

Pilot Studies of the Compilation of the Green Accounts in Taiwan

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1. Introduction

Despite gross national product (GNP) being a popular instrument for measuring a country's economic achievements, it may fall short of accurately assessing the real welfare of the general public in a country since none of the environmental pollution and depletion of natural resources are included in such a measure. In view of such, the United Nations began studying the SEEA (System of Integrated Environmental and Economic Accounting) more than a decade ago as a reliable means to measure living standards, levels of welfare, and ecological equilibrium. Since the 1950's, Taiwan's economy has undergone swift changes and created world-acclaimed "economic miracle". However, with the expansion of production scale and rapidly growing population, the depletion of resources and numerous pollution problems became deteriorating day by day. This study initiated a pilot compilation of Green Accounting with SEEA's concept to review the natural depletion and degradation of environment in Taiwan.

2. Method

Based on the UN's SEEA system, the key objectives behind Taiwan's Green Accounting project lie in focusing on the potential impact of the depletion of natural resources and environmental degradation. Estimation for the depletion of natural resources has been taken by the net price method, meaning exploitive gain minus exploitive cost. While estimation for environmental degradation has been taken by the maintenance cost method, which means the act of pollution without any preventive measures is applied in order to estimate the required cost of pollution prevention in conjunction with the use of the best available technology as a viable means to estimate the degradation of environmental quality. Indirect pollution factors - which may be difficult to put in a quantifiable measure and remain controversial - are excluded, such as costs borne to human health and leisure valuations of natural forest.

3. Conclusion and future Forecast

The result shows that environmental degradation by various pollutants throughout Taiwan in 1998 totaled \$197.37 billion, or \$217.27 billion if the depletion of natural resources is taken into account, down by 8.8 percent compared to the 1996 figure of \$238.29 billion, or 2.65 percent against the NDP, also down by 0.74 percentage point than 3.39 percent recorded in 1996. (See Table) It is a small comfort to know that both the depletion of natural resources and degradation of environmental quality have calmed down slightly thanks to increased public awareness about environmental protection as well as the active efforts by the government. In comparison with neighboring countries, Taiwan is higher than Japan (1.15 percent against NDP) and South Korea (2.63 percent against NDP), mainly due to the serious wastewater pollution in Taiwan.

Table. Environmentally-Adjusted Green Accounting in Taiwan

Unit: billion NT\$

Year	1996	1997	1998
(1)GDP	7,678.13	8,328.78	8,938.97
(2)Consumption of fixed capital	645.21	703.40	748.70
(3)NDP	7,032.91	7,625.38	8,190.27
(4)Depletion	23.55	20.04	19.90
Oil, gas, coal, marble, limestone	1.84	2.09	2.08
Gravel	1.58	3.21	5.06
Ground Water	20.13	14.75	12.76
(5)Degradation	214.74	202.22	197.37
Air	52.09	48.54	48.64
Water	78.11	80.60	81.57
Waste	84.54	73.08	67.16
(6)Total of depletion and degradation	238.29	222.26	217.27
- percent of NDP(%)	3.39	2.91	2.65
(7)Environmentally-Adjusted Value added	6,794.63	7,403.12	7,973.00
[E. V. A. =NDP- (6)]			

Since the framework of SESA included various satellite accounting, we have finished the estimation of environmental depletion and degradation and maintaining cost for each pollutants, which only occupied 20 -30 percent of SESA because of the limited information sources and preparation methods at present. Thus, there shall be still great space for future development. More important, we could not explain the overall environmental economic change only by a single number. We should observe the relevant background for the account so that we can have a complete understanding of the environment in which we live.

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RÉSUMÉ

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