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Schumpeter's paradox reconsidered: The need for a theory of circular flow

Takashi Seo

Abstract

This study focuses on the well-known theme of Schumpeter's system of economic theory. Specifically, the study discusses Schumpeter's paradoxical stance on Walras' general equilibrium theory, which Louçã (1997) called Schumpeter's paradox. We reconsider the significance of the notion of circular flow in business cycle theory, after recognising the continuity from static to dynamic theory, and then to business cycle theory that integrates these theories. In doing so, we focus on the fact that Schumpeter called the equilibrium in the cyclical process a circular flow or a stationary process and proposed his own concept of neighbourhoods of equilibrium, which was not found in Walras' general equilibrium theory. Through such an analysis, we propose that Schumpeter's paradox is eased to some degree and that the theory of circular flow should be explored further.

JEL Codes: B25, B31, B41, E32

Key Words: Schumpeter, Walras, Kuznets, Business cycles, Circular flow, General equilibrium, Neighbourhood of equilibrium

1 Introduction

In this study, we focus on Schumpeter's system of economic theory. Specifically, we refer to Schumpeter's paradoxical stance on Walras' general equilibrium theory, which Louçã (1997) called Schumpeter's paradox.¹ Schumpeter's system of economic theory is known to have a dichotomous structure with static and dynamic theories as its pillars, which were greatly influenced by Léon Walras and Karl Marx, respectively². So far, scholars have focused on dynamic theory, which is based on the implementation of new combinations (innovations in a broad sense), and static theory has often been criticised and not properly evaluated in terms of its position in Schumpeter's system of economic theory. One of the best examples of this is business cycle theory, which is considered one of the two major research themes of Schumpeter's life³.

In this study, we reconsider the significance of the notion of circular flow in business cycle theory, after recognising the continuity from the static theory to the dynamic theory, and then to the business cycle theory that integrates these theories. In doing so, we focus on the fact that Schumpeter called the equilibrium in the cyclical process a circular flow or a stationary process and proposed his concept of neighbourhoods of equilibrium, which was not found in Walras' general equilibrium theory. Through such an analysis, we propose that Schumpeter's paradox is eased to some degree, and we indicate a move towards building the theory of 'circular flow'.

The remainder of this paper is organised as follows. In Section 2, we examine Louçã's concept of Schumpeter's paradox. Based on Schumpeter's works and previous studies which focused on the relationship between Walras and Schumpeter, we reconsider how Schumpeter accepted Walras' general equilibrium theory and how he situated it in his economic theory. In Section 3, we discuss how the theory of stationary processes (static theory) and the theory of development

¹ Relying on various paradoxical aspects of Schumpeter's life, mentioned in Allen (1991), Francisco Louçã called Schumpeter's paradoxical acceptance of Walras' general equilibrium theory Schumpeter's paradox. See Louçã (1997), chap. 13.

² The most explicit reference to this by Schumpeter himself is in Schumpeter (1937).

³ McCraw (2007, p. 498) pointed out that two dominant research topics during much of Schumpeter's life were money and business cycle.

processes (dynamic theory) are interrelated in Schumpeter's business cycle theory by focusing on Simon Kuznets' articles. In Section 4, by examining Schumpeter's notion of neighbourhoods of equilibrium and Kuznets' article, we propose a direction for the construction of the theory of circular flow. Section 5 summarises the study.

2 Schumpeter's paradox revisited

Rosenberg (1994) praised Schumpeter as the most radical economist of the 20th century. Relying on Schumpeter's *Capitalism, Socialism, and Democracy* (1942) and Preface to the Japanese edition of *Theorie der wirtschaftlichen Entwicklung* (1937) in particular, he positioned Schumpeter as a critic of neoclassical economics, which simplifies analysis to rational decision-making and the equilibrium by reducing technological and institutional change to the *ceteris paribus* conditions. If we follow his statement, then the question of why Schumpeter broke away from the neoclassical paradigm arises. However, Schumpeter continued to adhere to the framework of equilibrium theory in his writings. Louçã (1997) called this duality of Schumpeter – as both a critic and an acceptor of the equilibrium theory – Schumpeter's paradox⁴.

This paradox has been repeatedly examined by scholars from perspectives of the relationship between Walras and Schumpeter and the validity of the dichotomy between statics and dynamics. In this section, we re-examine Schumpeter's attitude toward Walras' general equilibrium theory.

2.1 Walras and Schumpeter

At the University of Vienna, Schumpeter studied economics in an academic environment that naturally led him to the general equilibrium theory under the tutelage of Friedrich F. von Wieser and Eugen Böhm-Bawerk⁵. However, economics in the German-speaking world at that time was

⁴ Andersen (2009) also discussed the paradoxical characteristic of Walras' equilibrium from a different viewpoint of an entrepreneur in the Walrasian equilibrium system. The paradox is that the while Walrasian entrepreneurs bring the elements of the system together into a coherent whole through an equilibrating process motivated by profit opportunities, they have no income when the system has moved to equilibrium (ibid., 60).

⁵ It is said that Schumpeter's research began with historical research at the University of Vienna, where he examined legal and social history from an economic perspective, and then, after

also under the influence of the German historical school, and hence, Schumpeter was greatly influenced by this school as well⁶. Schumpeter was confronted with methodological controversy, developed by Carl Menger, who emphasised the construction of the theory based on logical and deductive methods, and Gustav von Schmoller, who emphasised the collection of materials based on empirical and inductive methods. Schumpeter felt strongly unproductiveness of this controversy and came to explicitly recognise the significance of Ernst Mach's instrumentalism and Schmoller's scientific method of historical description. On the one hand, Mach's instrumentalism refers to the position that theories are not descriptions of reality but tools for classifying, organising, explaining, predicting and deriving some useful results from the phenomena to be observed, and hence, theories themselves are neither true nor false⁷. On the other hand, Schmoller's standpoint means that taking history into account does not allow *ceteris paribus* conditions. Schumpeter considered economic history to be the most important analytical tool in economics⁸ because historical records provided the best way to understand how economic and non-economic facts were interrelated. Thus, for Schumpeter, economic theory had to stand in the historical context and had to be integrated with economic history.

Under the influence of the equilibrium theory and the fusion of history and theory, the basic framework of Schumpeter's system of economic theory was established during the decade of

passing through the economic theory of the Austrian School, he moved to the research of the mathematical school, including Walras, Pareto and Edgeworth (Shionoya 1998, 83).

⁶ According to Schumpeter, the German historical school was first established by Schmoller. (1) Schmoller and his pupils threw themselves into the fight for social reform, asserting their personal value judgements with the utmost vigor; (2) the same truly scientific spirit of criticism made the school look askance at the broad generalizations that are in the nature of philosophies of history; (3) Schmoller always protested against an 'isolating' analysis of economic phenomena – he and his followers spoke of a 'method of isolation' – and held that we lose their essence as soon as we isolate them; and (4) the results of monographic historical research will weld into 'general economics' merely by being co-ordinated and without the aid of mental operations other than those that produced the monographs (Schumpeter 1954, 779-81).

⁷ It is said that instrumentalism can be classified into *strong* instrumentalism like Milton Friedman and *weak* instrumentalism such as Schumpeter (Shionoya 1998, chap.2; Shionoya 1995, chap.5). The former is a position that limits the role of theory to the prediction of observed results and considers theory strictly as an instrument for prediction.

⁸ For Schumpeter, four main analytical tools in economics were economic theory, statistics, economic history, and economic sociology. His grand vision of economic research is called the 'comprehensive social science'. See, in particular, Shionoya (1998), chap. 3 for detailed arguments about this.

sacred fertility⁹. His grand theoretical system involved three economic aspects: economic statics, economic dynamics and economic sociology. Concerning economic statics, one of the great forerunners for Schumpeter was Walras. As is well known, Schumpeter sent Walras a complimentary copy of his first book *Das Wesen und der Hauptinhalt der theoretischen Nationalökonomie* (1908). After that, Schumpeter often referred to Walras' achievements in his writings until his later years.

The theory of economic equilibrium is Walras' claim to immortality, that great theory whose crystal-clear train of thought has illuminated the structure of purely economic relationships with the light of *one* fundamental principle. (Schumpeter, 1951, 76)

As far as pure theory is concerned, Walras is in my opinion the greatest of all economists. His system of economic equilibrium, uniting, as it does, the quality of 'revolutionary' creativeness with the quality of classic synthesis, is the only work by an economist that will stand comparison with the achievements of theoretical physics.... It is the outstanding landmark on the road that economics travels toward the status of a rigorous or exact science and, though outmoded by now, still stands at the back of much of the best theoretical work of our time. (Schumpeter, 1954, 795)

Walras' great contribution referred to in these quotations is the general equilibrium theory. This holds over the entire economic system, including four special equilibria: the general equilibrium of exchange, that of production, that of capital formation and credit and that of circulation and money. The general equilibrium of the entire society was constructed as the interrelation of those equilibria by formalising and abstracting the economic society regardless of practical applications and value judgements. Walras himself called the general equilibrium theory 'pure economics' and defined it as 'the theory of the determination of prices under a

⁹ This is a phrase in Gottfried Haberler's memorial article on Schumpeter. Schumpeter has used this expression in his biographical review of one of his teachers Böhm-Bawerk. Subsequently, he has also used it as his own motto (Harris ed. 1951, 28).

hypothetical régime of perfectly free competition¹⁰.' Specifically, he envisioned economic society as a kind of huge stock market where owners (landowners, labourers and capitalists) of the three types of capital (land, labour and machinery) and the fourth agent 'entrepreneurs' would mutually exchange goods in perfectly competitive markets with each market price.

Although Walras' general equilibrium theory significantly influenced Schumpeter's economic statics, economic statics remains one component of his theoretical system. When we re-examine the relationship between economic statics and the other two components, we should ask whether Schumpeter accepted Walras' general equilibrium theory in its original form. Moreover, we should ask whether he modified Walras' framework to connect it with his own economic dynamics (and economic sociology).

2.2 Reconsidering Preface to the Japanese Edition of *Theorie der wirtschaftlichen Entwicklung* (1937)

To address these questions, we should pay attention to the Preface to the Japanese Edition of *Theorie der wirtschaftlichen Entwicklung* (1937). In this book, Schumpeter was trying to construct 'a theoretic model of the process of economic change in time' (Clemence ed. 1989, 165). As mentioned in previous studies, Schumpeter formulated the theoretical model by adopting a dichotomous approach between economic statics and economic dynamics. In doing so, he was greatly influenced by his two predecessors, Walras and Marx. In this preface, he began describing Walras with a compliment: 'To Walras we owe a concept of the economic system and a theoretical apparatus which for the first time in the history of our science effectively embraced the pure logic of the interdependence between economic quantities' (ibid.). Here, we should not overlook the subsequent passage:

But when in my beginnings I studied the Walrasian conception and the Walrasian technique... I discovered not only that it is rigorously static in character... but also that it is applicable only to a stationary process. (ibid., 165-66)

¹⁰ See the 'Preface to the Fourth Edition' of Walras (1954), p.40.

It is important to note that Schumpeter regarded static theory as different from the theory of stationary processes¹¹. On the one hand, static theory consists of ‘a statement of the conditions of equilibrium and of the way in which equilibrium tends to re-establish itself after very small disturbance’ (ibid., 166). Thus, it is ‘useful in the investigation of all kind of reality, however disequilibrated it may be’ (ibid.). On the other hand, the stationary process itself is ‘a process which *actually* does not change of its own initiative, but merely reproduces constant rate of real income as it flows along in time’ (ibid.). At a glance, each scope of these two phases seems to overlap for the most part, but both phases seem to have different features that cannot be easily expressed by the symbols and Venn diagrams of the theory of sets. The most significant difference is that the former is recognised as a *tool* to describe the conditions of equilibrium and the equilibrium state that can be re-established even if deviating from the equilibrium, while the latter is recognised as a *process* with a definite time axis that flows along in time. The former is the very theory of Walras’ general equilibrium, which Schumpeter accepted *instrumentally* with the utmost praise. The latter can be thought of as his reinterpretation of Walras’ general equilibrium theory to make it the foundation for his own construction of dynamic theory. This can be inferred from the following quotations:

He [Walras] would have said... that of course economic life is essentially passive and merely adapts itself to the natural and social influences which may be acting on it, so that the theory of a stationary process constitutes really the whole of theoretical economics... (ibid., 166; [] by author)

[T]here must be a purely economic theory of economic change which does not merely rely on external factors propelling the economic system from one equilibrium to another. It is such a theory that I have tried to build and... that it... explains a number of phenomena, in

¹¹ See Yagi (1988), chap.6 with regard to the argument that Schumpeter understood Walrasian general equilibrium theory as a *process*. Moreover, Yagi argued that the analytical level of this process understanding should be grasped at three phases: individual processes, total process, and large economic and social processes.

particular the business cycle, more satisfactorily than it is possible to explain them by means of either the Walrasian or the Marshallian apparatus. (ibid.; [] by author)

In Schumpeter's later works, it is even more explicitly stated:

Léon Walras has built the relations subsisting between the elements of the economic system into equations, and has shown that they suffice to determine unique values of variables. His proof left much to be desired in technique and details, but later analysis still retains the principle. (Schumpeter, 1989, 23–24)

Walras' work unfolds the most general truth of economics and solves its most fundamental problem in a way which, although it leaves plenty of room for improvement and has undergone the influence of later work and more powerful methods already, must forever be looked upon as classical. (Schumpeter, 1982, 1057–1058)

Thus, where Schumpeter made direct references to his commitment to Walras, he did not accept Walras' general equilibrium theory in its original form. Therefore, a purely economic theory of economic change, which Schumpeter considered as the basis of his dynamic theory, must have been constructed by overcoming plenty of room for improvement in Walras' theoretical framework.

2.3 Two followers' interpretations of Schumpeter's equilibrium theory: Nakayama and Stolper
Ichiro Nakayama studied directly under Schumpeter at the University of Bonn. He regarded Walras' general equilibrium theory as pure economics, which he reinterpreted in a way consistent with Schumpeter's improvements. According to his reinterpretation, pure economics is a system of economics in which the equilibrium theory is the logical basis for understanding an equilibrium state of economic phenomena¹². The relationship between an equilibrium *state*

¹² See Nakayama (1972), p. 6.

and the equilibrium *theory* is important here. The former is the state in which the elements maintain a certain degree of interdependence, but it does not show a tendency towards change as a whole. While allowing for fluctuations in internal details, it is the state in which various fluctuations are cancelled within the interdependent relations, so that no major fluctuations appear to occur as a whole. The latter, on the other hand, is a theoretical *tool* which provides logical explanations for the equilibrium state. Thus, it demonstrates the position of real economic phenomena by presenting the final equilibrium state among various factors. Therefore, it is reasonable to understand that Nakayama's pure economics is a tool for theoretically describing a certain balanced state, although it contains fluctuations of individual elements.

First, the most important thing is that the distinction between static and dynamic is merely a relative one, and they are both based on the equilibrium theory as the description of its instrumentality. That is to say, the first significance of the equilibrium theory is that it is a means for understanding economic phenomena or an instrument for analysing them. In other words, the primary significance of equilibrium theory as a theory is that it is a means to understand economic phenomena or to analyse economic phenomena. In this sense, the application of the equilibrium theory in a so-called static state and that in a so-called dynamic state never changes the essence of the theory. (Nakayama 1972, 9; translated by author)

In this quotation, pure economics is the theory which encompasses both the static equilibrium theory (the theory of economic cycle) and the dynamic equilibrium theory (the theory of economic development)¹³. If that is the case, static theory, on one hand, is for grasping the correlations among the various elements which give rise to economic phenomena in equilibrium; dynamic theory, on the other hand, is for grasping the changes in the correlations among the various elements through the temporal transition of the equilibrium state through

¹³ Nakayama stated that 'the state of the real economy as it exists from time to time can always be seen as a mixture of a tendency toward a state of pure equilibrium and a tendency to fluctuate this state' (ibid., 88).

changes in economic phenomena that arise from within it. In particular, the paradoxical expression of the dynamic equilibrium theory seems to indicate the Schumpeterian feature to place pure economics on the basis of dynamic theory as well.

Wolfgang F. Stolper, another follower of Schumpeter, was his student at Bonn and Harvard. In his book on Schumpeter's life and works, Stolper (1994) mentioned Schumpeter's business cycle as follows:

Schumpeter's theoretical problem was to explain how an equilibrium situation was disrupted, why adjustment processes did not lead back to the old equilibrium as described by the implied dynamics of supply - demand analysis; why it led to a dynamic process first away from equilibrium, then, as a wavelike process, to another higher equilibrium level. (Stolper, 1994, 58)

Schumpeter's first task was to show the limited nature of what general equilibrium theory could explain. (ibid., 59)

Unlike Nakayama's positive interpretation, Stolper's view of Schumpeter's static theory seems to be obscure and slightly negative. It seems reasonable to suppose that Stolper disagreed with static theory in the Schumpeterian business cycle theory, similar to the common interpretation.

Thus, we confirmed that Schumpeter had constructed a theory of stationary processes in the flow of time through not only praising Walras' general equilibrium theory but also improving its limitations. However, there have been considerably different opinions concerning Schumpeter's static theory. Based on these circumstances, we examine the methods and contents of the fusion between the theory of stationary processes and the theory of developmental processes to grasp the cyclical capitalist process, especially as completed in *Business Cycles* (1939).

3 Business cycle as the mutual linkage of the stationary process and development processes

As its subtitle indicates, *Business Cycles* (1939) was aimed as a theoretical, historical and statistical analysis of the capitalist process. It seems reasonable to think that Schumpeter finished constructing his system of economic theory by way of his previous works – *The Nature and Essence of Economic Theory* (1908), *The Theory of Economic Development* (1912) and its 2nd revised edition (1926) and so on. Therefore, *Business Cycles* should be examined to ascertain a close interconnection between the theory of stationary processes and the theory of development processes.

3.1 Kuznets' review article on Schumpeter's *Business Cycles*

Although *Business Cycles* is an ambitious work through which Schumpeter attempted to analyse the capitalist process by combining theory, history and statistics, some reviews immediately after its publication seemed to be not necessarily what Schumpeter expected¹⁴. Among such reviews, Kuznets (1940) seems to be the most essential.

Simon Kuznets studied under Wesley C. Mitchell, the founder of the National Bureau of Economic Research (NBER) and one of the major theorists of the American institutional school. Kuznets has been a professor at Harvard University since 1960. In 1971, he was awarded the Nobel Prize for his work in developing a theory of economic growth using empirical methods. However, Kuznets collected data, developed statistical classifications and observed how these classifications changed over time rather than developed his own growth theory. Thus, it seems reasonable to think that he has consistently been under Mitchell's influence.

Among various business cycle theories, Schumpeter's theory has often been contrasted with Mitchell's, based on empirical methods. The difference between the two is that Schumpeter's theory is a theoretical model deduced from the theory of stationary processes, which is reinterpreted as Walras' general equilibrium theory, while Mitchell's theory is a theoretical model found inductively from empirical analysis of aggregate economic activities in a country. Kuznets relied on the latter and wrote a review of Schumpeter (1939) from a methodological

¹⁴ Other remarkable reviews included Rosenberg (1940), Lange (1940) and Hansen (1951). In addition to reviews written in those days, Kingston (2006), Andersen (2006) and Freeman (2015) are more recent, remarkable articles.

standpoint different from the former. The essential criticism by Kuznets, in particular, is on the relation between theory and statistics¹⁵. The following is a clear example:

One cannot well escape the impression that Professor Schumpeter's theoretical model in its present state cannot be linked directly and clearly with statistically observed realities; that the extreme paucity of statistical analysis in the treatise is an inevitable result of the type of theoretical model adopted; and that the great reliance upon historical outlines and qualitative discussion is a consequence of the difficulty of devising statistical procedures that would correspond to the theoretical model. (Kuznets 1940, 266)

From this quotation, we can derive two points of Kuznets' criticism of the relation between theory and statistics. The first is a criticism of the deductive approach from theory to statistics as a whole, which starts with a theoretical model derived from deductive propositions about stationary processes and presents the results of analysis with proofs and quantitative data. This seems to be the position of Kuznets, who was a student of Mitchell and was faithful to his inductive ideas. Second, Schumpeter's 'theoretical history'¹⁶ is limited in its ability to integrate quantitative statistical analysis with the qualitative nature of history and institutions. He attempted to relate the theory of stationary processes, which is an abstraction but not merely an arbitrary one and which is derived from direct observation of reality, by presenting a vast amount of historical analysis. It should not be overlooked that Kuznets, a major theorist of the American institutional school, did not deny the need to focus on the qualitative aspects of history and institutions. If Schumpeter had the methods and techniques for collecting and processing

¹⁵ It is possible to sum up Kuznets' criticism as follows: (1) Schumpeter did not engage in what he thought was correct quantitative analysis but instead engaged in a personal journey ('intellectual diary') through the collection of statistics and other historical observations. (2) Schumpeter's theoretical model has not produced a statistically testable hypothesis. (3) Schumpeter's hypothesis of a fairly uneven distribution of entrepreneurial capacity through the 'swarming' of population and related innovations in business cycles is highly suspect without further evidence. (4) The three types of business waves and the relationship between them shown by Schumpeter are not supported by the evidence provided, nor by any other evidence of which he was aware.

¹⁶ See Kanazashi (1979), p. 135.

statistical data to prove, his ambitious attempt would have produced some important results. The following statement by Kuznets seems to be an expression of respect for Schumpeter's attempt.

Yet it is a cardinal merit of the treatise that it raises all these questions; that it emphasizes the importance of relating the study of business cycles to a study of the underlying long-term movements; that it calls for emphasis on the factors that determine the rate and tempo of entrepreneurial activity; that it demands a statistical procedure based upon a clearly formulated concept of the business cycle; and that it valiantly attempts to use historical evidence (ibid., 271).

Although Schumpeter's system of economic theory could be constructed by integrating historical and institutional observations, it was difficult to further integrate the deductive propositions derived from it with statistical analysis. Thus, Schumpeter's trinity analysis of the capitalist process failed after all. On the other hand, Kuznets' empirical analysis using quantitative statistical data and his observation of statistical classification failed to provide a theoretical framework for the research trend of the micro-foundation of macroeconomics since the latter half of the 20th century. Here, we can find the possibility that the achievements of the two complement each other through historical and institutional perspectives. Therefore, it seems that Schumpeter's great ambition in his *Business Cycles* should be recalled once again¹⁷.

3.2 Interrelation between the stationary process and the development process

Schumpeter's theoretical arguments are developed from Chapter 2 to Chapter 4 in *Business Cycles*. It is a synthesis and summary of his two major works which preceded this voluminous work. The simplest theoretical model is the Pure Model of the First Approximation, which consists of two phases of prosperity and recession. The process of this model

¹⁷ In modern evolutionary economics, there are studies that attempt to develop Schumpeter's vision of economic evolution from this perspective. See, for example, Foster (2000), Foster (2015) and Freeman (2015). The controversy developed by Kingston (2006) and Andersen (2006) also provides an institutional perspective of Schumpeter's business cycle theory in such a trend.

First, the starting point of this model is a stationary state. According to the theory of the stationary processes, this model is set up to satisfy the following assumptions: (1) all firms are in perfectly competitive equilibrium, (2) each firm's costs consist of wages and rents and are exactly equal to each firm's income, (3) prices are always equal to average costs, (4) therefore, profits are zero and profit opportunities do not exist, (5) the interest rate is also zero, (6) there is no involuntary under-utilisation of resources, (7) all households and firms are in perfect long-run equilibrium, and (8) income and expenditure are equal, and the budgetary pattern cannot be changed in favour of the current situation (Clemence et al. 1950, chap.2).

To understand this baseline model as a theory of processes through time rather than merely a description of the state, it must be considered that such a state is reproduced through time. In other words, it is a process in which a state is reproduced on the same scale every period of time, similar to Marx's simple reproduction scheme. Of course, there are many differences between the two theoretical models. In particular, Marx's simple reproduction scheme targets the macroscopic reproduction processes of society as a whole. However, in Schumpeter's theory of stationary processes, the aggregate results are derived from the microscopic agents' behaviours. Namely, in Schumpeter's framework, individual agents' decision-making based on reliable predictions with their past performances and experiences play an important function. Schumpeter (1912) tried to grasp cyclical fluctuations from the perspective of agents' behaviours, and this seems to develop more explicitly in chapter 6¹⁸. It follows from what has been said that Schumpeter could develop the core argument regarding the practice of new combinations by entrepreneurs on the basis of the theory of stationary processes.

Next, in the theory of stationary processes, once new combinations are carried out by entrepreneurs with bank credit as the creation of new purchasing power, the capitalist process begins to deviate. The productive goods and services required by entrepreneurs are withdrawn from the conventional stationary process at higher factor prices. Therefore, it leads to higher prices, higher interest rates and higher incomes. Since the production function is unchanged at

¹⁸ This chapter 6 was largely renewed between the first edition in 1912 and the subsequent editions. In the first German edition, it was the article published in *Zeitschrift für Volksw., Sozialpolitik und Verwaltung* (1910) as an introduction to more detailed discussions (Schumpeter 1912, 414, n.1).

the beginning of the emergence of new combinations, entrepreneurs gain entrepreneurial profits, and costs and interest are paid smoothly, resulting in deflation. Furthermore, because anxiety about unpredictability has been relatively dispelled by the first innovator's success, imitators follow in swarms, and hence, entrepreneurial profits gradually disappear. Once the deviation from the stationary process is amplified, firms face difficulties in formulating new profitable plans, and the possibility of business failures increases.

Finally, as innovative investments gradually slow down and deviation from the previous stationary process weakens, the capitalist process enters an adaptive phase under the new production function. Schumpeter calls this the consolidation process, which is in the recession phase. The economy and business are reorganised to adjust to new conditions resulting from new combinations through this process. As the predictability of production and business gradually increased, the capitalist process shifted to the new stationary process. The differences from the previous stationary process are that the production function has changed, output and money income have increased and the interest rate has decreased due to the liquidation of debt.

As mentioned above, the entire cyclical process, which proceeds by alternating the stationary process and the development process, can be observed from the viewpoint of the plans and actions of individual agents. We confirm this while referring to chapter 6 in Schumpeter (1912). First, regarding individual agents' decision-making in both processes, Schumpeter stated the following:

... the static economic process repeats itself regularly, all data are given by experience... the processes of development in our sense differ significantly from this, since here many points of the business plan are not given by experience but have to be estimated (Schumpeter 1912, 442; translated by author).

If we want to compare the previous stationary process with the new one from the viewpoint of the entrepreneur's decision-making, we can find Schumpeter's quote as follows:

They are disturbances of the new state of equilibrium that the entrepreneur has in mind,

towards which he is working, towards the achievement of which his calculations are set and which shall eventually become the basis of further plans. These disturbances have the same effect on new enterprises as the disturbances caused by the development have on the static economies and trigger analogous attempts of defence and adaptation among entrepreneurs. They are now striving toward a state of equilibrium that is different from the one originally intended, in that, under the pressure of the lever 'profit and loss', they are trying to set themselves up as well as possible under the circumstances now given, to find the most advantageous position possible.... this state of equilibrium, to which they are now striving, is the same as that which the static economic subjects also want to establish (ibid., 446; translated by author).

Thus, the development of the whole economy results from the interdependence of the decisions of individual agents as follows:

We thus conclude that the economic development in our sense does not simply consist of independent individual developments of enterprises,... the individual developments take place in sympathy with each other in such a way that one of them causes many others (ibid., 433; translated by author).

In summary, when an entrepreneur demonstrates their entrepreneurship and accomplishes new combinations based on individual agents' deterministic behaviours, the capitalist process deviates from the stationary state and enters the development process. However, as this deviation significantly reduces his predictability, the development process is reversed and shifts to the adaptation process toward another new stationary state. It is only in the adaptation process, which is located in the latter half of the development process, that it becomes theoretically possible to postulate the new stationary process. In this way, the stationary process and the development process are connected through the entrepreneur's decision-making and his behaviour, which are grasped *functionally*.

4 Towards the construction of the theory of circular flow

I would like to discuss the theoretical significance of neighbourhoods of equilibrium, which is clearly related to a stationary process. In this paper, I have consistently used the terms of the theory of *stationary processes* for Schumpeter's statics. I have intentionally avoided using the terms of the *general equilibrium* theory or the *equilibrium* theory because Schumpeter did not introduce Walras' general equilibrium theory itself into his own theoretical system. It seems reasonable to suppose that the concept of neighbourhoods of equilibrium describes that Schumpeter had such an intention.

According to Schumpeter, this concept has the following meaning:

... we will, for our purpose, recognize existence of equilibria *only at those discrete points on the time scale at which the system approaches a state which would, if reached, fulfill equilibrium conditions*. And since the system in practice never actually reaches such a state, we shall consider, instead of equilibrium points, ranges within which the system as a whole is more nearly in equilibrium than it is outside of them. Those ranges, which are the operational form to which we shall apply properly modified equilibrium considerations, we call neighborhoods of equilibrium (the term must not be understood in its mathematical sense) (Schumpeter 1964, 45).

In other words, it is evident that neighbourhoods of equilibrium is an expressive device to grasp the concept in which the equilibrium is not a single point but a *zone* or *area* including its surroundings. Thus, although there is no equilibrium point in the strict sense, there is definitely a tendency toward an equilibrium. This is also true of the behaviours of individual agents in the stationary process.

All that is important to note is that businessmen actually compare any actual situation with that kind of *normal*.... even if real life were always equally far removed from equilibrium, our concept [*normal*] would still be indispensable as a standard by which to diagnose and,

if possible, to measure actual states of the economic organism (Schumpeter 1939, 4; italics and [] by author).

... *Marshall's Normal Values*, we call their *Theoretical Norms*. And that state of the system in which every element conforms to its theoretical norm, however distant it may be from actual life, is what renders to the theorist the service which to the businessman is rendered by the idea of a normal business situation (Schumpeter 1964, 23).

This follows from the fact that firms which find themselves in an indeterminate situation can never plan except for a *range* of prices and outputs (ibid., 39).

As mentioned above, if we regard the stationary process as a process that is within the range of the neighbourhoods of equilibrium, the neighbourhoods of equilibrium is a *range* of normal values with a certain range of available statistical data for individual agents and ensures predictability in their decision-making. Schumpeter seems to be approaching a complementary relationship with Kuznets' statistical analysis mentioned above by proposing this concept.

How should we determine the range of normal values that include the possibility of fluctuations? Since 'normal' is considered to be relative, it is difficult to determine its range precisely. Here, it seems to be helpful to refer to Kuznets' articles, which argued the relationship between equilibrium theory and business cycle theory. Contrary to his previously mentioned review, he positively sought an ideal and more appropriate theory to analyse the business cycle phenomena in Kuznets (1930a) and (1930b).

Kuznets (1930a), for example, mentioned the meaning of the equilibrium theory by citing Adolph Löwe's argument on the relation between the general system of economics and the business cycle theory.

The analysis of business-cycle theory by Loewe has indicated with sufficient clarity that any attempt to explain the pervasive fluctuations with the help of economic factors breaks down the assumption of general interdependence which is a direct implication of a concept

of equilibrium (Kuznets 1930a, 395–396).

Kuznets' stance for the equilibrium theory has been negative. In this article, he also evaluated Schumpeter's business cycle theory not only on dynamic theory but also as a tentative theory. Although he groped for various alternative economic theories which contained the introduction of the element of time, a chaotic description and so on, he did not reach an explicit solution. He only proposed an expected direction in the final section:

If we are to develop any effective general theory of economic change and any complete theory of economic behavior, the practice of treating change as a deviation from an imaginary picture of a rigid equilibrium system must be abandoned (ibid., 415).

In modern business judgement, however, there seems to be aspects which are not necessarily unrelated to Schumpeter's neighbourhoods of equilibrium. For example, in business trend indices published by public institutions, the method of classifying the phases of the business cycle is adopted by judging the dates of peaks and troughs based on statistical evidence. It seems to be a very appropriate and reasonable method. However, in indicators such as business sentiments, which have been surveyed relatively recently, the judgement of flat is used in addition to whether the economy is going up or down¹⁹. Since a flat economy is considered to be a phase that is neither an obvious upward nor downward phase, it seems necessary to be located theoretically as a certain stationary phase of the business cycle. To understand such a stationary phase, it seems reasonable to suppose that Schumpeter's circular flows and neighbourhoods of equilibrium should be reconsidered.

5 Conclusion

¹⁹ For example, in Japan, the Cabinet Office has conducted and published monthly surveys since 2000 such as the Economic Watcher Survey, the TDB Survey of Business Conditions published by Teikoku Databank, a private credit research company, and the Nichigin Tankan published by the Bank of Japan.

Schumpeter's paradox is eased by finding individual agents' decisions and behaviours in Schumpeter's theoretical framework of the stationary process. As Schumpeter expected new theories and analytical tools at that time²⁰, we should advance towards the construction of the theory of the circular flow. This ought to be our goal in the short run.

Schumpeter's system of economic theory consists of the three pillars of economic statics, economic dynamics and economic sociology. In particular, economic statics and economic dynamics were completed in *Business Cycles* (1939) by way of *The Nature and Essence of Economic Theory* (1908), *The Theory of Economic Development* (1912) and its revised editions. Shionoya (1997) criticised the common interpretation, which was 'he [Schumpeter] deals with statics only as the object of critique, and that he starts with an analysis of circular flow or static state in the exposition of his theory of economic development only for the purpose of making the process of dynamic change conspicuous in contrast to stationary conditions' (p. 88; [] by author), because it was superficial. We agree with his objection based on the discussion so far. For Schumpeter, the theory of circular flow was indispensable to draw attention to the emergence of entrepreneurs within the stationary process and to develop his own theory of economic development.

The stationary process which Schumpeter clearly distinguished from the equilibrium concept is defined as the process of an economic state in which the Walrasian general equilibrium is reproduced on an unchanging scale year after year throughout time. This definition is not strictly consistent with the Walrasian concept of general equilibrium. Although Schumpeter is regarded as having misunderstood Walras once in a while²¹, the main feature of his definition is that it explicitly introduces the concept of time, and it describes a process of economic conditions in which such conditions continue on roughly the same scale with some fluctuations rather than

²⁰ Schumpeter (1937) mentioned that 'during the last ten years exact theories have been worked out of the effects due to lagged adaptation, to action on expectation, and so on. New techniques have been worked out or adapted from other fields. Among the latter, the most remarkable event was the intrusion into economics of the functional calculus, developed by Vito Volterra about fifty years ago.... I believe that these new tools of analysis will greatly enhance our power of dealing with the patterns of reality and that they will render service also to the process described in this book (Clemence ed. 1989, 168).

²¹ See Morioka (2000).

strictly representing a state of equilibrium at a single theoretical point in time. Although his definition is compared to the Marxian simple reproduction scheme rather than the Walrasian general equilibrium system at times, the difference from Marx lies in whether or not individual agents' behaviours are taken into account in the scheme of stationary process or simple reproduction. Because Schumpeter explicitly included them, he was able to place the role of an entrepreneur in the interconnection between the theory of the stationary process and the development process. The theory of stationary processes is an indispensable *tool* in Schumpeter's system of economic theory.

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