**Economic Development and the Environment**

Economic development is typically measured as increase in per capita income $\frac{GDP}{Population}$

Growth can occur without development

Environmental goods have opportunity cost

Choices must be made between environmental/ non-environmental goods

In productions possibilities graph country A has greater capacity to produce

A

B

Market goods/services

Environmental quality

c1

eb

ea

 Country A has more resources and/or resources more productive

If both countries produce c1 goods/services eb<ea

In some cases environmental/market goods are complements

1. studies have shown positive relationship between environmental quality and worker productivity [example from a study](https://www.aeaweb.org/articles?id=10.1257/pol.20150085)

2. air pollution may decrease agricultural output

Lesser developed countries heavily dependent on agriculture

Research has found pattern regarding environment and development

I\*

Pollution level

Income per capita

Positive relationship between pollution and development up to I\*

I\* - per capita income estimated to be between $5000 and $8000

Pattern:

1. Economic development initially causes increase in pollution; change from agrarian to manufacturing

2. As per capita income increases, demand for environmental goods increases;

 induce greater regulation

 result in change in industry composition

3. access to pollution abating technology may increase with development

[Per Capita Income by Country](http://en.wikipedia.org/wiki/List_of_countries_by_GDP_%28PPP%29_per_capita)

[Figure](http://milesfinney.net/434/handouts/kuznet.pdf) looks to specific environmental quality indicators

**Pollution haven hypothesis**

 Polluting industries may be induced to migrate to poorer countries

 Wealthier countries may heavily regulate polluting industries

 Trade allows firms to move to developing countries without losing markets

 Developing countries may invite industrial firms

Evidence would come from trade patterns

Poor countries should export products of polluting industries to rich countries.

Rich countries should export clean industry products to poor.

Little evidence to suggest such a pattern

Many factors determining location of industries across countries

Environmental regulation costs do not appear major factor

FDI – an investment abroad, usually where the company invested in is controlled by the foreign corporation

[FDI and Particulate Matter](http://milesfinney.net/434/handouts/fdi.pdf)