

Calculating Economic Growth

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1. Failure of National Accounts

The international economy is increasingly moving toward market liberalization. Since the beginning of the 1980s, developing countries have been implementing sweeping macroeconomic and sectoral reforms. In the late 1980s, the once plan-economies have also embarked on these reforms. Fiscal policies, monetary policies, pricing policies, privatization schemes, exchange rate policies, and trade liberalization measures have been employed to restore fiscal and trade balances, improve economic efficiency, promote export, and boost economic growth. The Uruguay Round whose central theme is Trade Liberalization supports such reforms and integrates the economies of these countries further into the global market.

Has the economy grown? If it has, by how much? What is the level of national income? These are some of the key questions in the mind of economic decision makers. They need the answers in order to evaluate the effect of economic reforms and to adjust economic decisions accordingly: reducing interest rate to encourage investment, and devaluing currency to promote export, for example.

The answers are found in national accounts compiled following to an international framework, the System of National Accounts (SNA). The SNA provides economic indicators such as Gross Domestic Product (GDP), Net Domestic Product (NDP), value added, and national income. GDP is the sum of all value added produced in an economy during an accounting period. NDP is GDP minus the depletion of produced assets, such as machines, trucks, and factory buildings. Value added, gross or net, is GDP or NDP at a sector or industry level. National income, gross or net, is GDP or NDP plus net transfers from abroad, such as remittances. It is related in a positive way to GDP or NDP. Although GDP is usually used to indicate the growth of an economy, NDP should be used to reflect more accurately the new value created by the economy as it allows for the amount of produced capital lost in the process of production.

But even NDP does not accurately measure new value created. It fails to net out environmental costs, in terms of depletion and degradation of natural assets that result from economic activity. Values created by an economy are, thus, overestimated, encouraging the pursuit of economic growth at the expense of its physical basis - natural assets. In the UK, for example, environmental costs in the oil and gas sectors alone amounted to 20.289 million pounds in 1990. In Papua New Guinea, as another example, the growth of the mining sector in 1989 was accompanied by

environmental costs that amounted to 26.5 per cent of the sector's net value added.

The 1992 Rio Conference called for the integration of environmental and social factors into economic decision-making. One specific action proposed in Agenda 21 was the establishment and implementation of systems for Integrated Environmental and Economic Accounting (IEEA), which can facilitate identification, quantification, monetization, and internalization of environmental costs that result from economic activity. IEEA, popularly known as green accounting, is expected to make up for the inadequacy of the SNA.

2. Rio, Five Years Later

Five years after the Rio conference, progress has been made as IEEA was set up as an interim framework and was tested in a limited number of countries. 1993 was witness to the publication of a modified System of National Accounts in which IEEA is included as a satellite accounting system orbiting around the conventional economic accounts. Several developing countries, out of concern over the natural resource base for economic growth, have applied IEEA to a few strategic natural resources on an experimental basis. Before the end of 1997, an IEEA operational and training manual, with inputs from research institutes and NGOs, will be published by the UN to provide specific guidelines for the implementation of IEEA.

Due to the resistance of industrialized countries, however, global implementation of IEEA remains a distant objective. The publication of the IEEA handbook in 1993 has received little attention from most OECD countries, even though the handbook itself draws on the expertise from these countries. The international momentum for implementing IEEA began receding during two years after the publication of the handbook.

To resurrect IEEA, in May 1995, WWF (World Wide Fund for Nature) organized an international conference "Taking Nature into Account" in collaboration with the European Parliament, the European Commission, and the Club of Rome in the hope that European Union Member States would be motivated to start implementing IEEA by 1999. In October 1995, WWF organized another international conference "Accounting for the Future" in collaboration with the World Bank, the World Conservation Union (IUCN), National Wildlife Federation (US), and other partners. The conference adopted a five-point action plan which calls for IEEA implementation in a minimum of ten additional countries, use of IEEA in economic decision-making, provision of training programs, further improvement of IEEA methodologies, and the establishment of an international working group to facilitate the process.

Despite these efforts, international commitments remain weak. In 1996, the European Commission dropped the target of 1999 for its Member States to implement IEEA, reflecting its determination to use the conventionally measured GDP as a key criteria for converging the Member States into the European Monetary Union. Similarly, the World Bank, because of lack of support from industrialized countries and concerned about perceived political implications of IEEA implementation, has been retreating from its earlier commitment and has devoted little

resources to promoting IEEA in its member countries.

Developing countries have become discouraged by this state of affairs. The inaction of industrialized countries and hesitance of major international development institutions such as the World Bank have lead to questions on the international applicability of IEEA. Moreover, developing countries need financial and technical resources to implement IEEA, but such resources are not forthcoming from the international community. Some industrialized countries, such as Canada, the Netherlands, Sweden, and the United States provide resources to a limited number of developing countries for the implementation of IEEA, but they do not accept IEEA. Concerned that environmentally adjusted economic indicators may be used unfairly in an international context, which may carry unfavorable political implications, developing countries are often unwilling to publish the results of IEEA and apply IEEA to their economic decision-making even if they support IEEA implementation in their countries.

Policy relevance is one argument frequently used to resist the implementation of IEEA. From limited experimental case studies, few examples can be collected to show how IEEA results have been used in practice to change economic decisions. Most studies have focused on the methodological aspects of IEEA to demonstrate accounting procedures. Policy interpretation and recommendations have rarely been incorporated as part of an IEEA process. To the opponents, therefore, IEEA appears to have little value. Such rejection of IEEA amounts to killing a baby with all its potential before it is even allow to grow.

3. Policy Implications of Green Accounting

In the course of helping the UN to prepare the IEEA operational and training manual, WWF has identified the potential of IEEA to improve decision-making. Four aspects are included: a) IEEA as a policy process; b) relevance to environmental policies; c) relevance to economic policies; d) relevance to social and international policies. These aspects are summarized below.

A. IEEA as a Policy Process

IEEA is more than an accounting exercise, it requires the formation of a stakeholder group, which includes government agencies, non-governmental sectors, and external institutions when necessary. The existence of such a group can foster participation in decision-making, facilitate prioritization of environmental issues, enable integration of environmental, social, and economic considerations into development policy, raise environmental awareness, and strengthen the capacity of government agencies and civil society groups to spot key policy issues, analyze statistical data, develop integrated policy proposals, promote the use of IEEA information in decision-making, and advocate policy and institutional reforms based on the results from of IEEA.

B. Relevance to Environmental Policies

Information from IEEA is expected to be used mainly for directing economic policies, but certain

types of information can also be used for environmental policies. IEEA records the stocks, stock changes, and quality changes of “economic” natural assets and “environmental” natural assets in physical units. The former include land/soil, sub-soil assets, forests, fisheries, and water resources which generate direct economic benefits. The latter include similar assets but focus on their environmental functions regardless of their economic benefits: land and terrestrial ecosystems (excluding forests), forests and ‘wild’ forest land, rare and endangered fauna and flora, water and aquatic systems, and air. In addition, IEEA includes information on emission of pollutants and waste discharge by sector.

Such information can facilitate the identification of environmental priorities. When linked to a detailed classification of industry, such information can also help trace environmental pressure points and enable the design of targeted policies. IEEA’s monetary accounts of natural assets provide information on environmental costs, which can be used as a basis for designing economic instruments for achieving environmental objectives. The effectiveness of environmental policies can be assessed by observing the changes in the physical accounts vis-a-vis relation to changes in the environmental protection expenditures which are separately identified in IEEA.

C. Relevance to Economic Policies

IEEA, based on information generated from various accounts, produces environmentally adjusted economic aggregates. GDP is first reduced to NDP to account for the loss of produced assets. NDP is then reduced to EDP I (environmentally adjusted net domestic product) to account for the depletion of natural assets. If both depletion and degradation of natural assets are accounted for, NDP is reduced to EDP II.

These adjusted indicators can be used to better assess economic performance and integrate environmental concerns into economic policies. They represent net values created by an economy during an accounting period after deducting the consumption of both produced assets and non-produced natural assets. If EDP is used as an indicator of genuine economic growth to be pursued, macroeconomic and sectoral policies can only treat non-produced assets the same way they treat produced assets, for otherwise they would serve to reduce EDP. This new aggregate would compel decision-makers to consider the types of economic activity to promote, not necessarily for the purpose of environmental protection, but for the very purpose of economic growth. The environment would benefit nonetheless.

IEEA also provides information on the constraints of natural assets on economic growth. The physical accounts of these assets indicate the availability and quality of natural assets, whereas the monetary accounts provide information on the financial constraints, originated from the loss of natural assets, on economic growth. The financial constraints reflect the amount necessary to maintain the functions of natural assets for future use. These costs measured by the user-cost method, for example, indicate the amount that must be set aside for productive investment in order to maintain constant levels of income.

Such information can be used to design economic policies for the environmental costs to be paid by users of natural assets and for the proceeds to be invested. Investment opportunities can be identified from information on environmental protection expenditures. Monetary accounts of “economic” natural assets and “environmental” natural assets can also facilitate decisions on trade-offs between economic and environmental use of natural assets. Comparisons between EDP and NDP over time can indicate the effectiveness of economic policies to maintain the productivity of natural assets.

There are concerns at high levels of decision-making over the perceived negative economic and political implications of using EDP instead of GDP as an indicator of economic performance. These concerns stem from international comparison of GDP for three major purposes: to assess the relative economic strength of countries, to determine the allocation of development aid, and to predict economic opportunities. They have to do with two things: the image of a country and its government, and financial flows into the country.

These concerns are unnecessary. First, a country’s EDP is to be seen as relative to EDP of other countries all of which are likely to experience a downward adjustment from GDP. This will avoid unfair comparison of one country’s EDP with the GDP of other countries. Second, a comparison between EDP and GDP of a country or across countries indicates the amount of capital (including natural asset) consumption whereas a comparison between EDP and NDP indicates the amount of natural asset consumption. Even if estimated gaps in these comparisons may be larger in one country than in the other, the very act of estimating EDP serves to demonstrate the government’s commitment to protect the natural assets of its economy. Such commitment is likely to attract international financing to close the gap than not, since environmental protection is being increasingly incorporated into development aid policy and multinational business conduct. Any perceived negative consequence in terms of image, domestically and internationally, is likely to be offset by such commitment.

D. Relevance to Social and International Policies

IEEA deals mainly with the interaction between environment and the economy, however, certain information from IEEA can also be used to facilitate social and international policies. Through the linkage between detailed industrial classification and physical natural asset accounts, the existing distribution of these assets can be assessed to support policies to reform property right systems for the purpose of equitable distribution of natural assets, poverty reduction, and efficient management of natural assets.

The physical accounts of natural assets can be used as a basis for decisions on inter-generational equity - how much natural assets should be left for future generations. The implementation of polluter/user-pays-principle, based on the monetary valuation of environmental costs, will already embody the principle of inter-generational equity because the valuation methods are designed to ensure the maintenance of the productivity of natural assets.

Information on emissions by sector provides information on transboundary flows of residuals. The effect of such flows on national income can be assessed when linked to monetary accounts. Such information can facilitate the development of international policies to control the flow of residuals across countries and the provision of financial compensation for countries negatively affected.

4. Conclusions

The 1992 Rio Conference proposed the use of IEEA as a pragmatic tool to calculate economic growth and to integrate the environment into economic decision-making. Five years after the Rio conference, the basic IEEA framework has been established and tested in several countries. The NGO community has been at the forefront promoting the implementation and policy application of IEEA. But IEEA's potential to improve policy-making process, support environmental policies, guide economic policies, and facilitate social and international policies has yet to be realized through acceptance, implementation, and policy application of IEEA in industrialized countries. International institutions, including the European Commission, OECD, and the World Bank, have yet to bring the implementation and policy application of IEEA onto their core operational and policy agenda or to support developing countries' efforts in this regard. The Rio+5 provides an opportunity for governments, non-governmental sectors, and international agencies to review and reconfirm their commitments made in Rio five years ago. A new international momentum has yet to be generated.

References

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