



## Environmental Policy and Legislation

4201-431

# ENVIRONMENTAL POLICY

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Lecture Topic 5

Lecture notes and further information:  
<http://www.uni-hohenheim.de/apo>



## OUTLINE TOPIC 5



- **Developing Countries and the Environment**
  - Main Causes of Environmental Problems in Developing Countries
  - The Demand for Environmental Quality and the Environmental Kuznets Curve
  - How can Developed Countries Help?

## Main Causes of Environmental Problems in Developing Countries



1. Population growth
2. Industrialization
3. Increasing urbanization
4. Weak governance
5. Lack of information/education
6. Lack of technology
7. Poorly defined property rights
8. Poverty

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## DEMAND FOR ENVIRONMENTAL QUALITY



### Influence of income on the demand for environmental protection

- Environmental quality as normal good  $\Rightarrow$  increasing income leads to a proportionately increasing demand.
  - Environmental quality as luxury good  $\Rightarrow$  increasing income leads to a more than proportionately increasing quantity demand (income elastic).
- $\Rightarrow$  The income elasticity of demand for environmental quality turns out to be the key parameter.

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## DEMAND FOR ENVIRONMENTAL QUALITY



**Income elasticity of demand for environmental quality is the key parameter to the answer of many important questions, like:**

- As the world becomes wealthier, does environmental protection become more important or less important?
- Can differences in pollution levels among countries be explained by differences in income?
- Do poor people demand less environmental quality (protection) than the rich?
- Why do developing countries tend to have more lax environmental regulations than the rich countries?
- Is development the best instrument of environmental protection in poor countries?
- Will developing countries grow out of their current environmental problems?
- Why are all rich countries not equally clean and green?

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## DEMAND FOR ENVIRONMENTAL QUALITY



**Reminder: Translation of private demand for environmental quality into environmental regulations**

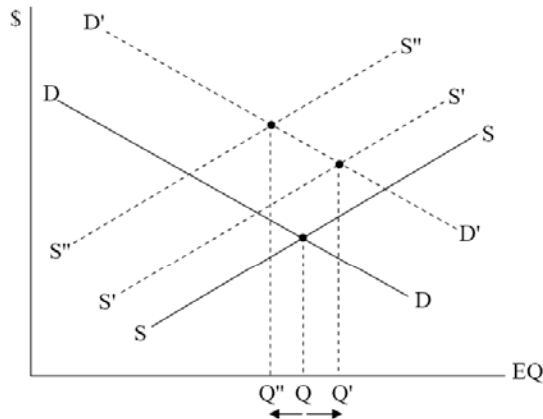
STEP 1	increase in income	translated into	increase in the individual demand for environmental quality
STEP 2	individual demands	translated into	societal or aggregate demand for environmental quality
STEP 3	aggregate demand on the part of the people	translated into	demand on the part of the government
STEP 4	government demand	translated into	environmental regulations

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## DEMAND FOR ENVIRONMENTAL QUALITY

**Environmental quality (EQ) = result of interaction of supply and demand**



- Demand for EQ has increased with increasing income.
- Anyhow - depending on how much the supply curve has shifted - increase in income might result in an increase or decrease in the equilibrium levels of environmental quality.

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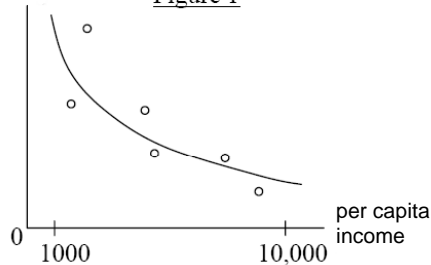


## DEMAND FOR ENVIRONMENTAL QUALITY

**Different pollutants  $\Rightarrow$  different relationships to increases in per capita income**

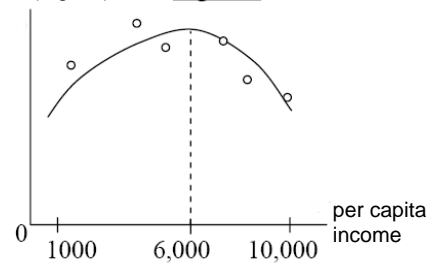
% of population with unsafe drinking water

Figure 1



Smoke concentration in cities (mg/cm)

Figure 2



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## DEMAND FOR ENVIRONMENTAL QUALITY



### Environmental Kuznets Curve (EKC)

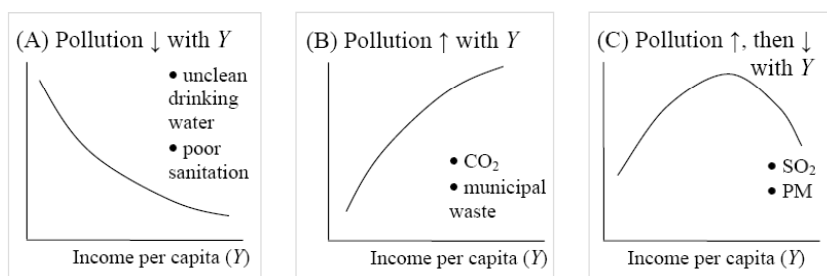
- The curve with the inverted U-shape shows how environmental quality or pollution changes with increases in income in a country.
- Usually estimated with **cross-section data for many countries at different levels of development at the same point in time**.
  - Interpreted as showing what will happen to EQ in a country over time as it develops (as income rises).
- Critic of the method:
  - it lefts-out variables which correlate with income levels, like
    - density of population
    - international trade (pollution haven hypothesis)

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## DEMAND FOR ENVIRONMENTAL QUALITY



### Income-environmental quality relationships:



### Policy implications:

- (A) Focus on raising incomes
- (B) Focus on technology transfer and institutional innovation to reduce pollution
- (C) Depend on when the turning point occurs

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## Developing Countries and the Environment - How can Developed Countries Help?



### 1. Technology transfer

- Technology is developed in top industrialized countries
- Incentives are needed
  - for developed countries to create technology *and*
  - for developing countries to adopt technology
- Government involvement necessary, if there is no creation of technology
- Note: Technology must be compatible with local labour skills and the local environment

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## Developing Countries and the Environment - How can Developed Countries Help?



### 2. Debt for nature swaps

- Many developing countries owe money to developed countries.
- Environmental organisations buy portions of the debt and retire it in return for environmental preservation.
- Alternative: provide credits for carbon sinks.

### 3. Encourage the development of institutions to help enforce and carry out environmental regulations.

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## **Developing Countries and the Environment - How can Developed Countries Help?**



### **4. Changing the focus of international aid**

- More emphasis on the environmental impact of a project
- International organisations have begun to change their focus to help.

### **5. Further suggestions?**