

Schumpeterian Business Cycles: Innovations, Bubbles and Global Crises¹

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Abstract

This study aims to research whether or not Schumpeter's basic arguments provide analytical tools for determining the causes and results of the Global crisis. Schumpeter suggests that the very success of capitalism is the basic cause of its failure. Thus, in the first section, the dynamic evolutionary characteristics of capitalism within the Schumpeterian framework will be examined. The topics of the second section are the business cycles, innovations and the economic and institutional transformations of the system. After determining the causes of the Global crisis from the Schumpeterian point of view, the next bubble which would cause another crisis will be investigated in the last section.

Keywords: Financial Innovation, Schumpeter, Global Crises, Capitalism, Bubbles.

“The suffering or misfortune resulting from technology was caused by the social context, not the apparatus itself. Such logic stuffed technology into familiar categories of means and ends; technology was at best and worst a neutral endeavor. The evil resided only in ends to which it was used.” (Jacoby, 1981:28).

Introduction

About two years ago, after the collapse of an investment bank called Lehman Brothers, a worldwide financial and economic crisis was aroused. During the crisis, many economists argued about both the reasons for and the recovery of this crisis on the basis of the motions of capitalism. One of the most remarkable theories on the crisis is Schumpeterian analysis. According to him, endogenous factors of the system caused the crisis rather than exogenous factors, as according to neoclassical economists. Furthermore, these endogenous factors are not only economic but also social, political, historical and even physiological. In Schumpeter, innovation and entrepreneurship can be seen as the basic factors in the development of capitalism. This kind of development provides quantitative changes in the system and not continuous and smooth ones.

As is known, before the global crisis, those internet companies which were launched in 1993, began to transform the internet into a set of linked pages. Also, the innovative base technology in the IT sector, the willingness of creative entrepreneurs and finally the availability of risk capital could be used to generate the future oriented expansion. Besides, government chose a policy of low taxes and deregulation of the economic process. This period was an expansion period which spread to other sectors and could also be interrelated with the analysis of Schumpeter, as stated in *Business Cycles*.

Schumpeterian business cycle analyses is also related to the “New Economy”. Schumpeter analyzed the differences between the first and second waves of a cycle. The *primary wave* or *first wave* occurs in the real economy when banks create credit to finance entrepreneurial activities such as new products or new processes which increase productivity. The secondary wave can be defined as speculative spending by entrepreneurs for the construction and operation of their new innovations.

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However, finance plays a crucial role in Schumpeter's theory of business cycles and development and financial innovations were not included in the list of innovations that produce primary growth waves (Leathers and Raines, 2004: 667-681). The reason why finance plays a crucial role is that the bulk of the spending is debt-financed, with credit creation spreading throughout the system to finance any kind of expansion which cannot be financed by existing funds (Schumpeter, 1939: 135). Debt arising from the financing of innovations and business expansion, which increase productivity, is "productive" debt. However, credit created in the secondary wave for consumers, speculative businesses and financial speculators, is primarily induced by 'easy' money and results in the problem of "overindebtedness" (Schumpeter, 1939: 123). Schumpeter emphasised that "reckless" banking and financial speculation, which made the depression much worse, could be and should be separated from the dynamic "creative destruction" process of innovation by "a sufficiently powerful and intelligent government assisted by a properly organised banking system" (Schumpeter, 1934: 310).

Besides, in the early 1990s, capital investments in information technology and telecommunications initiated a primary wave growth burst. By the late 1990s, a secondary wave occurred resulting from the behavior of greedy speculative entrepreneurs² in the financial sector. The speculative actions of entrepreneurs led to financial excesses and conditions for financial crisis in the secondary wave of speculative prosperity. Entrepreneurs' spending for labour, new plants and equipment to launch their new ventures induced a secondary wave of prosperity that spread throughout the entire economic system (Schumpeter, 1934:226). In Schumpeter's words: "Many things float on this 'secondary wave', without any new or direct impulse from the real driving force" (Schumpeter, 1934:226). But, Schumpeter took a negative approach to the use of financial derivatives in financial speculation. He claimed in *Business Cycles* that "The path that leads from the financial sector to real investment is tortuous and unsafe" (Schumpeter, 1939: 885). Schumpeter described the "speculative mania of 1927-1929" as involving "wild excesses and attendant financial practices" that "were clearly abnormal", which could only be explained "by a specifically American mass psychology" (Schumpeter, 1989: 219).

Around the year 2000, the burst of the inflated bubble preceded the deep slump of the New Economy. All the important stock indices decreased about one third from their former highs. Then, central banks lowered interest rates to add new liquidity. Investors searched for new areas with satisfactory returns. Every investor on the planet was looking for companies which had cash left. These investors were households and consumers. This provided short term success that led to investor optimism. U.S. homeowners had the impression that they became richer and they were willing to use large loans for their consumptions (Hanusch and Wackermann, 2009:12-13; Eichengreen, 2010). In 2004, The Federal Reserve Board feared the growing inflation and to overcome this tendency increased the interest rate. Then, many homeowners could not afford additional financial burdens. The increasing deficit payments hit not only U.S. banks but also global financial institutions. (Leathers and Raines, 2004). For these reasons, the Global crisis, originating in the USA was related to several economic and non-economic factors, which may be called Schumpeterian. In Schumpeter's words "... surely nothing can be more plain or even more trite common sense than the proposition that innovation ...is at the center of practically all the phenomena difficulties and problems of economic life in capitalist society" (Schumpeter, 1939: 62).

The concept of innovations or new combinations covers five cases in Schumpeterian analysis. These are: introduction of a new good, introduction of a new method of production, the opening of a new market, a new supply source of new materials and new organizations. Schumpeter maintained that new goods are the ones which have not been consumed before; a new method of production means a new scientific discovery; new markets means an organization which had not existed before; new raw materials are those which first have to be created and a new organization in any industry likes the creation of a monopoly position (Schumpeter, 1934: 66). Thus, the most important characteristic of Schumpeterian innovations, which are the product of an entrepreneur, is "competitive elimination of the old one" (Schumpeter, 1934: 67). All bubble machines often begin with a new innovation. If new financial instruments driven by the mortgage market are defined as an innovation (*a new good*) in the Schumpeterian sense, the failure (Global crisis) of the system depends on its success as Schumpeter claimed (1943) in *Capitalism Socialism and Democracy*.

² As the psychological effects of prosperity spread, irrational expectations and speculative activities of all types become increasingly common. The role of new age entrepreneurs, different from the Schumpeterian entrepreneur, acting as knowledgeable and disciplined assessors of the potential success of entrepreneurial ventures, gives way to "reckless" lending, "financing irresponsibly" (Schumpeter, 1939: 635). With the creation of credit being "easy", speculative forces drive the economy. In extreme cases, great speculative manias develop in the financial markets, as occurred in 2008.

This study tried to both support this argument and find out the next new good innovation and new bubble that depended on this innovation. Before analyzing the motions of capitalism or business cycle theory, the fundamental characteristics (especially dynamic and evolutionary) of capitalism in Schumpeter's theory will be given below:

1. Fundamental (Dynamic and Evolutionary) Characteristics of Capitalism in Schumpeter

Schumpeter developed fundamental analytical concepts, used at present by many evolutionary economists, against neo-classical economics in building up his own development theory. This can be seen most clearly with Schumpeter's (2005) own understanding of "development" as '*transition from one norm of the economic system to another norm in such a way that this transition cannot be decomposed into infinitesimal steps*' (Schumpeter, 2005: 115). Also, the notion of development implies that the idea of adaptation does not apply in cases of changes in the norms themselves: 'When starting from the old form, the new one must *not* be reachable by adaptation in small steps' (Schumpeter 2005: 113). That is to say, development should be seen as 'an emergent process with an unknown outcome' (Foster, 2000: 323). So defined, this notion refers to dynamic change or evolutionary change in the system, the end result of which cannot be known *a priori*.

Although Schumpeter, as is well known, was critical about "evolutionism" in social thought (Schumpeter, 1954: 435-446), he used the term in the sense of evolution of the economic system. Schumpeter stated that evolution can be defined in a wider and narrower sense. In the wider sense, it comprises all the phenomena that make an economic process non-stationary. In the narrow sense, it comprises these phenomena minus those that may be described in terms of continuous rates within the unchanging framework of institutions, technological horizons, and would be included in the concept of growth' (Schumpeter, 1954: 287).

In this regard, one should remember the fact that Schumpeter, when he defined "evolutionary process" as a 'succession of static models' (Schumpeter, 1954: 964), warned the reader that "the conceptual devices sketched have nothing to do with any similar ones that may be in use in the physical sciences" (Schumpeter, 1954: 965). So conceived, evolution refers to "changes in the economic process brought about by innovation, together with all their effects and the responses to them by the economic system" (Schumpeter, 1939: 62). Economic evolution is marked by the discontinuity of economic phenomena. In other words, it can be explained by breaking away from a steady state framework (Alcauffle and Khun, 2004).

Schumpeter's entrepreneurs are identified as the internal carriers of the mechanism of change in capitalist economies (Ebner, 2000). He paid special attention to the emergence of novelty, that is ascertained when innovations materialize in the economy (Alcauffle and Khun, 2004). The economic development theory developed by Schumpeter carries a dynamic characteristic. As Marx did, Schumpeter also established an evolutionary model of technological change, and the crucial role in this change falls on the entrepreneur as an innovative agent. He defined innovation as 'The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumer's goods, the new methods of production or transportation, the new market, the new forms of industrial organization that capital enterprise creates' (Schumpeter, 1943:68). Following a successful innovation swarming illustrates that the sector or the industry in which the innovation took place will grow. Besides, an important innovation carries the propensity for stimulating other innovation. Due to such interdependency, innovations have the propensity either to intensify themselves in and around some certain sectors or to cluster (Schumpeter, 1939).

The appearance of a new technology will render the harmonization of existing routines required for innovation. Particularly, as a radical innovation³ will have an impact not only on one sector of the economy but on the society as a whole, it will thus ensure the dramatic change of routines. Schumpeter referred to a process determined by routines as a stagnant process, and indicated that such routines will start taking roots in themselves. In case routines extend their effects for a prolonged period of time, their benefits will be reduced as they do not require renovation or reproduction (Schumpeter, 1939)

Schumpeter's words that he insistently emphasized - "capitalism, in fact, is the process of internal economic change (Schumpeter 1939: 907)" - constitute the basic concept related to innovation; especially 'creative destruction' emphasized by radical innovations, constitutes the essence of capitalism (Schumpeter 1943: 104).

³ The economic history of Technology displays a similar dynamic pattern of long periods of stagnation or very slow change punctuated by sudden outburst like the industrial revolution. (Mokyr, 1990; 352).

This concept of Schumpeter can easily be associated with the concept of punctuated equilibrium which emphasized sudden changes. Schumpeter's considerations related to sudden changes, his emphasis on the interaction between the parts of a complex system, Foster's statement in 2000 saying: "an emergent process with an unknown outcome" that he made regarding Schumpeter and his change concept due to his understanding of evolution as development are the main points which significantly distinguish Schumpeter from Marx.

Schumpeter emphasized that the system should be treated as a whole and that the differences between the parts of the system, which may distort the system's functioning, needed to be evaluated in a dynamic concept (Schumpeter, 2005; Foster, 2000). This process involves continuous new leaps and mutations, but the mutation is not necessarily always generated with the best results and the process is an evolutionary process that is expressed by punctuated equilibrium. Emergence process; system's "development", leads to the change of defining the parts of the system. The system moves from one norm to the next, "this transition cannot be divided into small little pieces" (Schumpeter, 2005: 115). In a framework where there is complexity, it is important to emphasize the new order understanding that has emerged related to the change (Foster, 2000). This complexity is related to both economic and institutional factors in Schumpeterian business cycle analysis.

2. Business Cycles, Innovations and Transformation of the Old Structure

The instability (ups and downs) of capitalism arises from the tension which is created by the influence of economic and non-economic variables upon one another. Nevertheless, each variable, both economic and non-economic which causes cycles, are endogenous variables of the capitalist system. Social and institutional factors effect and change the economic variables in the studies of Schumpeter. Schumpeter analyzed the economic problem in the production sphere of the economy. In addition, the direction of the change can often be unpredictable and it is impossible to determine the exact behavior of the economy. The economic, social and political natures of the parameters cause both variability and unpredictability. In his famous book, *Capitalism, Socialism and Democracy* Schumpeter stated that "capitalism is by nature a form or method of economic change and not only it never is, but never can be stationary" (Schumpeter, 1943)." Schumpeter uses a biological term, namely mutation, to refer to the structural change of capitalism. According to Schumpeter, industrial mutation incessantly revolutionizes the economic structure by destroying the old one and creating a new one. This process is known as "creative destruction", which can be seen as the essential factor underlying the working of capitalism. The basic element of this process is innovation.

Schumpeter emphasized that innovative actions that lead to technological changes signify the evolutionary dynamic character of capitalism. In Schumpeter, economic and social relations are inseparable and interact with each other. The changes in the capitalist system depend on the endogenous variables which are economic, political, physiological, historical and institutional. For this reason, the system creates mutual relationships among variables and the dynamic and changing nature of capitalism can be analyzed from a holistic point of view. Hence, it is difficult to provide an exact solution or prediction about the future of capitalism (Burlamaqui, 2000). So, what we can learn from Schumpeterian analysis is that the basic dynamic factor of capitalism, small and middle size enterprises, can reanimate it. Before this argument, we need to analyze the long term behavior of capitalism as seen by Schumpeter.

According to Schumpeter, change in the structure of the system depends on the reactions of individuals rather than the society or the nation. For him, technological competition or dynamic competition is consistent with the capitalist system's nature, rather than price competition because of the aim of increasing profit and capital accumulation. Successful innovation means transformation of the system in Schumpeter. A new innovative action spreads to the industry. In other words, an innovation in a sector leads to other innovations or an innovation in other sectors (Dahms, 1985). At this point, the creative destruction notion of Schumpeter has to be taken into consideration. In the creative destruction process old structure is destructed and new structure is constructed by dynamic competition, which is related to the innovative actions of the entrepreneur. This is known as the *transformation* of the system in both the economic and institutional spheres.

In Schumpeter, capitalism is a successful system which cannot destruct in the near future because of its creative functions. For this reason, the destruction of capitalism depends on its creative property. The creative destruction process can be seen as a revolutionary process by means of destructing old forms and creating new ones. In monopolistic capitalism, Schumpeter points to the routinization of entrepreneurial actions and takes the destructive function of large firms on small size firms into consideration. This is a case of routinization of entrepreneurial action for Schumpeter.

Also, the sociopolitical dimension of the centralization of capitalism is important. The bureaucratization of both economic and social lives depends on large firms in Schumpeter. Shortly, in Schumpeter transformation and the destruction of capitalism primarily depends on both the routinization of entrepreneurial actions and the institutional structure of the system. In Schumpeter, rational capitalism rationalizes both economic and social life. In the rationalization process, entrepreneurs and their innovative creative actions disappear (Heertje, 2006). By routinization of the creative actions, capitalism loses its main dynamic factor. Other important destructive factors for Schumpeter are the destruction of the protecting strata, the hostility of intellectual groups and the anti-traditional characteristics of family life in rational capitalism. "In the end there is not so much difference as one might think between saying that the decay of capitalism is due to its success and saying that it is due to its failure." (Schumpeter, 1943:162)

The evolution of capitalism does not occur solely due to economic factors, but also to non-economic factors such as disappearing bourgeoisie, free contact etc. As it is known, the concept of entrepreneur in Schumpeter is exactly related to the primary wave as stated before. In the first stage, creative characteristics of the entrepreneur prepare the layer of primary wave by introducing new innovation. In the second stage, this innovation spreads through the financial sector and creates financial derivatives. In this stage, new age entrepreneurs appear in the financial sector, behave speculatively (not creatively) and help to extend the bubble. Also, the lack of regulatory institutions in the financial sector initiates crises. As was pointed out before, the cause of crises are not only due to the financial sector (economic) but also to physiological (new age entrepreneurs) sociological and institutional factors.

4. What is the next creative innovation and bubble?

In Schumpeter, innovative actions are the basic dynamic factors of capitalism. From this point of view we tried to find the basic causes and results of the 2008 crisis in terms of Schumpeterian innovations and search for the destructive effect of the financial innovations which appeared in the mortgage market. We expect that the next bubble must be large enough to recover the losses from the housing bubble collapse. Capitalism arises on capital accumulation and needs capitalisation. Today, capital accumulation in the system is undermining the basic biogeochemical processes of the planet in the process of promoting waste and growing inequality. Not only has global warming emerged since 1980 as the greatest threat, but has gotten rapidly worse (Foster, 2004). Diamond (2005) explains that the possibility of the ecological collapse of global capitalist society is in ways analogous to earlier ecological collapses of civilizations. Scientific research on and innovation concerning global warming need to find new or alternative sources of energy. This source can be seen as the next innovation (new good in the Schumpeterian sense) and as the next bubble as well.

We expect new innovations to be introduced by entrepreneurs, in the Schumpeterian sense, who are aware of the dangers of global warming. These innovations have to be creative and in the long run destructive. Also, this innovative activity is based on *alternative energy* sources such as viable alternatives to oil including wind, solar, and geothermal power, along with the use of nuclear energy to produce sustainable oil substitutes, such as liquefied hydrogen from water. Supporting this alternative-energy bubble can cause a boom in not only transportation and communications systems but also water and power. Of course, this new alternative source of energy and their improvements are vital for our national well-being, but in the long run they are *destructive*.

Conclusion

Schumpeter's thesis is that the self destruction of capitalism means that moving into a depression depends on the position of the business world. According to Schumpeter, the crisis of capitalism is based on economic development dynamics and social and political factors, which are different in every crisis. Many studies have compared the current financial and economic crisis with the Great depression of 1929. As Schumpeter's economic theory is taken into consideration, cycles are expected in the development process of capitalism. The basic difference between the 1929 and 2008 crises can be derived from non-economic factors. Besides social and political factors, the real estate bubble in the USA can be seen as the cause of the current crisis. In addition, monetary and interest rate interventions of the FED and poor institutional credit rating regulations are also responsible. For this reason the causes of the crisis are not only economic but also sociological and political. We can say that the future of capitalism depends on dynamic factors, especially the innovative actions of the system in the Schumpeterian sense. "Capitalist system real estate bubbles and foreign adventures with money, Uncontrollable asset inflation sets in while debt mounts at a reckless rhythm; much of it.

Thus grows the vast disproportion between paper wealth and real wealth, but the illusion cannot last forever and these tensions are bound to end in collapse. This can happen in a series of partial crises in one market after another, in one huge crash or a combination of both; however it happens; the bubble needs to burst” (Perez, 2002: 75-76). In addition, the historical motion of capitalism can be defined by the help of economic and non-economic factors and their interactions. Capitalism is linked to uncertainty and insecurity both in a negative and positive sense. Hence, the system is not in harmony or in balance, but in success and decay. This is true for companies, regions, nations and global economies. Towards equilibrium and disequilibrating forces can be regarded as fundamental problem of modern societies. Schumpeter defined this situation as creative destruction - two basic motions of the system’s ups and downs. Moreover, the creative entrepreneur plays a central role in the development process of the system. In this context, crises are not considered as exogenous shocks, but rather are endogenous phenomena which are integrated economic and political ground.

The financial, real and public sectors are interdependent sectors linked in an over deterministic way. This requires a holistic problem solving strategy and a viewpoint which is grounded on uncertainty.

References

- Alcoufle, A. and T. Khun (2004) “Schumpeterian Endogenous Growth Theory And Evolutionary Economics” " *Journal of Evolutionary Economics*, 14, 223-236.
- Burlamaqui, L. (2000), Schumpeterian Competition Financial Innovation and Financial Fragility: An Exercise in Blending Evolutionary Economics with Minsky's Macrofinance, Paper given at the 8th Schumpeter Conference Change, Development and Transformation, Manchester, U.K, 28 June – July.
- Diamond J. (2005), “*Collapse: How Societies Choose to Fail or Survive*”, Penguin Books, England.
- Dosi G. (1990) “Economic Change and Its Interpretation or Is There a Schumpeterian Approach” edited by Heertje –Perlman *Evolving technology And Market Structure*, University of Michigan Press.
- Ebner, A. (2000) “ Schumpeterian Theory And The Sources of Economic Development: Endogenous, Evolutionary or Entrepreneurial?” Paper presented at the International Schumpeter Society Conference on ‘ Change, Development And Transformation: Transdisciplinary Perspectives On the Innovation Process’ Manchester, 28 June-1July, 2000.
- Eichengreen, B. (2010), “The Crisis in Financial Innovation,” http://www.econ.berkeley.edu/~eichengr/crisis_finan_innov.pdf , 2011.
- Fagerberg, J. (2003) “Schumpeter and The Revival of Evolutionary Economics: An Appraisal of The Literature” *Journal of Evolutionary Economics*, 13, 125-159
- Foster, J. (2000), “Competitive Selection, Self-organization, and Joseph A. Schumpeter,” *Journal of Evolutionary Economics*, 10: 311-328.
- Foster, J. B. (2004) “The End of Rational Capitalism”, *Monthly Review*, :56, 10: 1-11.
- Freeman, Christopher (1988) *Evolution, Technology and Institutions A wider Framework for Economic Analysis*, Preface to part II. Technical Change and Economic Theory, Pinter publishers, London ed by G. Dosi, C. Freeman, R. Nelson, G.Silverberg and L.Soete
- Hanusch H. and F. Wackerman (2009), “Global Financial Crisis: Causes and Lessons A Neo Schumpeterian Perspective”, *Working Paper*, Institut für Volkswirtschaftslehre, 1-24.
- Heertje, A. (2006), “Schumpeter’s Model of The Decay of Capitalism”, J. Middendorp (ed.), *Schumpeter on the Economics of Innovation and the Development of Capitalism*, Edward Elgar Publishing, 2006: 29-40.
- Jacoby, R. (1981), *Dialectic of Defeat: Contours of Western Marxism*, Cambridge University Press.
- Leathera and Raines (2004), “The Schumpeterian Role of Financial Innovations in the New Economy’s Business Cycles”, *Cambridge Journal Of Economics*, 28: 667-681.
- Mokyr, Joel (1990) “Punctuated Equilibria And Technological Progress” *American Economic Review, Papers and Proceedings*, 80(2), 350-354.
- Otter and Siemon (2010) “ Can Capitalism Survive? A reconsideration of Schumpeter’s Thesis on The Self-destruction of Capitalist Society and the Crisis” , Conference Paper, *Schumpeter Conference 2010*.
- Perez C. (2002) “Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages”, Edward elgar publishing Inc, USA.
- Schumpeter, Joseph A (1934), *The Theory of Economic Development*, New York, Oxford University Press.
- Schumpeter, Joseph A. (1939) *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*, 2 volumes, New York: McGraw-Hill.
- Schumpeter, Joseph. A. (1943) *Capitalism, Socialism, and Democracy*, New York: Harper&Brothers Publishers.
- Schumpeter, Joseph. A. (1954) *History of Economic Analysis*. Allen and Unwin, London
- Schumpeter, J. A.(1989), “The Decade of Twenties”, R.V. Clemence (der.), *Essays on Entrepreneurs, Innovations., Business Cycles, and the Evolution of Capitalism*, içinde, New Brunswick, New Jersey: Transaction Publishers, 1989: 211-221.
- Schumpeter, Joseph A. (2005), “Development,” *Journal of Economic Literature*, 43: 108-120.