as it is sometimes called, Macroanalysis, that is to say, analysis that attempts to reduce the variables of the economic system to a small number of social aggregates, such as total income, total consumption, total investment, and the like.
4. Monetary Analysis is associated, not by logical necessity but nevertheless closely, with a characteristic set of views about Spending and Saving and, in connection with these, about monetary and fiscal policy.

Monetary analysis is therefore an analysis of the neutral veil itself. Furthermore, it is thought to refer to an integrated analysis of the real economy and the monetary economy with money as the axis, so that the

interrelationship with the real economy is also analyzed through money. This focus on monetary analysis is considered to have the same purpose as that of Keynes' "A Monetary Theory of Production" (1933). In any case, Schumpeter clearly distinguishes between the two and points out that real analysis has occupied a central position in conventional economics and that behind the triumph of such real analysis was the "weakness" (Schumpeter 1954, p. 274) of monetary analysis.

How, then, did Schumpeter himself develop monetary analysis? It is known that the monetary problem was Schumpeter's two major research themes during his lifetime, along with business cycles, but that he ultimately failed to complete his work. What is known from posthumous studies of Schumpeter's monetary and credit theory is that he applied the static-dynamic dichotomy to monetary analysis as well[5], calling it "monetary theory of credit" and "credit theory of money," respectively.

On the other hand, the static "monetary theory of credit" includes credit in money, and is based on Schumpeter's own modification of the quantity theory of money, which he considered the only available monetary theory at the time. The static state, as the object of analysis, is an economic process viewed from a purely economic perspective, based on Walras's general equilibrium theory as a circular flow[6] in which the interdependence of the exchange of goods and services is reproduced every year with a certain regularity. It is a technical function for the quantity of goods in the circulation economy. Schumpeter's definition of money is based on two criteria: (1) whether or not money is in

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[5] For primary references to Schumpeter's unfinished book, see Schumpeter (1917-18/1956), (1970/2014) and Berti e Messori (1996).

[6] This can be seen as the introduction of time into Walras' general equilibrium system. It can also be considered as the equivalent of Marx's simple reproduction equation. However, one of the uniqueness of Schumpeter's cyclical flow is that he considered such a process as a "stationary process" that proceeds with a certain degree of fluctuation within a "neighborhood of equilibrium.

circulation and (2) whether or not money has a correspondence with social products. He then included "normal credit," which functions as a monetary substitute for offsetting credits and debts, in money. This is the reason why it is called the "monetary theory of credit. In order to apply the quantity theory of money to the monetary analysis of cyclical flows, Schumpeter modified the so-called Fisher's exchange equation to see it as the correspondence between aggregate income and social products (the sum of the prices of consumer goods consumed in a given period and their quantities). Such a social accounting approach is unique in that it clarifies the social cycle in which what is produced is spent through distribution and provides clues for analyzing the purchasing power of income units[7].

As for the "credit theory of money" in the other dynamic, Schumpeter only pointed out its importance, and his writing stopped before any concrete development. However, a few fragmentary references are noteworthy, such as the following suggestion in chapter 9 of Schumpeter (1917-18/1956):

> The monetary process, the creation of money which is only a "claim ticket" and not also a "receipt voucher", and the rise in prices to which it leads, become a powerful lever of economic development. The essence of modern credit lies in the creation of such money. It is the specifically capitalistic method of effecting economic progress. It gives scope to the capitalistic function of money, as opposed to its market-economy function. (p. 206)

This quote indicates that the "capitalist function of money," centering on the creation of money in the dynamic (development process), was to be developed beyond the "mere circulating economic function of money. The difference between these two functions is also discussed as follows.

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[7] Indeed, this perspective is also mentioned in Graziani (2003), one of the leading literature on monetary circuit theory.

> ... logically, it is by no means clear that the most useful method is to start from the coin—even if, making a concession to realism, we add inconvertible government paper—in order to proceed to the credit transactions of reality. It may be more useful to start from these in the first place, to look upon capitalist finance as a clearing system that cancels claims and debts and carries forward the differences—so that 'money' payments come in only as a special case without any particularly fundamental importance. In other words: practically and analytically, a credit theory of money is possibly preferable to a monetary theory of credit.. (Schumpeter 1954, p. 686)

The superiority of the "credit theory of money" over the "monetary theory of credit" is clearly expressed here[8]. To summarize the difference between the two again, in the "monetary theory of credit," credit is literally included in money. It is "ordinary credit" as a monetary substitute that offsets the creditor-debt relationship, and appears as the "intermediary function of banks. In contrast, the "credit theory of money" fully introduces credit as a claim to social products. It is "exceptional credit" that deviates from cyclical flows and causes endogenous changes in the economy, and its specific form is the "credit-creating function of banks. Thus, credit creation, which makes access to credit possible, is the "capitalist function of money," and this is why Schumpeter made the analysis of credit the mainstay of capitalism[9].

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[8] Applying these concepts, Schumpeter assessed monetary theory in economics up to that time as follows. "The English leaders from Thornton to Mill did explore the credit structure, and in doing so made discoveries that constitute their chief contributions to monetary analysis but could not be adequately stated in terms of the monetary theory of credit. But they failed to go through with the theoretical implications of these discoveries, that is, to build up a systematic credit theory of money." (Schumpeter 1954, 687)

[9] 'Credit' operations of whatever shape or kind do affect the working of the

2.2 Schumpeter's Theory of Credit and Credit Creation

First, let us review the content and form of Schumpeter's concept of credit. Schumpeter's clear definition of credit is as follows.

> [C]redit is essentially the creation of purchasing power for the purpose of transferring it to the entrepreneur, but not simply the transfer of existing purchasing power. (Schumpeter 1934, p. 107)

Schumpeter defines credit as purchasing power (means of payment, means of circulation). This means of credit payment can be in any form. For example, the issuance of banknotes or the entry of a balance, called a deposit, on a ledger sheet. However, what is meant by the various externals is a bill of instruction by which consumer goods can be directly procured. These are not certificates for production already performed, i.e., for past usages or existing goods, but for future usages or goods to be produced in the future. Schumpeter distinguishes the former by calling it "normal credit" and the latter "abnormal credit" (Ibid., p. 101). From this it follows that

> [H]e [the entrepreneur] can only become an entrepreneur by previously becoming a debtor. He becomes a debtor in consequence of the logic of the process of development, or, to put it in still another way, his becoming a debtor arises from the necessity of the case and is not something abnormal, an accidental event to be explained by particular circumstances. What he

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monetary system; more important, they do affect the working of the capitalist engine—so much so as to become an essential part of it without which the rest cannot be understood at all. This is what economists discovered in the seventeenth century and tried to work out in the eighteenth: it was then that capitalism was analytically discovered or, as we may also say, discovered or became analytically conscious of itself. (Ibid., 302)

first wants is credit. Before he requires any goods whatever, he requires purchasing power. He is the typical debtor in capitalist society. (Ibid., p. 102, [ ] is by the author)

The point that the entrepreneur is a debtor in relation to the bank (banker) is instructive for the debate over modern monetary theory (MMT). This implies that the created balances or banknotes must eventually be redeemed with legal tender or something independent of the bank's actions. This limits the bank's ability to create credit out of nothing. The fact that a bank, which can create credit out of nothing, will end up losing money if it ignores the limit in response to a flood of credit demand by the borrower firms, guarantees that the bank's credit creation is limited.

Next, for Schumpeter, credit creation " not only recognizes patent facts without obscuring them by artificial constructions; it also brings out the peculiar mechanism of saving and investment that is characteristic of fullfledged capitalist society and the true role of banks in capitalist evolution " (Schumpeter, 1954, p. 1080). In other words, it is the creation of credit by bankers that makes the practice of new combinations by entrepreneurs capitalist, that is, monetary capital created exclusively for them, according to their own volition, as a means of payment available at any time to realize changes in the use of the factors of production currently in use.

This capitalist function of money (money capital), credit creation, is discussed in some depth by Schumpeter in chapter 14 of his last book and in the appendix. The characteristics of credit creation are summarized in the following three points. First, since created credit has no correspondence with existing goods and services, there is an imbalance in the social clearing system in the cyclical flow. The introduction of additional means of payment into the system is considered essential for the realization of new production that deviates from the neighborhood of equilibrium and initiates a development

process. Second, the expansion of credit in response to the additional demand for funds by entrepreneurs takes the form of the creation of deposit balances. That is, the additional means of payment will be made available through the provision of bank credit and thus money as a newly created claim that performs the same function. And third, since there is no change in the quantity of goods and services at the time the new credit is created, there is an excess of means of payment within the economy, and thus credit inflation occurs. Schumpeter holds that the availability of money as a claim does not guarantee an earlier personal and material contribution to economic activity, but instead allows participation in the national dividend before any goods and services are brought forth. To illustrate these features in detail, the appendix traces the movement of credit money, using the balance sheet of a banking organization as an example. This accounting approach can be seen as a precursor to the analytical methods that can be used in modern monetary theory.

3. Dialogue with Wicksell and Hahn

3.1 Wicksell and Schumpeter

As a comprehensive primary literature on Wicksell's theory of money and credit, this section should refer to *Interest and Prices* and the second volume of *Lectures on Political Economy*. Wicksell's approach consists of three stages. The first is the "real economy as a preparatory stage for the monetary economy. This is not a simple barter economy, but a perfect market economy (a market economy so organized that money does not need to exist) in which money (credit), if it exists, plays only a completely non-essential role. In this economy, the measure of value is arbitrary. The second is the "simple credit economy. " This is an economy in which credit exists but still functions only under ideal conditions. Here the value scale is specified. The third is the "organized credit economy. The third is the "organized credit economy," in which the credit

economy, including the banking function, is considered, and the unique role of Shenyang is discussed.

In organizing the economy envisioned by Wicksell, the "real economy (functioning without money)" and the "simple credit economy" are treated together, since there is no real difference between the two if the issue of the general price level is reserved. In such an economy, the value system performs a coordinating function for information transmission and clearing without monetary substance. On the basis of the real economy, an economy in which credit plays an important role is constructed by adding entrepreneurs as investment entities, capitalists as savings entities, and the banking sector. The real economy assumes a production process under a steady state (i.e., the same conditions regarding capital, labor, and output are maintained throughout time) from the input of the primary factors of production (labor, land, and other rent goods) to the final product[10]. It should be noted here that Wicksell clearly introduces the entrepreneur in the real economy, who does not exist in Schumpeter's steady state. Here, Wicksell's entrepreneurs borrow investment capital from capitalists in the form of consumption goods, which they then use to purchase the factors of production. In contrast, the sellers, the laborers and landowners, do not receive compensation for the direct consumption of those consumption goods. In other words, the suppliers of the factors of production receive the consumption goods they receive from the entrepreneur as incarnations of purchasing power that can be exchanged for other consumption goods, and they can sell the consumption goods they receive on the market to purchase the goods they desire. Furthermore, to satisfy the capitalist's ultimate list of demanded goods, the entrepreneur can sell the output he produces on the market and purchase the goods he needs to repay the capitalist. For this situation to be valid, equilibrium prices must be simultaneously determined to

[10] The issue of the lack of one equation has been actively discussed as a problem in constructing Wicksell's real economic system using equations.

reflect the consumption demands of the provider of the factors of production and the capitalist when loan contracts are concluded under the natural rate of interest, which is one of the core elements of Wicksell's theory.

Further discussion here shows that the entrepreneur does not necessarily need to directly obtain the consumption good when he applies to borrow from the capitalist. In other words, he only needs to obtain a certificate of deposit (a transaction certificate) with which he can freely dispose of the consumption goods, and with which he can pay the substance of wages to the workers. The worker can buy and sell the consumer good backed by the certificate of deposit. In this case, the capitalist functions as a temporary custodian of the consumer good and as its trader. Similarly, the entrepreneur can pay the capitalist with the deposit corresponding to his output when he repays his loan. In the end, what is needed in a real economy is not a loan in kind, but the transfer of purchasing power that occurs in a loan-loan relationship. If we call what purchasing power symbolizes credit, we can say that, compared to the simple credit economy, this is only a difference in the scale of value, whether it is in units of wages or in units of money (credit), and that in essence they are the same economy.

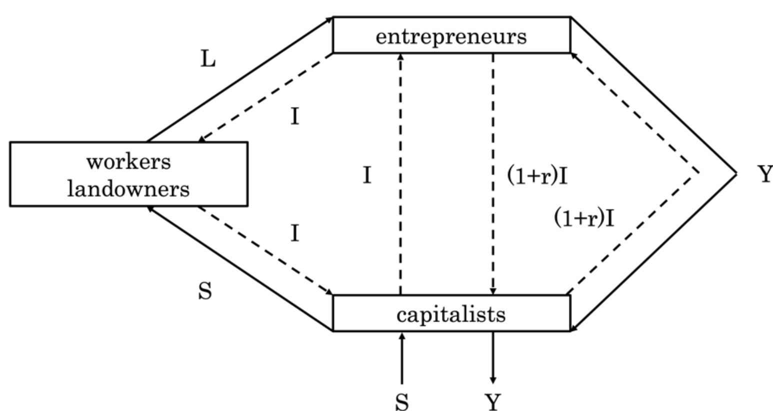

Fig. 1: Wicksellian simple credit economy

Wicksell's simple credit economy can be represented as in Figure 1. The process proceeds as follows. Assuming steady-state conditions, the capitalist lends the consumer good S accumulated in the previous period to the entrepreneur. Let I be the amount of its value, the entrepreneur uses it to purchase the factors of production. The supplier of the factors of production purchases the consumption good directly from the capitalist with the income earned. Overall, savings S are transferred to the factor of production supplier for consumption. Next, production begins, and when the final product is produced, the entrepreneur repays the sum of principal and interest to the capitalist, who then uses it to demand the good. Finally, output Y remains in the hands of the capitalist, who consumes part of it for his own consumption and saves the rest.

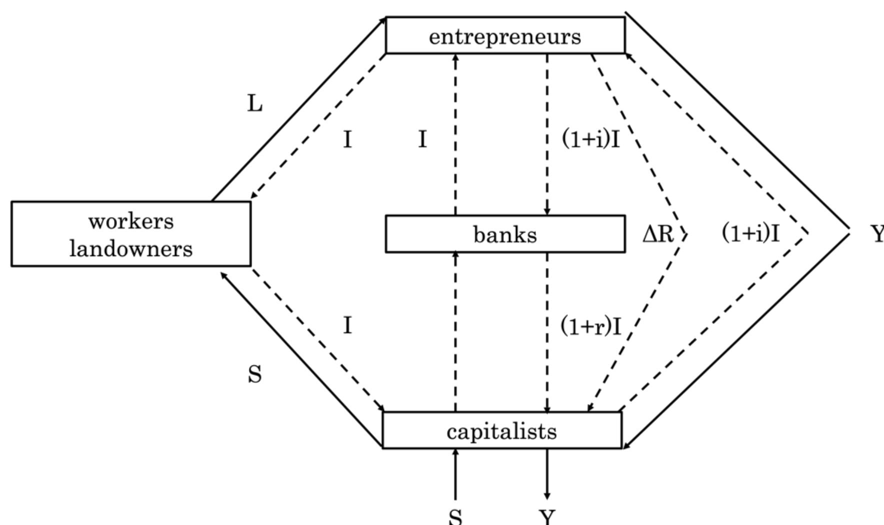

Fig. 2: Wicksellian organized credit economy

Wicksell placed the natural (normal) rate of interest and the money rate of

interest at the center of his theory of money and credit[11]. In a simple credit economy, the former is defined as the rate of return on capital expected to be earned by using the goods and services purchased through borrowing for production, while the latter is the rate of interest established in the loan market. In a simple credit economy, the divergence between the two is temporary and equalizes without requiring a change in the general price level.

The simple credit economy can then be extended to an organized credit economy by adding banks. There, the equality of the natural rate of interest and the money (bank) rate of interest simply cannot be established[12]. The bank can determine the rate of interest at its discretion as long as the inflows and outflows of funds are just balanced, and it can respond to the borrowers' demand for funds in an elastic manner. Such an organized economy can be represented as shown in Figure 2. The process proceeds as follows. To start production activities, the entrepreneur receives a loan I from the bank at the money interest rate i and uses the funds to purchase the factors of production L. The suppliers of the factors of production purchase and consume goods S from the capitalist with the income I earned. The capitalist deposits the proceeds I in the bank. At the end of production, the bank pays the capitalist the sum of principal and interest $(1+r)I$. The capitalist purchases output Y from the entrepreneur for reinvestment in the next period. The entrepreneur repays the bank the loan $(1+i)I$ including interest. Thus, as in a simple credit economy, the starting point is the goods saved by the capitalist at the end of the previous

[11] Wicksell is said to have made a significant change in the concept of the natural rate of interest between *Interest and Prices* and *Lectures-II*. The former, also known as the real rate of interest, was defined as the equilibrium rate of interest " which would be determined by supply and demand if no use were made of money and all lending were effected in the form of real capital goods " (Wicksell 1936/1962, p. 102). The latter, on the other hand, using the name normal rate of interest, was defined as " the rate at which the demand for new capital is exactly covered by simultaneous savings " (Ibid., p. xiii).
[12] Ibid., p. 194.

period, and the output remains with the capitalist at the end of production.

Wicksell considered "monetary equilibrium" to be defined by the equivalence of the following three propositions. (1) the rate of interest on money is equal to the natural (normal) rate of interest, (2) the demand for and supply of new capital goods (gross investment and savings) coincide, and (3) the equilibrium is neutral to the general price level and does not cause fluctuations. The significance of this monetary equilibrium is that when the system deviates from the equilibrium point, fluctuations in the general price level begin to accumulate. The existence of excess profit ΔR is essential for this deviation. In addition, the invariance of the production period plays an important role in reproducing and maintaining the cumulative fluctuations.

Now, I would like to examine the differences between the above-mentioned development of Wicksell's credit theory and Schumpeter's credit theory discussed in the previous section. First, in order to consider the macroeconomic situation of the economic system, both authors adopt a stepwise method to distinguish between cases in which credit does not play an essential role, i.e., where money and credit play the same role, and cases in which credit triggers an essential function and brings about the dynamics of the economic system. In other words, in Wicksell, the real economy is the one in which credit plays the same role as money. In other words, in Wicksell, it is the distinction between real and simple credit economies and organized credit economies, and in Schumpeter, it is the distinction between static and dynamic, or real and monetary analysis. Second, in their definitions of credit, both focus on the function of money and credit as purchasing power. Third, both of them developed their theories of money and credit from a macroeconomic perspective, especially in the context of business cycles.

In terms of the differences between the two, first, we can point out the difference in their conception of interest. In Wicksell's theory of money and credit, the relationship between the natural (normal) rate of interest and other

rates of money or bank interest is the most important theoretical element in examining the dynamics of the economic system, especially fluctuations in the price level. Schumpeter's interest rate, on the other hand, first appeared in the process of economic development. Moreover, it is a phenomenon that emerges through the implementation of new combinations of firms triggered by the creation of credit by banks. This is why Schumpeter's interest theory is called dynamic interest theory. The second difference that arises from this is the position of the entrepreneur. Wicksell, in constructing his credit economic model, assumed the entrepreneur as a component from the beginning. For Schumpeter, entrepreneurs exist only potentially in the economic static state, and they only start to function in the development process. In other words, Wicksell's entrepreneur is synonymous with a simple producer who makes investment decisions, which is essentially different from Schumpeter's entrepreneur. Hence, we can say that there is a significant difference in their focus with respect to the positioning of the role played by innovation in the economic system.

3.2 Hahn and Schumpeter

L. Albert Hahn (1889-1968) is positioned as the leading German monetary and credit theorist of his time, contemporary with Schumpeter. Compared to Schumpeter, however, Hahn would be considered a "forgotten economist" in the history of economics. Although there seems to have been no direct interaction between them, their careers have many points in common. First, they share a particular emphasis on the role of credit creation in economic development. Second, their backgrounds seem to be related to the fact that they both experienced both the academic world and the practical world of banking. Hahn was born into a banking family and entered the academic world of economics from the world of banking practice, while Schumpeter formed his own economics system in the academic world while making use of his temporary

experience in government and banking practice[13]. Furthermore, while both of them were strongly aware of Keynes, they were unable to surpass Keynes in terms of the influence of their doctrines. However, Schumpeter, on the other hand, had already established his own economic system early in his career, and he trained many prominent followers, and although he did not form the Schumpeterian school, he left significant guidance, especially to the modern heterodox economics, while Hahn, on the other hand, was an economist in the field, and his position and arguments against Keynesian economics in particular were not widely understood. In any case, there is no doubt that Schumpeter and Hahn have provided the world with important perspectives in the area of credit theory.

Hahn's distinctive argument, especially in his *Economic Theory of Bank Credit* (1920), was that banks were producers of credit unconstrained by savings, and that capital was the result of credit creation rather than the result of savings. And that the main function of credit is to finance the development process (Hahn 1920, p. 120). As noted earlier, such an argument is identical to Schumpeter's theory of credit and credit creation. Hence, Ellis (1934) combines both credit theories and calls it the "Schumpeter-Hahn-type business cycle theory"; Hagemann (2014) examines this Ellis proposal and rejects the designation that so strongly associates them (pp. 325-326). Indeed, while Schumpeter and Hahn refer to each other in their respective books, Schumpeter makes less reference to Hahn's work in his early and later works[14].

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[13] On Hahn's review biography, see Hesse (2007) and Hagemann (2015a, 2015b). As for Schumpeter's review biography, there are many references, but this paper relies in particular on McCraw (2007).

[14] Schumpeter (1954), for example, provides an objective analysis of Hahn's radical views in that " [o]ne reason why this book left so many economists unconvinced was, however, the fact that the theory of bank credit there presented was wedded to certain highly optimistic views about the possibility of achieving permanent prosperity, which prejudiced some economists against its essential achievement." (p. 1082, n. 10)

But are their claims irrelevant, even to the point of outright denial? In this study, we revisit this question in light of Hagemann (2014).

First, Hahn's view on credit turned the then (and even now) prevailing notion that credit depends on the bank deposits of the people upside down. He positioned the formation of bank deposits as the result of the derivation of capital formation from the provision of credit by banks, as Wicksell and others in the banking school had pointed out. He then positioned his own approach as a monetary business cycle theory based on the credit theory of production. In other words, credit is a precondition for commodity production and capital formation in the economy. Next, he also refuted the interest theory represented by Gustav Cassel, arguing that the rate of interest had only a marginal effect on savings (Hahn 1920, p. 154, n. 147). Hahn accordingly focused on the effect of income fluctuations on savings instead of the rate of interest. Furthermore, he positioned the government as a privileged debtor and argued that it could prevent the end of prosperity on the grounds that the payment of interest on borrowing could be transferred to taxpayers, so that the government did not have to consider the burden of interest payments as private individuals did. This is connected to his argument of the possibility of a "permanent boom" (ibid., p. 159). This is described in Ellis (1934) as the "apotheosis of credit creation" (p. 329). Finally, in the revised third edition of *Economic Theory of Bank Credit* (1930), Hahn's arguments were toned down from the earlier radical ones, warning not of a "permanent boom" but of the danger of inflation caused by excessive credit expansion [15]. There, following Schumpeter's distinction between "normal credit" and "abnormal credit," the argument distinguished between "non-inflationary credit," which relied on economy-wide savings, and "inflationary credit," which exceeded savings through bank credit creation (Hahn 1930, p. xix).

[15] According to Hagemann, this change in assertion has been seen since Hahn (1923).

We shall now revisit the validity of the "Schumpeter-Hahn-type" qualifier. First, both Schumpeter and Hahn acknowledge the special significance of credit creation in economic development (or business cycles). However, while Schumpeter clearly indicates that newly created credit is used for new combinations of entrepreneurs, Hahn does not clearly distinguish whether credit is used for investment or consumption purposes. Therefore, Schumpeter had to distance himself from Hahn (Hagemann 2014, p. 323). Second, Schumpeter and Hahn also differ in their views on the impact of credit on economic development (ibid., 324-325). Schumpeter emphasized the selection function of waves of economic development and economic crises, whereas Hahn emphasized that credit is a driving force for economic development by fully utilizing the factors of production of the economy (state), even at the cost of relative deprivation from money owners. In other words, while Schumpeter positioned credit as a passive role in the business cycle, Hahn specifically emphasized the significance of credit policy. In this sense, Schumpeter's business cycle theory can be distinguished as a real theory and Hahn's as a monetary theory.

4. Conclusion

In this study, we have examined the necessary elements and their complementarity through the dialogue between Wicksell and Hahn in order to reconstruct the theoretical content of the "credit theory of money," which Schumpeter was unable to complete. Finally, some implications are presented.

- Wicksell, Hahn, and Schumpeter all saw credit as the driving force behind the dynamics of the economic system (cumulative disequilibrium).
- In the dialogue between Wicksell and Schumpeter, it became clear that they shared a dichotomous approach between an economy in which credit

has no special function (the simple credit economy, the economic statics) and an economy in which credit plays a decisive role (the organized credit economy, the economic dynamics). In the subsequent Wicksellian and Schumpeterian studies, while the former was oriented toward a positive formulation as a macroeconomic framework and accumulated theoretical results, the latter seems to have relatively few results that have been developed into concrete business cycle models In this sense, the "theory of monetary credit" is a good example of the "theory of monetary policy. In this sense, there seems to be a great deal to be gained from Wicksell's macroeconomic model for the theoretical development of a "credit theory of money.

- In the dialogue between Hahn and Schumpeter, there is no significant difference between them in terms of the essence of the concept of credit and its credit creation function. However, in the framework of business cycle theory, the modification of their arguments, especially as seen in Hahn's revision of *Economic Theory of Bank Credit*, was the catalyst for the distance between the two. Thus, while we can agree with Hagemann's rejection of the Schumpeter-Hahn-type "business cycle theory," we can maintain that with respect to the Schumpeter-Hahn-type "credit theory.
- Finally, Wicksell, Schumpeter, and Hahn differ in the degree to which of the real and monetary analyses they focus on. However, there is no doubt that all three of them were trying to construct an economic theory that could deal with both the real and monetary aspects of business cycles, which are macroeconomic phenomena. Therefore, as a future research direction, I would like to explore the possibility of integrating the achievements of the three economists, especially in monetary circuit theory since the 1980s.

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