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## Are the Costs of Global Warming Too High to Ignore?

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## The Economy and the Earth

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- ◆ The economy is a subset of the environment, not the other way around
- ◆ The environment has created an economy that is currently destroying its maker
- ◆ What is needed is an “ecology-economy,” an economy that is sustainable and environmentally friendly

## Ecologists vs. Economists

- ◆ “Every generation should leave water, air, and soil resources as pure and unpolluted as when it came on earth. Each generation should leave undiminished all the species of animals it found existing on earth.” (Ecologists)
- ◆ “The obligation to the future is not to leave the world as we found it in detail, but rather to leave the option or the capacity to be as well off as we are.” (Economists)

## What Is Wrong?

- ◆ Economists rely only on the market to guide their decision-making
- ◆ External factors are not given consideration
  - Adverse health effects
  - Environmental degradation

## In Other Words ...

- ◆ When making decisions, individuals seem to be interested only in private costs (MPC); they do not take into consideration the costs to society (MSC)
- ◆ As this occurs, actual costs and quantities are much higher than expected (see graph)

## A Self-Destructing Economy

- ◆ Because of this inaccuracy, many problems are becoming evident
  - Destroyed forests
  - Depleted fisheries
  - Ravaged rangelands
  - Heavy pollution
  - Acid rain
  - Global warming

## MSC—Global Warming

- ◆ Because of increased CO<sub>2</sub>, earth has been experiencing higher temperatures
- ◆ Storm systems agitated
  - Villages, buildings, infrastructures destroyed
  - Costly repairs and economic loss

## MSC—Fisheries Depletion

- ◆ As businesses only realize the MPC to fishing more, a much larger problem is occurring
- ◆ Fishermen take more than a sustainable harvest, causing for an exhausted stock of fish the proceeding fishing season (see graph)

## In Response ...

- ◆ Regulations and legislative policies are enacted
  - Tradable pollution permits
  - Best Available Retrofit Technology (BART)
  - Fishery restrictions endorsed to improve sustainable harvest via fishing quotas
- ◆ We are not ignoring global warming and like social problems

## China

- ◆ 1.3b people in a land mass about the area of the US
- ◆ Western growth model
  - Automobiles
    - Oil
    - Roads
  - Food
  - Paper

## Post-colonial Growth

- ◆ Post-colonial growth in under-developed countries
  - Double-edged sword of agriculture
  - Industrial growth
    - No innovation period
  - Throw away economy

## The Optimists' View

- ◆ The 20th century marked a period of unprecedented economic growth that lifted masses of people out of abject poverty.
- ◆ It brought technological innovations such as vaccines and other advances in public health that tackled many preventable diseases.
- ◆ The result has been a breathtaking enhancement of human welfare and longer, better lives for people everywhere on earth.

## The Pessimists' View

- ◆ All true, but at what ecological cost?
- ◆ The economic growth which made all these gains possible sprang from the rapid spread of industrialization and its resource-guzzling cousins, urbanization, motorization and electrification.
- ◆ The earth provided the necessary raw materials, ranging from coal to pulp to iron. Its ecosystems—rivers, seas, the atmosphere—also absorbed much of the noxious fall-out from that process.

## Global Warming: The Problem

- ◆ The Kyoto Protocol should lead to the stabilization of atmospheric concentrations of CO<sub>2</sub> at 550 parts per million (ppm).
- ◆ That is roughly double the level which prevailed in pre-industrial times, and is often mooted by climate scientists as a reasonable target.
- ◆ The worry is that a rapid rise in temperatures would lead to climate changes that could be devastating for many (though not all) parts of the world.

## Global Warming: The Vicious Circle

- ◆ Central America, most of Africa, much of south Asia and northern China could all be hit by droughts, storms and floods and otherwise made miserable. Because they are poor and have the misfortune to live near the tropics, those most likely to be affected will be least able to adapt.
- ◆ The snag is that poor countries are likely to continue burning cheap domestic reserves of coal for decades. That suggests the rich world should speed the development and diffusion of “low carbon” technologies using the energy content of coal without releasing its carbon into the atmosphere.

## Global Warming: Steps after Kyoto

- ◆ Governments everywhere (but especially in Europe) must understand that a reduction in emissions has to start modestly.  
That is because the capital stock involved in the global energy system is vast and long-lived, so a dash to scrap fossil-fuel production would be hugely expensive.
- ◆ Governments everywhere (but especially in America) must send a powerful signal that carbon is going out of fashion.  
The best way to do this is to levy a carbon tax, or mandated restrictions on Greenhouse Gas emissions
- ◆ Promote science and technology.  
That means encouraging basic climate and energy research, and giving incentives for spreading the results.

## Insuring A Brighter Future

- ◆ We cannot hope to turn back the clock and return nature to a pristine state nor must we freeze nature in the state it is today.
- ◆ “The most important thing to leave future generations is the capacity to live as well as we do today.” (Robert Solow)

## The Best Bet Is to Encourage The Powerful Forces for Sustainability

- ◆ The empowerment of local people to manage local resources and adapt to environmental change;
- ◆ The encouragement of science and technology, especially innovations that reduce the ecological footprint of consumption;
- ◆ The greening of markets to get prices right.



## Conclusion



- ◆ We have only one planet, now and in the future. We need to think harder about how to use it wisely, and how to deal with the problem of global warming.