

Simplified Green GDP and Environmental Kuznets Curve of Japan, South Korea and China

Nobuhiko Masuda

This paper examines relations between economy and environment in Japan, South Korea and China by using two methods of green GDP and the environmental Kuznets curve.

At first, we made trial estimates of simplified green GDP and environmental maintenance cost of 3 countries from 1995 to 2005 from the point of view of the sustainability. According to our results, in South Korea and China it seems to be that green GDP increases when GDP increases. For the increase rate of pollutants emission and resources consumption is lower than the growth rate of GDP. And, the ratio of environmental maintenance cost to GDP decreases when economy grows. This suggests the possibility that if economic growth is achieved, we can maintain the same level of the environment by paying a smaller ratio of GDP to environmental protection.

Next, we consider how relations between the economic growth and the environment change at the different stage of economic development as Japan, South Korea and China by using the environmental Kuznets curve (EKC). Here, we take up not only the environmental deterioration researched in EKC so far but also introduce resource exhaustion, and environmental maintenance cost which reflects environmental deterioration and resource exhaustion synthetically. According to our results, the hypothesis of "EKC" seems to hold in the case of SO_2 but does not hold in the case of CO_2 and exhaustible energy. In the case of environmental maintenance cost it is not certain.