

# Environmental Protection Expenditure Accounts (EPEA) and other related transactions

Day 3, Lecture 2

## Environmental Protection Expenditure Accounts

- Recall definition of EP from previous lecture
- Purpose of EPEA: to measure society's response to the environmental challenges through supply and use of environmental protection (EP) services, measuring the financial commitment of the economy to EP and to assess how costs are paid and by whom
- Applicable to whole sequence of accounts
- Usual SNA conventions apply

# Environmental Protection

EP Classes
1 Protection of ambient air and climate
2 Wastewater management
3 Waste management
4 Protection and remediation of soil, groundwater and surface water
5 Noise and vibration abatement (excluding workplace protection)
6 Protection of biodiversity and landscapes
7 Protection against radiation (excluding external safety)
8 Research and development for environmental protection
9 Other environmental protection activities

Group 1 of CEA (Table 4.2.1, page 91)

# Production of EP Services

	Producers				Total
	Specialist producers		Non-specialist producers	Own account producers	
	Government producers	Other specialist producers			
Output of environmental protection specific services	3 000	6 500	2 400	1 600	13 500
Intermediate consumption	2 000	3 000	600	400	6 000
Environmental protection specific services	1 800	1 500	500	300	4 100
Other goods and services	200	1 500	100	100	1 900
Gross Value Added	1 000	3 500	1 800	1 200	7 500
Compensation of employees	600	2 000	1 200	800	4 600
Taxes less subsidies on production					
Consumption of fixed capital	400	1 000	600	400	2 400
Net Operating Surplus		500			500
Supplementary items					
Labour input (hours worked)	4 000	10 000	4 500	4 000	22 500
Gross fixed capital formation	1 100	1 000	2 000	500	4 600
Acquisition less disposal of non-produced, non-financial assets		200			200

From SEEA Table 4.3.1

## Intermediate Consumption of EP Services

- The expenditure on goods and services by establishments in the production of their output.
- SEEA states that: for specialist producers must exclude intermediate consumption from calculation of total EP expenditure.
- DISCUSSION QUESTION: Why is this?

## Total Environmental Protection Expenditure

- Final consumption, intermediate consumption, and gross fixed capital formation on all environmental protection goods and services (characteristic, connected products, and adapted goods), except intermediate consumption and gross fixed capital formation for characteristic activities
- *Plus* Gross fixed capital formation for characteristic activities
- Plus EP transfers by resident units to RoW
- Plus EP transfers received from RoW
- Note: unlike EGSS production, EPE is valued at basic prices (including taxes and excluding subsidies)

## Environmental transactions to/from government

- Environmental Taxes
- Environmental Permits
- Rent
- Environmental Subsidies and other permits
- Environmental fines and penalties  
(distinguished from taxes if imposed by a  
court or judicial ruling)
- Again, note that these transactions all fit  
within the sequence of accounts

## Rent

- Payments associated with extraction and  
use of environmental assets (primarily natural  
resources) owned by government
- Income receivable by government for assets it  
owns
- May take many forms (e.g. collected via taxes  
on profit), but still should be counted as rent
- Note difference from concept of “resource  
rent” in economic texts

## Permits for access to environmental assets

- Permit or license qualifies as an asset in national accounts if valid for a period of at least 1 year
- In national accounting, must distinguish between 3 different assets:
  - Exploration and discoveries of environmental assets
  - Value of stocks of environmental assets
  - Permit or license to extract or use an environmental asset
- In many cases, permits act as essentially sources of rent for the government

## Permits for using environment as a sink

- Payments for the right to release residuals to environment
  - Essentially the right to use the environment (as a sink)
- If payments are required as remedial action for illegal activities, transactions should be treated as fines
- If payments are disproportionate to costs, should be treated as tax (essentially a tax on the right to a service)
- Special case for emission permits that are tradable (affects timing of recording)

## Subsidies

- Transaction from an economic unit (government) intended to provide support without receiving any type of payment in return

## Environmental Subsidies

- Environmental determination: use primary purpose criterion for the transfer
  - Analysis of whether the subsidy or transfer is actually beneficial to EP or RM unnecessary for accounting
- If possible, should classify subsidies and other transfers by the Classification of Environmental Activities (CEA)

## Taxes

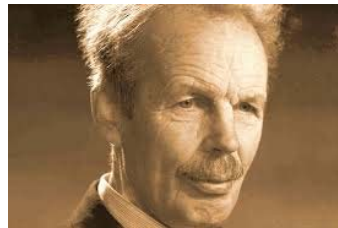
- Taxes are compulsory payments made to government
- In the SNA, there are 6 types of taxes:
  - Taxes on products
  - Taxes on production
  - Taxes on income
  - Other current taxes (e.g. license fees)
  - Capital taxes

## Environmental Taxes

- Environmental determination: defined according to the tax base; an environmental tax:
  - is a tax whose tax base is a physical unit (or a proxy of it) of something that has a proven, specific, negative impact on the environment.*
  - For listing of examples, see: *Environmental Taxes – A Statistical Guide, Eurostat & OECD, 2001*
- 4 broad groups of environmental taxes: energy taxes, transport taxes, pollution taxes, and resource taxes (e.g. tax on extraction, excludes rent)

## Pigouvian Tax

- Tax on activity that is generating negative impacts to environment in order to correct for the inefficiency caused by these negative externalities (costs endured public)
- Pigouvian subsidies have also been proposed, under related reasoning, for activities that create positive externalities
- Polluter Pays Principle



Arthur C. Pigou

### DISCUSSION QUESTION:

How can we identify environmental taxes in practice? What data sources are used to collect the information needed?



## References for further study

- SEEA 2012, Chapter 4
- Eurostat (2009) "The Environmental Goods and Services Sector"
- "Measuring the Green Economy", Economics and Statistics Administration, Washington D.C., US Department of Commerce (2010)
- Environmental Taxes: A Statistical Guide, Eurostat & OECD
- IMF Government Finance Statistics Manual, (GFSM) 2001