

Secondly, it is required to set up the pricing and exchange system for the financial assets (or called credit derivative products). Without the effective pricing and exchange system for the financial assets, more and more financial derivative products can come easily without any credit foundation. Driven by the profit, financial assets are exchanged or mortgaged repeatedly, credit derivative product chains are extended longer and longer, and finally nobody can know exactly who is the beginning, mid way or the end, With so many transactions, liabilities undertaker, capability of fulfillment, become vague. All participants are working alone and independently, nobody thinks about the risk management. USA financial crisis indicates it is because the repeatedly exchanging and mortgaging financial assets, nominal price fluctuations are more than real prices changes, mortgage symbolic value is more than the actual value, the hurt of repeated mortgaging of financial assets are more serious than others To some extent, this can explain why the sub prime loan in USA which takes small percentage share of total financial products can put such a high influence on the whole world economy and finance. The sub prime loan derivatives in USA are generated without the credit foundation, the worse thing is these derivatives are finally taken by others as mortgage assets. It is not the real entity who comes to the mortgage assets, the credit derivatives become mortgage assets, which result in the financial foams becoming mortgage assets. The longer the mortgage chain is, the greater the potential risks are, and the more devastating the crises are.

In a conclusion, under the modern market economy, there are more and more risks for the financial derivative products. One of the effective methods is to build a reliable credit foundation for financial innovations and an effective path is to establish a mortgage system based on the real value of the assets. This is all what we can learn from the USA financial crisis and it is also the requirements for the financial stability.

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**Challenge of the Complexity of Market Economy**  
**——The Predicament of Neo-classical Paradigm Highlighted by the**  
**Wall Street Financial Crisis**

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**Abstract:** The Wall Street Financial Crisis shocks the economy of the whole world, which once more highlights the defects of the simplicity of Neo-classical paradigm.

Analyzed by the scientific paradigm of modern complex system, the essential property of market economy possesses the complexity whether as the open system of self-organization or as the evolutionary human-system, such as its non-design, humanity, non-equilibrium, uncertainty, unpredictability and so on, all of which go beyond the control of economic rational programming . As the neo-classical paradigm refuses to acknowledge the important properties and cardinal aspects of market economy, and only makes efforts to disclose the simple aspect of equilibrium and neglects the deeper infiltration of the scientific paradigm of complex system into modern physics, chemistry, biology , evolutionary economics and chaos economics, not only its "Physics Admiration" has got into predicament ,but also its reputation as the function of explaining and guiding reality has lost gradually. The lessons should arouse the Marxist economists to make a deep introspection and should make contributions to the study of Marxist political economics.

**Key Words:**Wall Street Financial Crisis Self-organization Bcoming Uncertainty Economy Rational Programming Complex Human-system

## . Introduction

The Wall Street financial crisis threatens the entire world economy, and even forced the U.S. government to "rewrite the capitalism in 10 days". However, no matter how the Bush administrations performs , just as Paul Krugman , the 2008 Nobel prize winner in economics revealed in recent years that the government's policy objectives are to seek the interests for large consortia behind it and has been lying to the masses. (Krugman, P., 2008.) With the generation and spreading of the crisis, the once "brilliant" neo-classical paradigm has increasingly got into a dilemma. Mainstream economists are unable to explain the causes of the crisis and are not in a position to put a reasonable method to resolve it , thus highlighting the awkwardness of their dilemma.. Why? This is a significant issue both in theory and practice to which the Marxist economists should pay more attention.

Professor Zhang Zuo-yun argues that from the point of view of Marxist political economy, scholars both at home and abroad who advocate Western economics attribute the financial crisis and its disastrous consequences to such arguments as "the policy failure", "the separation of the financial activities from the physical economic activities, "the motivation of speculative psychology" or "the root of system ". All these arguments merely remaine at the phenomenon not disclose its essence, therefore are undesirable; the true reason lies in the fundamental contradiction of market economy, namely the contradiction of social production and localized possession (under capitalist conditions it has the private nature, while under socialist conditions the diverse nature) .(Zhang Zuo-yun, 2008.) Dr. Liu Ming-yuan pointed out that the arguments of "irrational acts of Subprime mortgage, " the

excessive expansion of virtual economy from the real economy," the Alan Greenspan's monetary policy anachronism," and "the failure of honesty" all show that they want to replace the root causes with the specific reasons, some even with the cause and the effect upside down ; and the roots of the crisis, in accordance with Marxist theory, lie in the basic contradictions of capitalism. And this crisis directly derives from the contradictions between production and consumption, as well as the over-expansive credit chain and its interruption. (Liu Ming-yuan, 2008.) These analyses are pertinent and thought-provoking.

From the point of view of Western economics some more thoughtful scholars also put forward some worth-introspecting viewpoints . Professor Cui Zhi-yuan of Tsinghua University pointed out that the paradox of "soft budget constraints" (in institutional level it refers to the limited liability companies, the central banks and "reconstruction of bankruptcy law", and in policy level it refers to the Securitization of assets) is the essential characteristic of modern market economy : and its existence in reality and indispensability will, in theory, become the insurmountable obstacles of neo-classical paradigm (Cui Zhi-yuan, 2008.) Professor Stiglitz from Colombia University believes that the prescription the "Washington consensus" given to developing countries means that: "as we say , not as we do ": the important reason for this crisis is that the regulators and operators are making risks in order to seek profit ,and the reforms the Bush administrations made doesn't guarantee that we will not face a similar crisis. Again, Skidelsky ,political economics professor emeritus from University of Warwick and author of Keynes biography prize winner pointed out that this crisis involves in one of the oldest problems at issue in the field of economics, that is, is market economy "spontaneously stable" or is it should be stabilized in terms of policy? The mainstream view of economics and market economy model still cycle time and again between the periods of the market-liberal cycle (government adjust and control-oriented ) and the conservative cycle (free competition-oriented ); the rotation cycle of economic model shows how far away it is for economics to be a science. It is difficult for people to imagine that the orthodox view would swing between two poles. in any natural sciences.(Skidelsky, R., 2008.) Although the above-mentioned views don't involve in depth the roots of the crisis, they implicit a major problem: the generation and spreading of the Wall Street financial crisis is the outbreak and crisis of the basic contradiction in capitalist market economy in practice and the salience and crisis of inherent contradictions of neo-classical paradigm in theory.

The practice of human beings' economic activities so far has shown that market , compared with other types which rely on tradition or on administrative order in organizing economic life, has superiority in realizing high-efficiency resources distribution. The increasingly overwhelming globalization of economy now is, in essence, the globalization of market economy system. Facing the rapid and acute turning in society and economy, the Chinese people have chosen socialist market economy as the means to realize its modernization in the tide of reform and opening to the outside world. Thus, it is necessary

to grasp the essential properties of market economy. Nevertheless, what people see through the neo-classical paradigm is a picture like this: it seems to be a secluded thermodynamics system and is “instinctively” going to equilibrium all the time and can just be described with the dynamic model of the theory of reducibility. The author of this paper, referring to the related arguments and views at home and abroad and on the basis of the generally accepted axiom that market economy is nothing less than the open and self-generating system, plans to anatomize the facet of complicity of market economy in essence, and meanwhile referring to the Wall Street financial crisis makes a brief review of the fatal defects of “simplicity” of the neo-classical paradigm as well.

## **II. Market Economy: the Open, Self-organizational System**

It may be an established conclusion in the schools that market economy is an open and spontaneously generating system. From classical time till present, the economic masters, different as they are in points of view, have no radical disagreement in this issue. In the beginning period when the school of economics was created, Adam Smith pointed out that market economy should be defined as the self-adjusting natural order. In his opinion, market economy is a self-adjusting system complying with nature, and so long as it complies with the natural order and the human nature, through the driving of egoism, the liberal competition and the adjustment of “the invisible hand”, it can not only satisfy the individual’s maximum interest but can increasingly accumulate more fortune for the society. Therefore it is open both to the world and the future (Smith, 1974). Marx may not agree with all of Smith’s opinions, but confirmed that: “In my opinion, the development of economic and social forms is a natural process in history. (1975,p12) Whether seen from the objective trend or from the aspect of self-generating path on which to rely, both the “natural history” and “natural order” have something in common. The premise of Marshall’s claiming that the economists’ goal lies in the economic biology rather than the economic dynamics is that “The nature was unable to leap.” (1964, both see p18) Soon after his classic essay “Why is Economics Not an Evolutionary Science”(1898) Thorstein Veblen published his essay in 1899, “The Theory of the Leisure Class”, describing the evolution of economic structure and institution of anthropological society by using the words of “natural elimination” and “process of adaptation” (1964,p138). In his opinion of capitalism, Schumpeter had the similar point of view with Smith’s and dissimilar from Marx’s, but in his essay “The Theory of Economic Development” (1990) he had the similar point of view with Marx’s in analyzing the innovation and the evolutionary process of market economy with a dynamic and developing point of view.<sup>1</sup> After that, when Hayek (1997, 2000)

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1 Schumpeter’s wife, Mrs Elizabeth pointed out that “Schumpeter has one point in common with

expounded his theories of “self-generating and spontaneous order” and “expended order”, he took market economy as his example and won the worldwide praise as a result. At the same time, many worldwide famous historians also described the market economy— “the world system”, as the product of “natural history” and as the process of “increasingly renovating its own structure” (Braudel, 2002, p6, p669), and as the naturally incessant process which experiences a “slow and delicate evolution”, (Wallerstein, 1998,p26) and then pointed out that “in the beginning, market economy is just one of a series of possibilities. (Duplessis, 2001, p15) In a word, market economy is not the product of human beings’ design on purpose, but came into its own spontaneously in a long period of time without anyone knowing its result. Therefore, as far as its open and spontaneous system is concerned, it seems that no one is able to put forward a cogent disagreement.

The terminology that economists used in defining the natural generation of market economy has gradually changed from Smith’s “natural order” to Hayek’s “spontaneous order.” In Hayek’s opinion it can also be replaced by the terms of “self-generating order” or the “self-organizing order.”( Hayek, 1997, p.7 Note 1). This just coincides with the self-organization theory of the scientific paradigm of modern complex system. Just as Hayek stated in the introduction to his work “The Fatal Conceit”, “This ancient point of view known in economics”, that is, “our value and institution are not determined only by the past established reasons, but a part of a self-organization unconsciously done by a structure or a pattern. This point of view is correct not only in the realm of economics but also in a larger domain, that is, in the science of biology as we call it today. This view is no more than the first member in an increasingly growing and developing family of theories. What it focuses on is some processes in explaining the complex structure, which exceeds our ability to comply with the individual environment and plays a decisive role for the concrete behavior of the environments. In the beginning when I studied the highly complex evolutionary form of self-order-maintaining work, I almost felt alone in doing it. But now, during this period of time, there are so many studies on these issues— they have various names such as theory of self-being , theory of controlling, inter-generated equilibrium, self-generating order, self-organization, synergetics, system-theory and so on — that I have to say that I have only made my little bit effort in the ever growing studies.” (2000, p4-5)

Now that people have no dispute on the fact of market economy’s natural

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Marx , that is, the opinion of the process of economic development .In his ‘Theory of Economic Development’, Schumpeter tried to come up with a point of view that “Economic change is not only decided by a pure economic theory of various outer factors which is pushing economic institution from one equilibrium to another.” In his introduction to that book in Japanese version, he said: The readers may understand it at once ( I am not clear about it in the beginning), that is, the concept and target (of Schumpeter’s) is identical with the concepts and targets structuring Marx’s economic theory. In fact, the reason why Marx was different from the economists of his time and the time before was that the specific process of economic development was resulted from the economic institution itself. Just because of this, economists generation after generation returned to his theory, though they may find that there was much to be desired in his theory.” (see Schumpeter, 1965,p2)

generation and having the property of openness, and even Hayek, who had made an authoritative conclusion, conceded that the study of market economy has something in common with the complex systematic science, we are in a position to define the market economy as an open, self-organizational system by using the concept of scientific paradigm of complex system. The complex systematic science or the self-organizational theory is a new paradigm which came into booming in the 70s' of 20<sup>th</sup> century, and has had a significant influence on modern physics, chemistry, biology, evolutionary economics, chaotic economics, behavioral economics, new institutional economics(Chen Ping,1988,2004; Day and so on,1996;Briggs, Peat 1998; Laszlo 2001;Dopfer and so on 2004 ; Foster, Metcalfe and so on, 2005; Jia Gen-liang,2004; ).If we say that the object of research that the classic science focuses on is the static "being" , while the one that the theory of self-organization and the science of complex system focus on is the dynamic "being", namely, "becoming", or rather, is the "evolutionary becoming", that is , the becoming that has a path to rely on and can weed through the old to bring forth the new. Just as Henri Bergson said, "The real theory of evolution has an eye to the realistic becoming and development. " (2004,p5) Obviously, market economy, as an open and self-organizational system, is a dissipative structure that keeps far away from equilibrium. As an open system, whether in the past, at present or in the future, it has to make exchanges of substance, energy, especially the information, inside and outside the system. Therefore it always keeps evolving. Someday when this kind of exchange halts because of some irresistible condition, it is the day that this system perishes or collapses. In the process of evolution, the time, in essence, is irreversible. So we can say the analytical tools of the scientific paradigm of complex system are appropriate for analyzing the natural properties of market economy. (Wang Xiao-lin,2006)

But what is complexity? According to the survey of Seth Lloyd of Massachusetts , there are at least 31 kinds of definitions. ( Hao Bo-lin , 1999 ) As complexity is one of the most complicated concepts in modern science, and the variety, diversity and variation are its intrinsic connotation, if only one kind of definition is accepted, the complexity itself may be denied. (Miao Dong-sheng, 2000) Even so, for the sake of demonstration, we can understand the complexity from the following aspects. Substance that can show its complexity, generally speaking, is a system which is composed of vast, heterogeneous and interactive units. Between units, between sub-systems and between sectors, the interactions are non-linear, the moving process is irreversible and the beginning value is strongly sensitive, showing all kinds of properties of self-organization(having some self-organizational kernel), openness, being far from equilibrium, strong adaptability, unpredictability, unreducibility. Hayek(2000) believed that the nature of complexity required that we should not attribute it to the unfullness of cognition process. Therefore, with the increasingly expanded "known", there necessarily follows more increasingly

human-perceived "unknown". Therefore we have to recognize the objective existence of complexity, and it will not disappear with the development of science and philosophy cognition.

As far as the market economy itself concerned, given that it has congenital properties of spontaneity, openness, and adaptability, we have to acknowledge that as an objectively existing vast system in society and economy, market economy is complex in nature. Herein, the spontaneity mainly means its nondesignability, lacking-of general-target and so on. Ferguson, the Scotland scholar who is as famous as Hume, said in his writings *History of Civilization*(1767,p188), that market economy is "the product of human beings' activity, not the product of human beings' design." (see Dopfer,2004, p215). Then, Smith divided the economic institution into two classes, one is the "man-designed" and the other is "natural", believing that market economy belongs to the "natural order", as if "an invisible hand", whose becoming and evolution are not made by man's conscious plans. It can be explained by classic Marxist writers like this: "This product can also be seen as a product of a force which functions as an entire, unconscious and involuntary force, since anyone's desire will be hindered by anyone else's and the final result is the one that nobody had expected. So up till now, the history hitherto is going on like a natural order." (Engles,1995,p697) On the other hand, Hayek, who was against Marx's historical materialism concept, also demonstrated the nondesignable property of market economy through the criticism of "constructing rationalism", the proof of "evolutionary rationalism", and through the differentiation of "target rule" and "regulation rule" (Hayek, 1997,2000).G.P.O' Driscoll even thought that "the principle of spontaneous order (or rather, it can be called "nondesignable order") can be seen as the first principle in economics." (see Hayek, 1997,p8) Moreover, self-evident are the internal relevance of nondesignability to the complex properties of uncertainty, bifurcation, novelty, variation, variety, diversity, unpredictability. Openness, another basic property of market economy, too, has a close bearing on the complexity. First of all, it keeps accompanying the non-equilibrium of the open system disclosed by Pringogine in his theory of diffusive structure. In this sense, openness means non-equilibrium. Second, through the phenomenon of non-equilibrium, it has an inseparable interaction with some complex properties, such as the up and down, bifurcation, uncertainty, unpredictability, novel creation, the sensitive reliance on the original condition, all of which concern the future development of diffusive structure system. Third, based on its interactive role with the above-mentioned properties, it self-entangles, in reality, with the complex properties of the non-linear, irreversibility, unreduceability of the open system. So much so that when speaking of the openness of one system, one cannot help thinking of its property of complexity. Once people realize that all of them are the basic properties of market economy, it means the end of people's belief of

its certainty. ( Pringogine , 1998) In addition, adaptability, another indispensable property of market economy, too, has a close tie with complexity. Speaking of adaptability , people cannot help thinking of the concepts that have a direct bearing with the complexity, such as self-organizational becoming, openness, selection, competition, learning, trial and error, adjustment, innovation, variety, diversity, harmony and co-existence and so on. In fact , it is just after market economy having embodied its merits of more adaptable when compared with other methods of economic activities, such as the methods of "traditional pattern" or " administrative order" that it gradually generates, comes into being and develops. According to the opinions of the authoritative representative of Saint Fee Institute, which is known for the research of complex science, "it is adaptability that breeds complexity. " (Holland, J.H., 2000)

In conclusion, as the self-organizationally generating, open and huge social and economic system with extremely strong adaptability, market economy is born to bear the property of complexity. Moreover, in the process of its existence and incessant evolution, complexity goes with it everywhere and becomes indispensable even for the least period of time. But, the reason itself isn't complicated. The properties of nondesignability, openness, adaptability and such factors as the non-linear, irreversibility, unreduceability ,innovation, selection, non-equilibrium, unpredictability, uncertainty included in the above-mentioned three properties will not disappear in its process( without it, market economy will sure to lose its own fundamental features and will change into other things. ). On the contrary, it will become more complicated in the whole process until the market economy system, because of some irresistible factors inside and outside of it, goes towards the extinction. In this sense, the non-man-designed market economy system with the congenital and increasingly strengthening property of complexity is always "without a clear goal" ( Hayek, 2000, p84 ) , so it is always on the road other than the fate of extinction as disclosed by the law of dialectics, a law which cannot be resisted by nothing.

### **III Market Economy: Human-related Evolutionary Complex System**

Although market economy is a self-organizational system, it is different from other self-organizational systems in nature. The fundamental difference is that it is a human-related self-organizational system. Market economy is the self-generating economic system in the process of evolution of the anthropological society, is the self-organizational system that is generated by the "masses' unconsciousness" in the practical activities when human beings address its own needs consciously. Human beings, whether out of the motives of sheer egoism or sheer non-egoism, or whether having

unlimited rationality or limited rationality, are always the subjective and target (or the home to return to) of market economy activity. There is no market economy without people or without people's participation. In other words, market economy has the human-related property. Maybe it is an undisputed fact.

Market economy, as the self-generating human-related system, certainly contains a great many properties of human beings. Of these properties, what influences the system most is nothing but human beings' conscious activity that is based on the social practice. Self-generating system is the product of amazing antinomy (Briggs, Peat, 1998, p285). Human beings, as the sage said, are half angel and half beast. Its wisdom and barbarity, its rationality and irrationality are always interwound together and influence their options and activities implicitly or explicitly. Human beings' barbarity, irrationality are similar to the spontaneity of market economy (in fact, this facet of human beings is an important factor for the being of market economy and has been playing an important role ever since), while their wisdom and rationality go against the spontaneity. Thus, as far as market economy is concerned, on the one hand, it has the intrinsic nondesignability and lacking-of-general-target because of its self-generation, on the other hand, it has the plan and concrete target because of the participation of people who perform practical activity and then want to make a rational control over it (converging towards the human-needed target, such as the equilibrium and Pareto Optimality and its improvement). And the opposite and co-ordination of the two parts have become one of the basic contradictions for the human-related self-organizational system.

Different as there is between market economy and other self-organizational systems in the nature, as for complexity, the former is not only the same as the latter but exceeds the latter to a great extent. As a self-organizational system, market economy bears all the complexities in this nondesignable and open system in the nature. And the human-related property, however, enables it to generate more dimensions<sup>1</sup> than other self-organizational systems, thus becoming "more complex". To be concrete, it can be analyzed from the following aspects.

First, the complexity generated by the dimension of rational control. Human beings have rationality (including "economic rationality"). It is where human beings are superior to other creatures and it is also the essential power with which human beings control the nature and society. However, along with the human beings coming into being with consciousness in the practical activities, there emerge problems of conflicts and co-ordinations, which did not exist in the nature before, such as conflicts and co-ordinations between the human-related world and the natural world, between subjective

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<sup>1</sup> Researches of Modern complex science and even the common differential equation show that the essential condition for the being of chaotic phenomenon is that the dimensions of system must be larger than or equal to three. It means here that the dimension of market economic system is higher than other self-organizational systems in the nature, so it is more complex.

and objective, between theory and practice. In market economy, these problems are embodied as the antithesis and conflict between economic rationalities or objects among different people, and the antithesis and conflict between the economic rationality or object and the spontaneity or nondesignability of market economy, and the contradictions caused by these problems. For example, the contradiction of concrete targets between individual rational economic creatures, between different economic groups, between different nations or governments; the contradiction of concrete target between individual economic creatures and economic groups, and nations or governments; and the contradiction between the above-mentioned target-minded individuals and groups and market economy—the "invisible hand" and so on. These contradictions are not only non-linear, uncertain, unreducible, but also automatically generated, self-entangled, changeable hinging on different people and things, hard to be equilibrium, and therefore, are more complex. Moreover because human beings have rationality they can understand and then make use of the laws of nature and economy. With more and more successes being made by using the laws, it has gradually become the inner impulse for human beings to dominate the natural and economic activities by using the laws in order to make rational control over them. We might as well call it human beings' "civilized instinct". However it has been proved by practice that because of the eternal limitations of the social and historical conditions and human beings' capability of cognition, human beings' rationality is limited as a result, their level of cognition and the extent of using the laws of nature and economy are also limited. Just as Popper once said; "There may be mistakes in science, because we are human beings and human beings may make mistakes". (1978, preface of the author, p1). When people are engrossed in the "unlimited powers" of instrumental rationality and rational construction, indulging in the success that human beings have made in dominating the laws to change the nature, they probably forget the fact that the power of rationality lies in critical afterthought and correcting mistakes, forget that what is unknown is unable to be designed or controlled, and thus getting into the mire of the "fatal conceit" (Hayek, 2000).<sup>1</sup> In addition, the nature and the laws of nature and economy will never satisfy people's needs voluntarily, especially, the laws are absolute only in the sense of "negativity" (such as man will die sooner or later, the perpetual motives cannot be created, the pie will never fall from the sky and something like that.). And in the sense of "positivity", only a possible space is regulated, but the limited rationality of human beings cannot master the space of possibility on the whole. Human beings would like to pursue the possibilities they like, but usually they are not within the possible space that can be regulated. This may be one of the leading sources for human beings' errors. In this way, market economy adds to itself the dimension of unavoidable man-designed mistakes and as a result, it becomes more complex.

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<sup>1</sup> In appearance, Hayek's "The Fatal Conceit" seemed to criticize the Planned Economy, but in fact, "the constructing rationalism" that he criticized also targeted on the static equilibrium analysis of neo-classical paradigm. (see Feng Yang, Zhou Cheng-qi, 2005)

Second, the complexity generated by the choice of value. Unlike the instinctive needs and choice of animals, human beings' needs are the ones that are consciously perceived and manifold, including the needs of material, spirits, moral, inter-communication and so on. Therefore, their choice is the conscious one that is guided under the specific values. It is undeniable that, perhaps, human beings' needs, values and choices have the facets of more generality, unity and homogeneity, but it is undeniable alike that human beings' needs, values and choices have more special character and variety and heterogeneity. Just as the latter cannot deny the former, the former cannot deny the latter thoroughly, either. But when it comes to handle the practical issues, people are more liable to face the latter. The activities of market economy are the ones that people consciously seek benefits, of which, "all the people struggled to win has something to do with their benefits." (Marx, 1956, p82) As is known to all, in most cases, it's hard for people to attain the consensus on the interest or form the uniform standard. Therefore, historically and practically, "interests" basically is unreasonable, it is usually no use just by relying on the logical arguments and patiently persuasion. The main approach to settle the disagreement in interest, perhaps, lies in the power. Any interest group, no matter how powerful it is, can hardly compel every one to accept its own interest standard voluntarily. It is particularly true for the individuals who generated the subjective consciousness in market economy. Thus, the conflicts and co-ordinations between different interests, including the ones between individuals, between individual and group, between different groups, between short-term interest and long-term interest and something like that, have become the extremely complex issues. In addition, as social being, human beings have developed the ethical concept system possessed only by human beings in order to deal with the inter-communication in their practice and activities. In market economy, whose core is to co-ordinate the inter-human beings' physical interest relationship, why people go after social fame, think highly of faith, applaud virtue? Because, by complying with these rules, at least, the transaction cost can be reduced, and it will also bring people benefit in the long run. In this sense, ethics can be as valuable as efficiency. ( see Smith, 1997, p233-241 ) However, like effectiveness, ethics varies among individual persons, so there emerges the complex property in standardizing and evaluating the economic creatures' behaviors, such as the variety, diversity, uncertainty, hard-to-be-equilibrium and so on. The reason is that the egoism and "sympathy" which derive from the "self-love", have the complexity of self-entangle, too,(or "overlapping-generations") and result in the ever-lasting interweaving with the self-entangle of "egoism" and "altruism" in human beings' economic behavior. Moreover, based on the limited rationality, such as the conscious needs, prediction, interest appealing, values, ethical standard, restriction of laws and so on, and without excluding the irrationality on which to base, such as feeling, will, passion, institution, perception, human beings' choices greatly outrun the animal's instinct of "seeking the benefit and shunning

the harm". If we say that the other self-organizational systems in the nature only comply with the principle of "survival of the fittest", then, market economy—the human-related self-organizational system, has another dimension— human beings' conscious choice. As far as human beings' conscious choice is concerned, when analyzed carefully, its extent of complexity really makes people amazed, The animal's instinct , the choice of "seeking the benefit and shunning the harm" focuses only on the near-future while human beings' conscious choice not only focuses on the near-future, but on the past and future as well. For one thing, it includes all the deposits of knowledge in the past and the expectation for the future. For another, it includes some influence of irrational factors and some subtle details. The subtle details cannot be overlooked in the critical time, because "Even the least fluctuation can make a decisive choice between different roads of evolution. This chaotic, non-classic decision-making process is called systematic 'bifurcation' ". (Laszlo,2001, p81) Further, in the activities of market economy, human beings have to make evaluation on the choice made on the basis of limited rationality and irrationality. And the evaluation will form a self-entangle with the above-mentioned factors of limited rationality and irrationality, directly influencing the economic creatures' choice and behavior in the future, adding new contents to the human-related self-organizational system.

The third, the complexity generated by the dimension of instrumental innovation.

In practical activities, human beings created the physical instrumental system("hard-ware" system) and the linguistic system("soft-ware" system). They are the wonders in the history of the cosmic evolution, adding to the nature a dimension of instrument that cannot be ignored. Thanks to the creation and application of instrumental system, human beings have become the most powerful species in the world. The production and ever expanding and innovating reproduction play an important role for the being and evolution of market economy.<sup>1</sup> The function of it is brought into an unprecedented full play after the being of the market economy system, and surely it will bring about indispensable and unpredictable influence on its further evolution. In view of the obvious innovative function of the physical instrumental system, we, herein, will emphatically analyze the vast innovative function and the complexity of the "soft-ware", that is, the language. The linguistic system is the innovation belonging only to human beings, and is the most unique "symbol" system in the being of human beings, the one not to be generated by other natural species. The inherent structure and various elements included in the "meaningful world", such as the interaction, relevancy , substitution and iteration, self-entangle ,transcendence , novelty innovation are all inseparable with human beings'

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<sup>1</sup> It is not hard to understand that conclusion if we recall the inventions and applications of steam engine, telephone, radio, electric light, motor, aeroplane, television , atomic energy, computer, super highway, internet, fibre-optic cable, and the influences of Newton's Mechanics , Theory of Relevance, quantum mechanics, system theory, theory of diffusive structure and "An Inquiry into the Nature and Causes of the Wealth of Nations", "On Capitals", "The General Theory of Employment, Interest and Money" , and the catalytic role of compass, papermaking, printing and the gunpowder.

conscious sense. Therefore, it is completely as complex as human beings' brain. Ernst Cassirer pointed out that: "The real symbol of mankind isn't embodied by its uniformity, but by its variety. It is not rigid and dull, but flexible and changeable." "In the course of mastering the language, human beings always hold an actively innovative attitude. " (1985, p47, p285) The "objective knowledge" or "World Three" which is based on the linguistic system or the "symbol" not only have complex inter-action with "World One" (physical world) and "World Two" (spiritual world), but have a unique evolutionary process of its own. The prominent feature of this evolution is the novel innovation, which is unpredictable and uncontrollable. (Popper, 1987) In a sense, all the innovations in market economy have a close bearing on the development of World Three. The profuse use of such concepts as "information society" and "knowledge economy", and the compelling campaign of media advertisements, online banks and powerful electronic commerce are all the reflection of this inherent relevancy. In modern market economy, information is one of the most important resources, both for profit-earning and innovation. But the intrinsic asymmetry and incompleteness of information, "the white noise" and something like that added to the choice , evaluation, decision and innovation more complexity, such as uncertainty, unpredictability and restiveness. Innovation is the inexhaustible driving force for the evolutionary development of market economy Laszlo said that "Evolution isn't a fate, but an opportunity , future isn't forecast, but creation." (2001, p2). However, opportunity is to be met with, not to be wished for, and the innovation is unpredictable and uncontrollable, so the complexity is more obvious. Up till now, market economy is the most effective mechanism to bring the individual's dispersed knowledge into full play, and human beings themselves are the being of conscious transcendence, and this feature becomes more salient after the being of market economy. Just as Hayek said, "Human nature has unlimited varieties—individual's capability and potential varies in a broad way— which is just one of the most unique natures of human beings. " (1997, p103) With the unlimited diversity of individuals' capability and potentiality, the unlimited variety of dispersed knowledge, the unlimited likelihood of the symbol and the composition of its meanings, the unlimited openness of knowledge expansion, and then the unlimited perspective, which is formed by mutual composition in the open system of market economy, the complexity of market economy exceeds that of other self-organizational systems far and away.

When compared with other established market economy models,<sup>1</sup> China's socialist

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1 A good many scholars in Britain(including professor David Mclellan from Kente University, professor Chris Brown and professor Mick Cox from London Economic and Political Institute, professor Gareth S. Jones from Cambridge University, professor Christopher Pierson from Nuodinghan University, professor Russell Keat from Edingburg University, professor Vincent Geoghegan and professor Shane O'Neill from Berfast English Queen University ) believed that the market economy in the world can be classified as follows: liberal market economy model in the U.S.A and Britain, social

market economy shows not only the common complexity but the complexity of its own as well, so much so that it can be called the most complex system. In contrast, it can be analyzed as follows: First, the complexity generated by the dimension of practice and innovation. It is really an unprecedented creation in the history of human civilization to combine organically the basic system and values of socialism with resources distribution patterns and related theories of market economy both in theory and in practice, and then to blaze a road of socialist market economy with Chinese Characteristics. It is a novelty no one can deny. It's also true that China's socialist market economy is not only different from the original market economies in the UK, France and the U.S.A, but also different from the unoriginal market economies in Japan, Korea and Singapore, of which, the most prominent difference lies in the conflict between the intrinsic socialist values and system arrangement, which aims at serving the interest of overwhelming majority, and the values and system arrangement of market economy, which only serves the individual interest.(Wang Xiao-lin,2002) On the one hand, China's market economy should make use of the function of market economy in distributing the resources with high efficiency. On the other hand, it should shun the emerging of the irreversible acute polarization. Therefore, in the turning period of China's society and economy, how to solve the worldwide difficult issue in history, that is, to realize the majority-accepted "equilibrium" between the efficiency and equality, has become unprecedentedly complex. Second, the complexity generated by the dimension of historical traditions. Among various historical traditions, the most prominent complexity is none other than the "dimension of petty peasant conventions", which can be classified to the natural economy tradition, and the "dimension of visible hand", which can be classified to the planned economy tradition. In speaking of the petty peasant customs and conventions, we mean the concept, sense and the corresponding systems, rules and implicit rules, which developed in the condition of long-term natural economy. Meanwhile it coincides with the needs of market economy in its spontaneity, egoism, and shrewdness. On the other hand, its anarchism, inefficiency, non-diversity, ideas of stick-in-the-mud, lacking of lawful sense, tending to solve the dispute by means of implicit rules are all incompatible with market economy. Especially the anarchism and the lacking of lawful sense are two vast obstacles that have to be removed away in implementing socialist market economy. It's really one of the hardest nuts for human beings to crack to change people's sense, customs from top to bottom. In addition, there is the complexity which is generated by the dimension of "visible hand". Since the socialist market economy of China derives from the planned economy, no doubt, the-decades-year-long "Collective Administration" of planned economy and the thousands-of-year-long convention of "Uniform Administration by Man"

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market economy model in European Continent represented by Germany and France, Government-dominated market economy model and market socialist model being implemented in Japan and some other Asian countries. And the socialist market economy being implemented in China is a unique market economy model.(see Yang Zong-li and so on, 2005)

surely have a significant influence on it. In reality, the key to the healthful development of socialist market economy, perhaps, doesn't rest on the necessity of the government's adjustment and control, but rest on the forms with which the government applies in adjustment and control: the form of administration by law or administration by man? The turning from "administration by man" to "administration by law" concerns a series of extremely complicated problems, such as vested interest, concept and sense, design, arrangement and implement of the institution. So it will be an unprecedentedly complex process. Third, the complexity generated by the dimension of "Space Time Deflation". When the Chinese nation announced to the world, after over 100 years' struggle that, the Chinese people have stood up again, the modern civilization which is represented by market economy, has become the dominant system in the world. The Chinese people have to face straightly the harsh reality of the existence of the large gap between China and the modern civilization, have to start from the basis of "undeveloped reality", which was left behind from the semi-colony and semi-feudalism, and have to begin the hard struggle for its modernization under the dual pressures, one from the internal driving force of its eagerness to realize the national renaissance, the other from the outer pressure of advanced modern civilization. In the report of the 16<sup>th</sup> National Congress of the Communist Party of China, China announced that it strives to realize modernization at the 100-year anniversary of the foundation of the People's Republic of China. It means that China plans to spend some 70 years of time (from 1979-2049) completing the route which some developed western countries took 200-300 years or so to finish. At present, some highly thorny and hard issues confronting China are as follows: the original accumulation of capital, the effective way of curbing polarization, the dissolving of dual structure between city and countryside, the comparatively higher indicator of per capita GDP, the modernization of residents' educational level, the inversion of mental labor and physical labor, the success in establishing social security system,( a project that will benefit all the people), the vast population and the follow-up employment pressure and issues concerning agriculture, countryside and farmers. To solve all these problems within such a short period of time, only by the method of "peace and development" rather than resorting to war or to the overseas colony expansion makes China meet unprecedented complexities.

In a word, the reason why market economy is more complex lies in the fact that the new, human-related dimension makes its own total dimension higher than any other self-organizational systems in nature, thus generating manifold new contradictions, such as rational control and nondesignability, which are not existing in the nature. As a result, the complex extent of market economy is higher than any other self-organizational open systems. Meanwhile, the spontaneous and nondesignable properties of market economy are compatible with the facet of human beings' irrationality, but incompatible with the facet of human beings' limited rationality. (That is, "the civilized instinct", which is generated to satisfy one's own needs and put it under rational control). Therefore, they have been in the

state of antithesis and conflict, and the tension of the two parts is just the fundamental driving force for the incessant evolution of market economy.

### **Neo-classical Paradigm: the Awkward Situation of “Admiration of Physics”**

Ignoring the fact that market economy is a human-related self-organizational system with such complex properties, the neo-classical paradigm, which still dominates the mainstream of economics up till now, has been insisting on the analytical tradition of Newton's classical mechanics paradigm and for the sake of study, has analogized it to the thermo-mechanics system, which has the trend of "automatically going" to equilibrium. According to Dopfer, "On the basis of the perspective of resources equilibrium, it is a symbol of neo-classical economics to describe the market order in the way of mechanics. " (2004,p3)After having analyzed the productive factor and rational prediction, He Meng-bi also pointed out that because the neo-classical economics "presumed that equilibrium was the normal state of the (economic) world, and denied that there was no deliberate cause and effect relevance in mind, " it is "the economics without mind". (see Dopfer, 2004, p86-91). Being used to the thinking pattern of the reducible theory such as the Newton Mechanics linear definition, time reversibility, and being over superstitious of the mathematical instrument of equilibrium, the neo-classical paradigm reveals its defect in complex thinking. Generally, applying the rational thinking and "Occam's razor" and simplifying the research objects' complexities into some most basic units and then establishing the theoretical and mathematical models in order to disclose the law of movement are the simple principles that every theoretical research should comply with, and there is no exception in economics ,of course. The question is that while the principle of simplicity is indisputable, the simplicity of thinking is under discussion. For instance, from the analysis method of Marshal's partial equilibrium to the analysis method of modern Game Study , the objects are basically defined within the range of "Two Body Play the Game of Chess" (consumer and merchant, or consigner and agent) as the optimum theory can only deal with the problem concerning two body. However, the reality of economic life itself is complex, the dimensions of market economy are plural, so the dual thinking pattern cannot completely reflect the complicated real life. Lao-zi said: One generates two, two generates three, three generates everything in the world. Once the mathematical model enters the three body, there exists no-analytical solution, the no-integration(with which the simple and systematic addition cannot be sought) becomes more obvious.(Wang Xiao-lin,2006) And the number "Three" seems to be the key point in the complex system. Researches of Modern complex science and even the common differential equation show that the essential condition for the being of chaotic phenomenon is that the dimensions of system must be larger than or equal

to Three(Chen Ping,2004,P454-464). The study of chaotic economics also shows that Circle Three does mean chaos(see Day,1996, p63-67 ). Herein, the difference between "Two" and "Three" doesn't lie in whether the principle of simplicity is followed, but in whether complex thinking is introduced.

Robert Delorme (2005) made a comparison between "the classic axiom system for analytical model setting", which was followed by the neo-classical paradigm and "the fundamental principle complexity model setting", and pointed out that the former advocated "setting the model to analyze the substance through three axioms". A and B respectively represent proposition and entity. 1. Consistency: A is A. 2. Non-contradiction: A cannot be both A and non-A at the same time. 3. Law of Excluding Middle. There exists no B that is both A and non-A. The latter advocates "setting models for the complexity on the basis of four principles. 1. Relationship: the basic phenomenon is some relationship between the different A and B. 2. Consistency: For the given relationship, A is A. 3. Non-negativity. Under the condition of Principle Two, A cannot be both A and Non-A. 4. Law of Included Middle. For the given A and non-A, there exists the C, which is A and non-A. " (see Foster, M., 2005, p94). The differences of the two parties are as follows: First, the former thinks that the object of the study is only proposition and entity, while the latter thinks that the object of the study is the relationship between themselves and the relationship of each other. Second: the former only acknowledges that the object has the facet of certainty and then masters the object in accordance with it, while the latter, on the basis of it, also acknowledges the existence of uncertainty and then master the object in accordance with the intrinsic uncertainty of the object. Third, the former only adheres to the formal logic while the latter also adheres to the dialogical logic on the basis of acknowledging the formal logic. The connection of the two parties is that: A. in each of the above-mentioned "three differences", the latter contains the former; B: both the former and the latter adhere to the "consistency", but the latter contains the former at this point. Therefore it is easy to see that what the former adheres to is an absolute, unchangeable, deducible and certain research paradigm, which is propped up by the thinking pattern of ontology and classic mechanics of the traditional philosophy concept, that is, "the bipolarity is antithesis, either must be taken", (make or break)so that people "have to compete to be the first". However, what the latter adheres to is an absolute and relevant, unchangeable and changeable, deducible and inducible, certain and uncertain (both opposite and uniform)research paradigm, which is propped up by the thinking pattern of Practice(or "Relationship") and scientific paradigm of complex system of modern philosophy, that is, "unity of opposites", "the contradiction is complementary", so "uniformity must be sought".(Wang Xiao-lin,2004) In comparison, the former is easier to deal with, so it is simpler, and the latter is harder to deal with, so it is more complex. Therefore, the difference between the two parties, in a nutshell, lies in the diversity of simple thinking and complex thinking.

Delorme believed that "The controversy inside the economics mainly involves the consistency of classic logic, which acts as the axiomatic system of the final basis. The shortage of this consistency is still the main critic of the mainstream to the heresy." (see Foster, M., 2005,p94) Peter.M.Elen (2005) pointed further that: "In the past, the expectation of disposability resulted in such strong presumption as equilibrium." (see Foster,M., 2005, p345) As is known to all, the "consistency" and "disposability" are the basic reproaches of mainstream to the heresy. Nevertheless, when analyzed carefully, the reproaches themselves are not beyond reproach. First, the consistency insisted on by the neo-classical paradigm only concerns the logic rigidity of mathematical deduction, but the rigid mathematical deduction can only ensure the authenticity of logic, and hardly ensure the authenticity of the facts. However, the consistency of mathematical deduction of the neo-classical model is acquired just at the expense of its consistency with that of the economic reality. In fact, the most rigid mathematical logic is "inflexible", even the least "flexibility" is against its nature. Although the real economic activity has its laws, its logic is somewhat "flexible", allowing of various deviations, errors, even paradoxes. As a result, the logic flexibility of neo-classical model and the "logic inflexibility" of the real economic activity stand between sharp conflicts. The more people emphasize on the logic inflexibility of economic model, the farther it will deviate from the reality of economic activity full of flexibility. Second, the disposability that the neo-classical paradigm insists on, in fact, reflects its man-designed selectivity, which just forms a vivid contrast to the "objectiveness" it advocates. The so-called "disposability" is to study the economic problems within a standard analytical framework, that is, 1. defining the economic situation, 2.establishing the behavioral presumption, 3. setting up the institutional arrangement, 4. selecting the harmonious result, 5. making evaluation and comparison. Moreover, the study methods required that research platform be provided, reference coefficient be established, measure yardstick be given, and analytical instrument be furnished. (Tian Guo-qiang, 2005) Apparently, all the realistic activities described in the above-mentioned key words—"defining, establishing, setting up, selecting, making", which are concerning the research framework, and "provide, establish, give, and furnish", which are concerning the research method—bear the man-designed nature, and have an inner relevance to the selection, whose subjects are based on the quality, the learning, the position, the practical experience, the social group hierarchy, and the belief, disposition and so on. The essence that the disposability focuses on is the simplicity. However complicated the real situation is, once put into such a framework and applied in this approach, it will surely become "simpler" (not excluding such fact as rather "complicated instrument" is used). However, whether a rather simple description still has the full reality so as to be useful is where all the problems lie. (Elen, 2005, see Foster, M.,2005,p345) In a word, the disposability that the neo-classical paradigm insists on is, in essence, "the simple selection", which is made on the basis of human beings' limited capability(easy to control, easy to operate, easy to run) and is compatible with people's will.

Nevertheless, It is here that both the reasonability and limitation lie. We have to acknowledge that human beings' rationality and capability of cognition are limited, that it is the intrinsic function of market economy to go to equilibrium through competition and supply-demand game, and that going to and then realizing the equilibrium not only comply with human beings' needs, but can be disposed by the economists as well. Therefore if only people don't give up the "civilized instinct" with which they can make the rational control of market economy, the basic presumption of "simplicity" of neo-classical paradigm and equilibrium will have the eternal charm. Because the neo-classical paradigm, in essence, considers only the human beings' will and limited capability, it not only goes against the pure objective principle it always advocates, bringing about problems in the consistency of logic and nature of science, but also does not comply with the intrinsic complexity of market economy, bringing about problems in its realistic consistency and application. The key point is that neo-classical paradigm only analyzes the facet of simplicity, which is compatible with people's will and easy to handle in the implementation of market economy, but it ignores the facet of complexity, which is intrinsic, and perhaps not compatible with people's will and hard to handle. This may be the biggest defects of classical paradigm.

Francisco Louka(2005) pointed out "that as chaos is not restricted to the special models with some low-dimension attractive factor—some static point or stable increase— it has become the rather unpopular developing branch in economics. Then, arises a paradox, that is: the newest chaos theory and complex science are rapidly developing in the domain of physics in spite of the fact that the maximum paradigm of economics derives from physics, which has a special significance to the cognition of economics" (see Foster, Metcalfe, 2005, p281). The neo-classical paradigm, however, turns its back on it with an arrogant silence. Brook (1991) called it as the awkward situation of "admiration of physics" in economics. At the St. Fee Session in 1987, Anderson, winner of Nobel Physics (1988) and eminent physicist Ruelle(1988) both criticized the equilibrium concept of neo-classical paradigm with a joke that "there exist differences between the points of view in physics and the presumption of economists. " (see Foster, M., 2005, p291-292).

### **Conclusion with no full stop**

The realistic existence of the complexity of Market economy challenges to the neo-classical paradigm, revealing the deviation of this paradigm from the essential property of market economy, and the Wall Street financial crisis even more highlights this deviation. After all, the neo-classical paradigm only stands for people's desire to attempt to control economic operation by means of economic rationality, but the uncertainty of the complexity of market economy in essence has made this desire shatter constantly. One of the important lessons drawn from the Wall Street financial crisis may be like this: the mainstream

economists can not explain the generation and spreading of the crisis in terms of neo-classical paradigm and cannot be able to make effective solutions by means of this paradigm ; the mainstream views in economics and the corresponding economic policies bounce between the two poles called "liberalism" and "conservatism",making the "objective and scientific nature"which the neo-classical paradigm taking a pride in become "the emperor's new clothes ", and the fatal defects of the " simple" neo-classical paradigm's increasing deviation from the complex market economy lays bare more clearly and the "systemic risk" of its theoretical doctrine is approaching the brink of outbreak. Such lessons from Western economics are enough to make Marxist political economics draw a lesson.

"Change is eternal, there exists nothing without change." (Wallerstein, 1998,p1) It is a problem worthy of being considered that whether the marxist political economics, research sticks firmly to the thinking pattern of simplicity, still persists in the concept that "other conditions being unchangeable, all the changes be coped with by the concept of unchangeability", or faces straightly the challenge of complicity and keep up with the time in handling the changes. Doubtless, market economy has the facet of "simplicity" in appearance, which goes to equilibrium by means of competition and supply and demand game, but the nondesignability, human-relatedness, non-equilibrium, unreducibility, uncertainty, unpredictability are all the natural properties of the open , self-organizational system. Moreover, it also possesses the facet of complicity. In the whole process of the becoming, developing and even perishing of market economy, the former is special and abnormal while the latter is general and normal. Such being the case, the research of Marxist political economics has to envisage and probe in depth into the complexity .It is 21<sup>st</sup> century, and new developing opportunities are being bred in economics. The practical thinking pattern of modern Marxist philosophy—"seeking uniform" in the course of "unity of opposites and complement of contradictions" and the complex systematic science have already provided a batch of useful instruments,which enlighten people to get out of the set thinking pattern of bipolar opposition and bouncing between the "liberalism" and "conservatism" and explore a new route of theoretical research in accordance with the complex reality of the market economy, In short, for market economy, the most certain thing is the uncertainty caused by its complexity, and both the "invisible hand" and the "visible hand" are human hands. Along with people's increasing consciousness in handling the essential property and law of operation of the market economy , the "invisible hand" will embody itself more clearly in the form of "visible hand". If only people step out of the trap of "fatal conceit", and pay attention to "another profound truth opposite a piece of profound truth" as Niels Bohr ,the guru of Quantum mechanics said, and put into the existing box of economics the above-mentioned new concepts so as to develop a new concept box, the research of Marxist political economics may be sublimed into a new realm. (English Translated by Associate Professor Liu Zhi-an)

## References

- [1]Bergson, Henri,2004. L'evolution Creatrice. Chinese Translation. Commercial Publishing House, Beijing.
- [2]Braudel,Fernand,2002.CIVILISATION MATERIELLE,ECONOMIE ET CAPITALIME,XVe-XVIIIe SIECLE,TOME I. Chinese Translation. Sanlian Bookshop, Shanghai.
- [3]Briggs,J.,Peat,F.D.,1998.Turbulent Mirror. Chinese Translation. Commercial Publishing House, Beijing.
- [4]Cassirer,Ernst,1985. An Essay on Man. Chinese Translation. Shanghai Translation Press.
- [5]Chen Ping,1988.Chen Ping's Woeks —— Seal,Lash,Evolution. Heilongjiang Education Press.
- [6]Chen Ping,2004.Civilization Bifurcation, Economy Chaos,and the Dynamics of Economic Evolution.Beijing University Press.
- [7]Cui Zh-iyuan,2008.The Paradox of Invisible Hand Paradigm and Present Finance Crisis.*21<sup>st</sup> Century Economy Repoet*.27 Sep.2008.
- [8]Day,L.H.,etc.,1996. Chaos Economics. Edited and Translated by Fu Lin etc.. Shanghai Translation Press.
- [9]Dopfer,Kurt,2004.Evolutionary Economics Program and Scope. Chinese Translation. Higher Education Press,Beijing.
- [10]Duplesis,R.,2001.Transitions to Capitalism in Early Modern Europe. Chinese Translation.Liaoning Education Press.
- [11]Engls, Friedrich,1995.Seleted Woeks of Marx and Engls.V.IV. Chinese Translation. People Press, Beijing.
- [12]Feng Yang,Zhou Cheng-qi,2005.Market Order and Government Regulation —— Hayek's Interpretation and his Criticism towards Neoclassical Economics.*Nankai Economic Studies*,Vol.21,No.5,Sep./Oct., pp7-13.
- [13]Foster,J.,Metcalf,J.S.,2005.Frontiers of Evolutionary Economics: Comperitition, Self-Organization and Innovation Policy. Chinese Translation. Higher Education Press,Beijing.
- [14]Hao Bo-lin,1999.The Portral of Complexity and Complex Science.*Science*,No.3,Mar.,pp12-16.
- [15]Hayek, Friedrich A., 1997. The Principles of the Freedom Order. Chinese Translation. Sanlian Bookshop, Shanghai.
- [16]Hayek, Friedrich A., 2000.The Fatal Conceit. Chinese Translation. China Social

Sciense Press, Beijing.

[17]Holland,John H.,2000.Hidder Order: How Adaptation Builds Complexty. Chinese Translation. Shanghai Scientific & Technological Education Press.

[18]Jia Gen-liang,2004.Evolutionary Economics —— The Source of Economics Revolution. Shanxi People Press.

[19]Krugman,Paul,2008.The Great Unraveling: Losing Our Way in the New Century.China Machine Press.

[20]Laszlo,Ervin,2001. The Whispering Pond. Chinese Translation. Social Science Literature Press, Beijing.

[21]Liu Mingyuan,2008.The Subprime Lending Crisis in USA in the Perspective of Political Economics. *Studies on Marxism*,No.11,Nov.,pp28-34.

[22]Marshall,Alfred,1964.Principles of Economics, V.I. Chinese Translation. Commercial Publishing House,Beijing.

[23]Marx, Karl, 1975.On Capital, V.I. Chinese Translation. People Press, Beijing.

[24]Marx,K.,1956.Colleted Woeks of Marx and Engls.V.I. Chinese Translation. People Press, Beijing.

[25]Miao Dong-sheng,2000.On Complexity. *Natural Dialectics Dispatches*,No.6,Jun.,pp87-92.

[26]Popper,Karl R.,1987.The Evolution of Scientific Knowledge—— Selected Works of Popper's Scientific Philosophy. Edited and Translated by Ji Shuli. Sanlian Bookshop, Shanghai.

[27]Pringogine,Ilya,1998. The End of Certainty: Time,Chaos,and the New Laws of Nature. Chinese Translation.Shanghai Scientific & Technological Education Press.

[28]Schumpeter, Joseph A., 1990.Theorie der Wirtschaftlichen Entwicklung. Chinese Translation.Commercial Publishing House, Beijing.

[29]Schumpeter, Joseph A., 1965.Ten Great Economists: From Marx to Keynes. Chinese Translation. Commercial Publishing House, Beijing.

[30]Skidelsky, Robert ,2008.Bye,Revolution of Neo-classicism. 23 Sep.2008.  
<http://humanities.cn>

[31]Smith, Adam, 1974.An Inquiry into the Nature and Causes of the Wealth of Nations. Chinese Translation. Commercial Publishing House, Beijing.

[32]Smith, Adam, 1997. On Morals and Sentiment. Chinese Translation. Commercial Publishing House, Beijing.

[33]Stiglitz, Joseph,2008. How Keep Watch Next Wall Street Crisis?19 Sep.2008.  
<http://humanities.cn>

[34]Tian Guo-qiang,2005.The Basic Analytical Framework and Methodologies in Modern Economics.

*Economic Research Journal(Monthly)*, Vol.40, No.2, Feb., pp113-125.

[35]Veblen, Thorstein, 1964. *The Theory of the Leisure Class*. Chinese Translation. Commercial Publishing House, Beijing.

[36]Wallerstein, Immanuel, 1998. *The Modern World-System, V.I*. Chinese Translation. Higher Education Press, Beijing.

[37]Wang Xiao-lin, 2002. "Socialist Market Economy: a Selection Full of the Wisdom of Seeking the Law from Practice" , *Modern Finance And Economics\_ Journal of Tianjin University of Finance and Economics*, Vol.22, No.2, Feb., pp5-10.

[38]Wang Xiao-lin, 2004. "Strive for No One" or "Seek Unity" —— The Mode of Thinking on Practice and its Inspiration for Economics Research. Economy Science Press, Beijing.

[39]Wang Xiao-lin, 2006. Economics Paradigm: Logical Puzzles, Reality Paradoxes, and Possible Ways out. *Economic Review*, No.2, Mar./Apr., pp45-51.

[40]Yang Zong-li, Yang Ming-wei, Xie Fan, 2005. Scholars both at Home and Abroad about the New Viewpoints of Socialist Market Economy. *Thought and Theory Education Journal*, No.11, Nov., pp74-79.

[41]Zhang Zuo-yun, 2008. The Sources and Creation Mechanism of Finance Crisis and Its Possibility in China. *Studies on Marxism*, No.11, Nov., pp21-27.