

Going Back to the Basic of Green Economy: Special Reference to Economic Interpretation and Policies

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Abstract

It is no doubt that promoting green economy is the only option for the sustainable development. This paper provides a fundamental framework for economic studies on designing green policies that have many links with green technologies and environmental ethics. It also proposes a new theory of “pollution abatement stages model” in order to interpret how to improve environmental quality in a more efficient and effective way. For an intuitive understanding, we use more graphs instead of complicated mathematical equations to demonstrate ideas and the new theory.

Key Words: green technologies, environmental ethics, green policies, pollution abatement stages model

1. Introduction

Since entering the 21st century, people have been paying more and more attention on green economy for a better quality of life and the sustainable development. The two cores of green economy are conservation of environment and availability of natural resources: the former includes controlling additional emissions, detoxifying wastes and restoring environmental damages; the latter refers to promoting “3R (Reduce, Reuse, Recycle)”, enhancing fossil-fuel efficiency and developing green energies.

Governments are supposed to play important roles in accelerating green economy in aspects of providing environmental infrastructure and correcting market failures caused by “positive or negative externalities”. Direct regulation, such as quotas, standards, regulations or laws, which is referred to as a “command-control” approach, has been the primary instrument in most countries. Economic incentive, such as taxes and subsidies, which is the “price-based” approach, is thought as a more cost-efficient way to encourage environmental liabilities by making full use of market mechanism.

There are many theoretical and empirical studies on green economy, having provided quite a few valuable suggestions for policymakers. However, some studies are too confusing to be understood and somewhat remote from reality.

This paper gives basic and essential economic interpretations on how to promote green economy and provides a fundamental framework for economic studies on designing green policies. Moreover, it proposes a new theory of “pollution abatement stages model” so as to explain how to improve environmental quality in a more effective and efficient way. For an intuitive understanding, we use more graphs instead of complicated mathematical equations to demonstrate ideas and the new theory.

2. Diversity of environmental problems with the economic growth

There are a great variety of environmental problems, and their solutions and corresponding abatement costs vary with respective types. Therefore, it is hard to build a complex environmental indicator to evaluate the quality of environment or the effect of environmental policies.

Figure 1 shows that environmental problems can be grasped from three dimensions: Time-dimension (short→long→secular), Space-dimension (communal→regional/national→global) and Range-dimension (individual→sectoral→common). There are many combinations for describing various types of environmental problems. Type A (short+communal+individual, such as neighborhood noise) and type B (secular+global+common, such as global warming) are the two extremes. With the upgrading from A to B, the problem becomes more and more serious and hard to be solved. Industrial pollution (long+communal/regional+sectoral) is the most familiar environmental problem which always happens in the local area, so it is easier to point polluters. On the other hand, agricultural pollution is a non-point source pollution and trans-regional and thus very intractable.