

Physics in Sustainable Economy Model

Shengbo Wu

University of Melbourne, Weihai 264300, China.

Abstract: This paper is an attempt to express the sustainable economy in the physical model. Through the analysis of SDGs goal's specific Target8.2, a sustainable economic development model under this scale is established. At the same time, the sustainable economic model has a certain predictive effect on how to achieve sustainable economic development.

Keywords: Physics; Sustainable Economy; Productivity; Upgrades; Environmental Protection; SDGs Goal

Introduction

Globally, economic and oil crises result that people are finding a way to recover economy and promote the sustainable economy. UN-addresses this issue with SDGs. One goal-Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. Within goal- specific target-Achieve higher levels of economic productivity through diversification, technological upgrading and innovation. Some people claim it cannot be practical. Additionally, the second industrial Revolution in the mid-19th century injected new vitality into economic development, and the development of physics played a key role (Rifkin, J. 2011). This essay will establish a connection between economy, productivity and the physics and argue the sustainable economy is achievable with SDGs goal's specific target and physics

1. Establishing the sustainable economy model and deduction

1.1 Preliminary physics- productivity- economy model

H1: Since the early 1970s, new technology about physics and the other fields of for increasing agricultural productivity, it achieved good results. Productivity correlates with the physical theory.

H2: Sugiarto et al (2015) claims that economy will be affected by the industrial and agricultural productivities.

H3: A part of the profit should be used back for studding physics for researching and applying new technology.

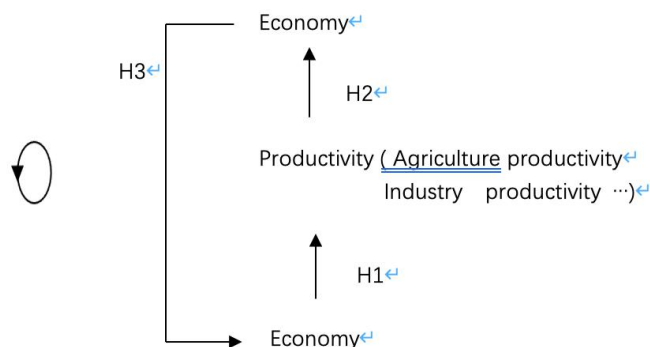


Figure 1

1.2 Preliminary physics- upgrade- protection model

Technology which can reduce harm to environment was used in the mining industry in recent decades. In this case people can use physics(science) as a base to upgrade an equipment to an environmentally friendly one.

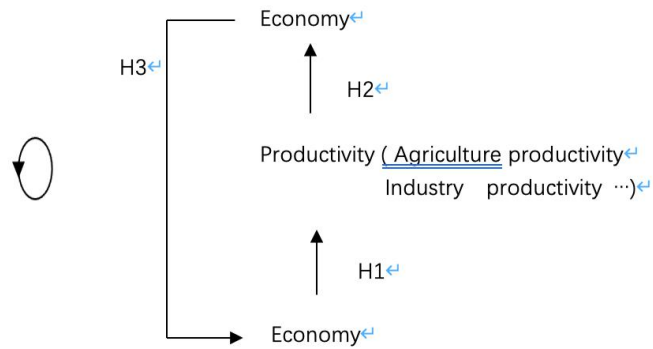


Figure 2



Figure3

Tips: The symbol in front of the process can be considered a simplified version of the model

1.3 Place the two models in the timeline

Solve the location of the physics-upgrade-protection model. The meaning of the process in the model is continuation in time (progression of time). Thus put the model in the location as is shown in figure, which is parallel to the timeline, this means they have same meaning.

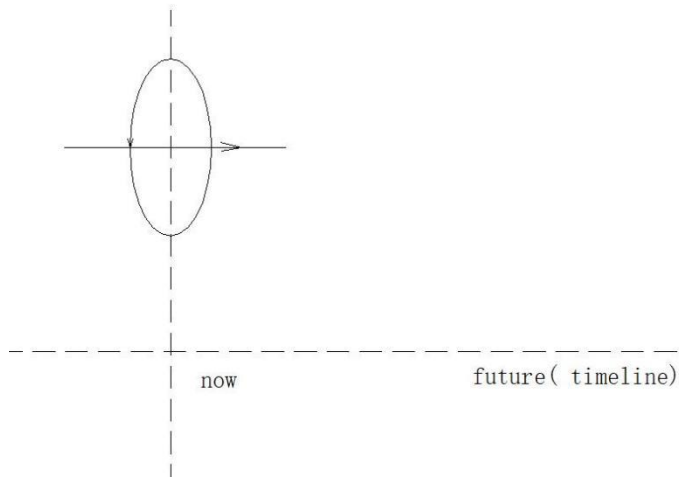


Figure4

1.4 The force between the two models

Protection correlates with the economy. In this case, there is a force(relationship) between the two model. Therefore, the last models with timeline should be retrofitted. As shown in figure, the physics-productivity-economy model can't continue the loop on a differential of the timeline. And move forward along the timeline.

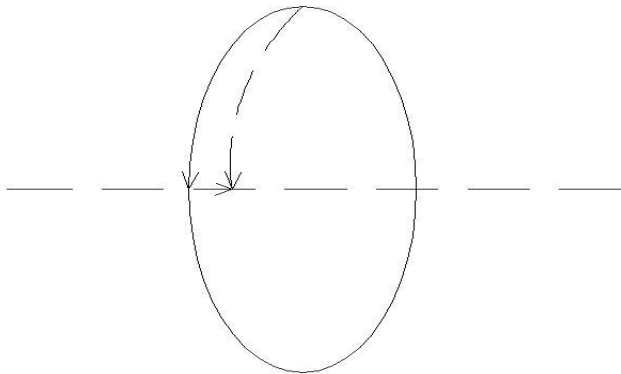


Figure5

1.5 The sustainable economy model

In this final model, things move in a spiral, in line with Hegel' philosophy. And consistent with Hegelian philosophy and Marxist philosophy. In my opinion, sustainable economy is an economy that moves forward in a spiral on a time scale like this final model.

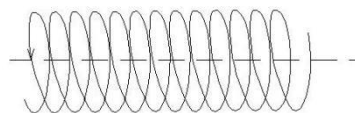


Figure6

Through this process, physics and sustainable economics are linked

1.6 Deduction of the sustainable economy model

Through our model derivation process, in order to achieve the final spiral forward, every link must be achieved. In the other word, if people implement the programs corresponding to the two sub models, the sustainable economy can be practical over physics.

2. Discussion of the realizability of parts to the whole

2.1 The process of the physics-productivity-economy

I strongly believe that physics theory can be a foundation of productivity such as industrial productivity and agricultural productivity. Østergaard, I et al argued that acetone - methanol - water ternary mixed solvent was prepared by physical and chemical methods to improve the yield of IMC. In this regard, previous technologies have not been able to guarantee the quality of production while improving production efficiency, the use of advanced physical theories led to an increase in productivity. People's production and life cannot leave the application of physics, because theory is the foundation. People need the support of adequate theory to produce objects, and when there are problems, they need to find theoretical deficiencies. The improvement of theory will greatly promote the development of productivity

A part of people argued that some circumstances do not support the idea that a physical theory is necessary, Because the development of productivity cannot simply lead to economic progress, even physical progress can greatly improve the production of goods at this time, if people do not have such a large demand, it will lead to the decline of the economy. According to the_Salendu, S. (2021) claimed, Lack of social demand leads to negative correlation between agricultural productivity and economic growth. In his result of experiment, the p-value is -0.550, If the p-value is lower than 0.05, the efficiency is negative to the productivity It means when people's actual demand for goods and the production of goods do not match, the economy will grow negatively. Therefore, economic development is influenced by practices, not by physical theory. People use physics to promote the productivity, but it cannot direct to the economic growth. Even in some cases, concrete things are more practical than these abstract theories

If these people really penetrate into it, the denial to theory because of practice is incorrect. Practice can serve as the basis of theory, but ultimately a more perfect theory is the foundation of development. Wiig, S et al (2019) suggested that people necessarily regarded resilience practices as the foundation of theory. Better theory serves application. In this case, theory does not conflict with practice. People can use practices to complement physics to a more comprehensive one, not give physics up when it can't be congruous to a special condition. Thus, this process can be achieved over constantly seeking theoretical perfection and improvement. What was worth mentioning that physics is not limited to technology, but also to explore the law of the development of things. The problems people encounter in reality can be established corresponding theories to describe the law of change, so as to provide reference for the future development. Thus, a systematic and perfect physical theory is still an important pillar to improve productivity and economic development. This process can be achieved

2.2 The process of the physics-upgrade-protection

In addition, only promoting economic development cannot achieve sustainable development, economic development will inevitably sacrifice the environment. How to protect the environment while improving productivity and developing economy is a key point of realizing sustainable development. New technology and innovation both protect the environment and create economic profit are practical. There are many successful examples of these upgrades resulting in environmental protection. For example, green growth which supported by the new technology and innovations in Colombia. The application of new physical theory provides people with many opportunities to develop economy and protect environment.

However, there are many areas of production where these new technologies have not been widely adopted. Some traditional methods that are harmful to the environment are still used, these traditional methods that have a great impact on the environment have not been replaced, which will still lead to the deterioration of the environment, resulting in the situation

of not making ends meet. The method to extract crude oil which is fracking is harming the environment and still be applied although new technology can be more beneficial (Qingmin, M.2017). In this case, upgrades won't work as well as they can if people don't use them at all, protection still cannot be achieved. New technologies and innovations have indeed helped achieve sustainable development, but sustainable development cannot be achieved without widespread application

Firstly, I agree with the argument that the situation about the use of new technologies is not widespread currently and environmental protection supported by this new technology is not universal. Nevertheless, this argument is only partially accurate, because the realization of sustainable economy does not mean the prosperity of the economy today, but the prosperity of the economy from now to the future. Rifkin, J. (2011) suggested that oil and other traditional industries have entered crisis, the world is suffering from an oil crisis, and the price has risen to \$11.65, up from \$3. Additionally, various problems are coming one after another, people must update their production and lifestyle to achieve sustainable development. Therefore, there is no question that people will use new technology. This is what people must do, whether it's for the sake of profits or for the sake of the environment. In this case, this progress can be achieved.

About the author: Wu Shenbo, August 6, 2002, male, Han nationality, native place: Ezhou, Hubei, education: Bachelor degree, professional title and research direction: social sciences

Conclusion

Two achievable progressed combined to an achievable sustainable economy, the physics is a crucial role. Above all, people can achieve the progress from physics to sustainable economy. Strict implementation is the guarantee of all this in the future.

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