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Valuing Damages and Policies to Correct Externalities

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Valuing Damages

- One of the major difficulties involved in setting efficient environmental policies arises because of the need to estimate the benefits of pollution control and other policies.
- In cases where pollution affects only marketed goods and services, the measurement is relatively straightforward.
- If a warmer climate reduces wheat yields, we can measure the damage by the change in the net value of the wheat.
- Similarly, if a new road requires tearing down someone's house, we can calculate the market value of a replacement dwelling.



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- Unfortunately, many types of environmental damage are extremely difficult to value.
- A classic example was the proposal to ban logging across much of the Pacific Northwest in order to preserve the habitat of the spotted owl.
- That would cost thousands of logging jobs and raise lumber prices. How should we value the benefits in terms of the continued existence of the spotted owl?
- Or, to take another example, the Exxon Valdez oil spill in Prince William Sound, Alaska, damaged beaches and killed wildlife.
- How much is the life of a sea otter worth?



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POLICIES TO CORRECT EXTERNALITIES

1. Government Programs
2. Private Approaches



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Government Programs

Direct Controls

- For almost all pollution, as well as other health and safety externalities, governments rely on direct regulatory controls; these are often called *social regulations*.
- For example, the 1970 Clean Air Act reduced allowable emissions of three major pollutants by 90 percent.
- In 1977, utilities were told to reduce sulfur emissions at new plants by 90 percent.
- In a series of regulations, firms were told they must phase out ozone-depleting chemicals. And so it goes with regulation.



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Market Solution: Emissions Fees

- In order to avoid some of the pitfalls of direct controls, many economists have suggested that environmental policy rely instead on market-type regulations.
- One approach is the use of *emissions fees*, which would require that firms pay a tax on their pollution equal to the amount of external damage it causes.



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Private Approaches

- It is generally thought that some form of government intervention in the market is necessary to overcome the market failures associated with pollution and other externalities.
- In some cases, however, strong property rights can substitute for government regulations or taxes.



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- One private-sector approach relies upon *liability laws* rather than upon direct government regulations.
- Under this approach, the legal system makes the generator of externalities legally liable for any damages caused to other persons.
- In effect, by imposing an appropriate liability system, the externality is internalized.



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