China.org.cn

Economic quantum entanglement may subvert the traditional concept of international competition

By CCIEE research team
China.org.cn, November 11, 2016

CCIEE (China Center for International Economic Exchanges) postdoctors "economic quantum entanglement" research team

In 1997, Myron Samuel Scholes was awarded the Nobel Memorial Prize in Economic Sciences for the Black –Scholes model, started a precedent for quantum economics. Then Stephen Char, a famous person in the field of global game theory, based on the theory of "quantum economics", deduced the world's most advanced "quantum economy" mode. Quantum economics challenge the three pillars of Economics -- microeconomics, macroeconomics and econometrics, but Scholes has not been able to solve the problem of global economy recovery and future mystery. With the Chinese first quantum satellite 'Mo-tse' successful launched, people's scientific thinking was pulled into the "economic quantum entanglement" category. The study observed that the global economic recovery process appeared phenomenon of "economic quantum entanglement".

The economic situation

All countries in the world felt the economic downturn and lingering in 2016. Western countries, headed by the United States hard to get out of the economic quagmire, Federal Reserve entered expected interest rate hike cycle, crude oil and other commodity prices fell sharply, the geopolitical crisis, Europe refugee flows, Britain exiting from the EU, the United States presidential election and other factors on the impact of the economy, the world economic growth rate in 2016 was lower than expected. China is also influenced by the global economic environment, the slowdown of Chinese economic growth but not stall. Like the world's first satellite launch quantum, China offered a series of Chinese ideas and Chinese scheme on leading the world economy out of predicament, in order to solve the fundamental problems of the world economy growth.

Refer to microscopic level of quantum mechanics, Stephen Hawking considers that material can escape from the black hole. According to his prediction, the black hole continues to spray materials, which he called "Hawking radiation". The fundamental point of view of quantum mechanics and the theory of black hole: any material could not escape the black hole. Edward Witten from The Institute of Advanced Study Princeton said "although the black hole never ejects swallowed astronaut or benches, but it will eject the basic particles or atoms." In the quantum world, the property and relationship between material and energy can be converted into great energy, if the great energy from this transformation can be used in the global economy recovery, which can completely solve the problem of global economic recovery.

The global economic system is a complex giant system. According to the IMF and the United Nations' data in the past 10 years to make IGAB ('Important Global Affairs baseline' English referred to as: IGAB) analysis showed that 'economic quantum entanglement' phenomenon: From now on to a long time in future, global economic recovery will continue to trial the wisdom, strength and endurance of each economies, also this will be a trial of innovation and leadership of the main countries in the world. Firstly, the EU economy, which to determine the fundamentals of the global economy, is looking forward to major reform and innovation, to get out of dilemma caused by the refugee crisis and the Britain exiting from the EU. Secondly, the North American economy, as the engine leads the global economic development, is looking forward to major breakthroughs in science and technology, being the new driving force for economic and social development; also is looking forward a new order, more conducive to stimulate global economic recovery healthy. Thirdly, the global emerging market countries are slow down the growth rate, due to the lack of scientific and technological power, and in the call for new technology and advanced knowledge with scientific, reasonable and low carbon green sustainable development. Fourthly, there is an urgent need to provide scientific and appropriate reform experience and successful program for less developed economies, such as the way of life, the way of study, the mode of production and the progress of society.

Quantum entanglement

In quantum physics, quantum entanglement is a systemic state composed of multi particles, cannot be separated into single particles which is consisting of the state, in this case, an individual particle state is called entanglement. Entangled particles have amazing properties against the general intuition. For example, the measurement to a single particle can cause the wave packet of entire system collapse immediately, so it also affects the other, distant, entangled particles with the measured one. This phenomenon does not violate Special Theory of Relativity, because in quantum mechanics, you can't define particles before measuring them, they are still a whole. But after they were measured, they would be out of the state of quantum entanglement. In quantum mechanics principles, as a basic theory, Quantum decoherence should be applicable to any size of physical system, that is to say not only limited to be used in micro system, so it should provide method of transition to macroscopic 'classical' physics.

The existence of quantum phenomena presents a question, that is, how to explain the classical phenomena from the view of quantum mechanics. Especially, how to apply the superposition state of quantum mechanics to the macro world? That cannot be seen directly. In 1954, Einstein wrote a letter to Marx Bonn's, proposed how to explain macroscopic object's localization from the angle of quantum mechanics, he pointed out that the quantum mechanical phenomena is too 'small' to explain this question. Quantum entanglement in Quantum Science and technology system refers to the non-field and non-classical correlation between two or more quantum systems. There are deep inner connections in the universe, between any two substances, no matter how far apart, are likely to influence each other, this magical action at a distance, exists in the quantum

entanglement. Quantum entanglement is a phenomenon that two or more particles are entangled with each other, even if the distance is far away, the behavior of one particle will affect the other or more. When one of the particles is operated and the state is changed, the other or more of them will be changed immediately. The property transformation of action at a distance provides the basis for the realization of "economic quantum entanglement".

Economic quantum entanglement

World science and technology "quantum entanglement" reflect in the world economy process is "economic quantum entanglement". For example, the Germany Cologne Institute for Economic Research (IW) latest research report, in 2016 and 2017, the German government needs spending nearly 50 billion Euros on the construction of refugee camps, providing food, transportation and other aspects to refugees, 22.1 billion in 2016 and 27.6 billion in 2017. The Leibniz Institute for Solid State and Materials Research Dresden (IFW) made the prediction more than IW. According to IFW's forecast, in the next two years, according to the change in the number of refugees, the cost of refugees in Germany needed to be placed between 52 billion to 63 billion Euros. The IW study shows that only in the housing, food and welfare, it cost Germany 12 kilo euros/person/year for refugees, added each refugee's language and integrated course cost, a total investment for an individual refugee in each year is around 15.3 Euros, greatly increased the financial burden of Germany. Juncker, President of the European Commission, said the EU Member States on the issue of immigration funding is still have funding gap about more than 2.2 billion, he criticized the Member States have 'Credit problems', the actual situation may be worse. According to the European Commission's report on the implementation of the immigration problem, the member states need to afford the total funding of 2.8 billion Euros, and now the funding gap of is 2.5 billion Euros. This is the standard example of traditional thinking trying to solve the problem which is 'economic quantum entanglement' phenomenon.

In this regard, the World Bank President Jim Yong Kim said that "under the guidance of right policy, this kind of the population changes can be as the driving force of economic growth, if the aging countries could establish the way to make refugees and immigrants involved in their economy, everyone will benefit." Obstfeld Maurice, chief economist of IMF, said: "this change may take time, but ultimately it will be beneficial to Europe's economic growth." This is the current society and economy call for the quantum system of science and technology.

In fact, there are three global economic characteristics of quantum entanglement: firstly, the discrete phenomenon of economic Globalization differentiation, caused by technology power insufficiency, that is the free people characteristics of economic quantum entanglement. Secondly, is the speed of capital flows anxiously waiting for the real economy with excess return, is no longer satisfied with the traditional industry's economic contribution with idle capital phenomenon, which is the noble characteristics of quantum entanglement. Thirdly, the difference in the economic quantum entanglement phenomenon caused

misplacement. The economic quantum properties are the difference between the capital market speed flow (which is a property of quantum), and the real economy performance in the market (which is Newton attribute).

"Quantum entanglement" answered the question is that supported by Newton science and technology system, global economic cooperation and competition are neither Zero-sum game nor Winners Take All, but the economic quantum entanglement on rights and debts, failure and win, positive and negative. Especially during the economic crisis and the economic downturn, this kind of economic quantum entanglement performance is quite obviously. In nature, the problem is the power which supports rights and debts, failure and win, positive and negative of the industry chain or state is fail. In other words, the support system of science and technology is fail. Eight years have elapsed since the last global financial crisis, but global economy is still keeping weakness. It is time to lead all kinds industries to quantum science and technology system. The world's first quantum satellite Mo-tse was successfully launched that was a flag.

Step to the economic quantum state

"Economic quantum state" thinking is oriented by reform and opening, should avoid self-imposed isolation and beggar-thy-neighbor policies, and can't develop relationship on the basis of distance, make exclusive arrangements, make lines on ideology and values. Need to insist ideals, policy and mechanism opening. To cooperate as the driving force, we should carry forward the spirit of cooperated partner, sail in the same boat, strengthen the communication and coordination, take care of the benefits and concerns of each other; To share as the goal, need to make all the countries and people enjoy to benefits of the growth and development, avoid dominance or winner-take-all mode.

Man is a part of nature; all human behaviors are determined by the laws of nature. Using the theory of quantum science and technology, introduce quantum laws into international economics, macro economics, behavior economics and system economics, econometrics and other fields. Suggest using 'economic quantum state' in 'economic quantum entanglement' leap, which can explain the current global difficulties, such as global economic recovery problems. Those problems cannot be explained by economic man assumption, policymaker assumption, and information man hypothesis. Economic quantum state brings the quantum system of science and technology with whose characters of can be observed, can be operated, and having practical result. It can be used to make market rules, to regulate behaviors, to birth a new system, to design of the future frameworks. The economic quantum state has stronger stability, consistency, uniformity and difficult to falsification, with practical value of global cooperation and win-win, also has methodological significance.