



The Environment Is About Economics, Too

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“One of the lessons we’ve learned from this spill is that we need better regulations, better safety standards, and better enforcement when it comes to offshore drilling.”

—President Barack Obama, June 15, 2010

The cleanup cost of the April 2010 BP oil spill¹ in the Gulf of Mexico is estimated at \$6 billion, not including the economic damage to the fishing and tourism industries, which will likely add several billion more. The spill has brought the debate about environmental protection and regulation to the forefront of the public’s consciousness. Proponents of stricter environmental regulation believe such catastrophes could be prevented at a reasonable cost.² Opponents argue that many preventive procedures are too costly to justify, given the rarity of such incidents. Preserving the environment is inherently an economic decision because of the trade-offs involved—resources used to produce clean air or water could be used to produce something else. Hence, understanding the economics of environmental regulation is useful for interpreting the debate.

Specifically, three concepts help explain the economics of environmental regulation. The first concept is *public goods*: A good is considered a public good if no one can be excluded from using it and its consumption by one individual does not reduce its availability to others. For example, clean air is a public good: One individual breathing clean air does not prevent others from breathing clean air. The second concept is *externality*, which can be positive or negative. A negative externality is an action by one person or organization that imposes a negative side effect on others. For example, factory pollution is a negative externality. In contrast, job creation and income tax revenues provided by factories are positive externalities—benefits that extend beyond the factory and its employees. The third concept is the *free rider problem*. An individual or organization that avoids paying to use (or protect) a public good is considered a free rider. For example, in the event of an oil spill, if one person or organization is willing to pay for the cleanup, everyone benefits and there is no problem. However, if *everyone* expects *someone else* to pay for the cleanup and as a result *no one* pays, a free rider problem exists. These three economic concepts together help explain why the marketplace can fail to solve problems efficiently and government intervention is sometimes necessary.

The government uses several tools to implement environmental regulation. For example, mandatory production standards are designed to prevent companies from damaging a public good such as air or water. Emission taxes that create financial incentives for industries to reduce known pollutants, for example, from oil and coal production, are used to reduce negative externalities. The government can also force a company that causes an environmental problem to clean it up, thus solving the free rider problem. Nevertheless, government regulation imposes costs on society: Higher production costs due to regulation may be passed on to households in the form of higher prices, which—if large enough—can harm the economy. Legislation and its enforcement increase the size and cost of government. As a result, economists usually perform cost-benefit analysis to determine appropriate levels of environmental regulation.³

Ideally, a government balances the cost of regulation with the cost of pollution to set suitable regulation levels. Most of the time, however, this is difficult because costs and benefits are hard to measure. For example, in 2003, U.S. regulators decided there was insufficient evidence to mandate the use of remote-control acoustic switches, given their high installation cost.⁴ An investigation may determine whether such a device could have prevented the Gulf oil spill. Regardless, more-accurate estimates of the costs and benefits of stricter environmental regulation designed to prevent catastrophes is both good economics and good public policy.

—By Yang Liu, Research Associate

¹ *Telegraph.co.uk*, “BP Oil Spill Clean-up Costs Could Total \$6BN,” June 11, 2010.

² Proponents are often concerned about moral and ethical problems related to pollution.

³ See Palmer, Karen; Oates, Wallace E. and Portney, Paul R. “Tightening Environmental Standards: The Benefit-Cost or the No-Cost Paradigm?” *Journal of Economic Perspectives*, Fall 1995, 9(4), pp. 119-32.

⁴ Remote-control acoustic switches are designed as a last resort for shutting off an underwater oil valve.

Additional Articles on Environmental Economics

[“Liability and Financial Responsibility for Oil Spills Under the Oil Pollution Act of 1990 and Related Statutes,”](#) by Michael Greenstone, testimony before the Committee on Transportation and Infrastructure, June 9, 2010.

Greenstone testifies about how the economic incentives of drilling decisions affect the chances of oil spills.

[“Is the Worst Over for Gulf Coast Tourism?”](#) by Amy Ellingson, *SouthPoint* (Regional Economic Information Network), Federal Reserve Bank of Atlanta, August 4, 2010.

Most members of the Gulf Coast leisure and hospitality sector realize that damage from cancellations and fewer visitors may not be reversed in 2010, but there is cautious optimism since the oil stopped flowing in mid-July.

[“Michigan Oil Firms Face Tougher Regulations,”](#) by Jaclyn Trop, *Detroit News*, August 18, 2010.

Two recent high-profile oil spills, the one in the Gulf of Mexico and another in the Kalamazoo River, could result in tighter restrictions on Michigan’s \$1.2 billion oil and gas industry.

[“The BP Oil Spill’s Lessons for Regulation,”](#) by Kenneth Rogoff, *Project Syndicate*, June 1, 2010.

The accelerating speed of innovation seems to be outstripping government regulators’ capacity to deal with risks, as the Gulf oil spill illustrates.

Free Data Sources and Reports

Resource: “Gulf of Mexico Oil Spill Multimedia Collection”

Description: This multimedia collection on the Gulf oil spill includes animation showing how the oil rig failed and interactive maps of the oil’s spread and landfall. Also see [“Teaching with Infographics: A Student Project Model,”](#) by Katherine Schulten, August 27, 2010, which includes a [teaching unit on the Gulf oil spill](#).

Published by: New York Times Learning Network

Location: http://www.nytimes.com/interactive/us/spill_index.html

Resource: Gulf Oil Spill Updates

Description: Although economic data cannot measure damage to the quality of life, the Gulf oil spill has affected the region’s economy. This site tracks and assesses the spill’s effects. Updates are developed from a variety of publicly available resources and posted as events evolve.

Published by: Regional Economic Information Network, Federal Reserve Bank of Atlanta

Location: <http://www.frbatlanta.org/rein/pubsresources/econ-impacts/gulfspill/>

Resource: EPA Laws and Regulations

Description: Allows browsing of environmental regulations by topic or business sector and provides state-specific regulatory information, enforcement and guidance documents, and more.

Published by: U.S. Environmental Protection Agency

Location: <http://www.epa.gov/lawsregs/>

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