

productive when a church adopts the policy preferences of environmentalists—it can even be contrary to the church’s stated mission. The church has not been told the truth about the negative, unintended consequences that will result from the global warming policies that they now endorse.

While relatively little is said in the Bible that directly addresses our use of natural resources, there is abundant advice on the importance of caring for other people. And that care does indeed depend, one way or another, upon our use of natural resources. But in order to make responsible policy decisions and avoid doing more harm than good to both the environment and humanity, it is imperative that we not repeat the mistakes of the past. I have come to the conclusion that these mistakes, like most policy mistakes, are usually the result of widespread misconceptions that exist in one particular domain: basic economics.



## Chapter 6: It's Economics, Stupid

DESPITE THE PUBLICIZED ranting by some climate scientists, science by itself has nothing to say concerning what should be done about global warming. Science is policy-neutral and values-neutral. While the Union of Concerned Scientists is interested in what society should do about a wide variety of issues like global warming, their views should carry no more weight than, say, the Union of Concerned Movie Stars' policy position on global warming.

Nevertheless, we scientists are citizens, too. We have our own opinions—this book, for example—about what should be done to reduce any number of perceived threats to humanity and the environment.

I have noticed that a person's opinions on policy matters are almost always a result of their understanding of economics. We cannot meaningfully discuss what should be done about global warming, or any other environmental policy issue, without a good working knowledge of basic economics.

Unfortunately, while economic concepts are inseparable from the discussion of our response to the threat of global warming, economists' explanations of how economics works are typically

so jargon-laden and obscure that my eyes glaze over just thinking about them. The good news is that the economic principles that are the most important to understand are relatively easy to grasp. Yet despite their simplicity, as well as the overwhelming historical evidence for their truth, many people still refuse to believe them. But you look like a reasonably intelligent person, so let's forge ahead.

The famous definition given to the term "economics" by the nineteenth-century economist Lionel Robbins is "the study of the use of scarce resources which have alternative uses." Another way of expressing this is that the practice of economics involves the exchange of our time and talents in ways that maximize how much stuff we all, collectively, get from the limited amount of stuff that can be produced. Putting it even more simply, economics involves people doing useful things for each other, hopefully in the most efficient manner possible.

Why should our policy response to global warming come down to economics? A progressive, environmentally conscious person might say, "Money, money, money ... all people are worried about is the bottom line, how much they can earn. The global environment is too important to reduce it to a matter of dollars and cents."

But what that person does not appreciate is that, except for social capital commodities such as love and friendship, *everything* comes down to money. Not money *per se*, but the relative value to humans of one thing versus another, which we quantify in units of money. Giving different things different monetary values is simply an easy way to quantify how important these things are to society. Humans cannot live without altering their environment to suit their needs, and smart economic decisions make sure that the needed natural resources are allocated (shared) in the most efficient ways.

Unless we understand basic economic principles, we cannot come to a responsible view of what should be done about global warming, or any other environmental issue that costs money to fix. So let's review some of the economic truths that I hold to be

self-evident. While none of these concepts are new, they have been clarified and sharpened for me by two great economists: Thomas Sowell and Walter Williams. Here I present them in a way that has made the most sense to me over the years. Any loss of accuracy resulting from my own interpretations and examples are my fault alone.

#### THERE IS NO SUCH THING AS A FREE LUNCH.

Unlike some truisms, this one is always true. Think radio is free? You pay for it through higher prices for goods and services advertised on the radio. Free health care? Someone has to pay for it. For many Europeans, their "free" health care is paid for by charging \$6 for a \$1 gallon of gas. Do you believe that the salesman really is throwing something in for free when you buy something else? Try telling him you will take just the free item, thank you very much.

I assume that people want to keep eating. Clothes to wear? Some place to live? Transportation? Communication? Medicine when they get sick? X-boxes and iPods? A clean environment? All of these things (which I will interchangeably call "wealth" and "stuff"), require work and resources to produce.

And what about those who cannot provide these things through their own efforts—the poor, widowed, orphaned, chronically ill, and the elderly? Taking care of them requires even more wealth. And what about when a natural disaster strikes, and many people are unable to contribute to the economy anymore, but still require goods and services just to survive? Still more wealth.

Misconceptions about money can get in the way of our understanding of wealth. Money has no inherent value by itself. It is simply a mutually agreeable and ready form of exchange of individual units of wealth between people. Money allows the car manufacturer to sell his car to the baker without having to accept 21,000 loaves of bread in exchange. And the baker can sell a single loaf of bread to the car manufacturer without having to accept a car turn signal bulb in return.

How about the government printing more money? That sounds like an easy way to create more wealth! Unfortunately, printing more money creates no new wealth. The printing and spending of more money by the government has the same effect as raising taxes since, in effect, it lowers the value of all of the money that is already in circulation. There is more money chasing the same number of goods and services, which then causes prices to rise.

The practice of printing more money is a major source of inflation. Entire governments have collapsed for not grasping the fact that money is not wealth. In Germany after World War I, money was printed as fast as possible to pay for debts that resulted from the war. The inflation rate was astronomical. Money that employees made in the morning was almost worthless by the end of the day. There were not enough printing presses to print money fast enough. It reached the point where people had trouble just carrying the amounts of money needed to pay for daily necessities.

The only way to create wealth is for people to do useful things for each other. There is no free lunch, because it took time, resources, and human effort to make that lunch.

One opinion that is often voiced about global warming policy is that, given the global warming threat, we must *do something*. But "doing something" inevitably means devoting some portion of our wealth to attack that problem, which means that that portion of our wealth is no longer available to address other problems. Thus, the cost of doing something to fix one problem needs to be weighed against the use of those funds to address other issues. It's one of those "cost versus benefit" things you might have heard about.

Put another way, there are not unlimited financial resources to fix every problem that faces mankind and the environment. This is a specific example of the more general economic truth that people have an unlimited source of wants, but only a limited supply of goods and services. We all want more than we can provide for each other. This is what economists like to call "scarcity."

John Stossel, a consumer advocate reporter on CBS's *60 Min-*

*utes*, years ago had a remarkable revelation. He finally understood some basic economic truths. In the first of a series of specials, he posed the question "Are We Scaring Ourselves to Death?" The title was meant to be literal, not figurative. His primary thesis was that, when we allow ourselves to be overly concerned about something that is a lesser threat, our spending of some portion of our wealth to solve that problem means that other, more pressing problems will likely get less money.

When the media decides what issues you should be informed about, they are unknowingly assuming a huge responsibility. The media shaping of public opinion on issues that the media decides are important can result in public policy changes that can literally kill people. Economists have been trying to tell us this for years, but we didn't understand them because they keep using words like "scarcity" and "marginal costs."

But shouldn't we be doing something about global warming as an insurance policy against future loss? Sure ... if it makes economic sense. For instance, we buy homeowners' insurance to protect us against a loss that we cannot afford to replace. It makes sense to spend, say, \$1,000 a year on homeowners' insurance that gives us 100 percent of the replacement value if a \$200,000 house is destroyed by fire. But in the case of global warming insurance, most policies being promoted are like paying \$10,000 a year on insurance that doesn't even begin to cover the replacement cost.

#### THE TOTAL AMOUNT OF WEALTH IS NOT CONSTANT.

Many people think that there is a constant amount of wealth, and all that matters is what you can do to grab a piece of the pie. In these folks' minds, there are the "haves" and "have-nots," and life is an unfair struggle for everyone to "get theirs." People who have this view are into class warfare; they are hateful toward, and jealous of, the rich. (By definition, the "rich" are people who make more money than you do.)

If it were true that the total amount of wealth is constant, how

could we explain the higher standard of living that we have created over the years? Many years ago, only the wealthy among us could afford an automobile, a refrigerator, or even a microwave oven. Now, even most of those who live in poverty have these modern conveniences.

A constant amount of wealth necessarily implies that it really doesn't matter what we do when we work, since it obviously doesn't change the total amount of wealth anyway. If this were true, we could all have jobs as ditch-diggers or ditch-fillers. Half of us could dig holes in the ground all day long, and the other half could fill them up again. We could have everyone working diligently, with zero unemployment. But no wealth would be created. Where would we get food? Clean water? Housing? Clothes? Medical care? TV's? Computers? iPods? Automobiles, airplanes, and all other forms of transportation? Who would invent new and more efficient ways of providing these goods and services? Not only would no new wealth be created, but existing wealth would be destroyed, since it would be gradually used up or worn out.

It makes all the difference in the world *what* people do when they work, not just *that* they work. Whether you pay your neighbor \$2 or \$2,000 to dig a hole in your front yard, you still only have a hole to show for it. It is what we do for our money, and how efficiently we do it, that matters. The more efficient we are at providing the goods and services that other people need, the more wealth everyone will have.

#### PEOPLE GENERATE WEALTH, NOT THE GOVERNMENT.

There is a true story about someone in the audience of a TV talk show remarking, "the taxpayers shouldn't have to pay for this service, the government should!" From an economic point of view, the taxpayers are the government. For the most part, government does not generate any new wealth, except to the extent that it provides some services that everyone values (e.g., national defense), which we pay for with our tax dollars.

The government collects money from us through taxes, and

redistributes it to others based upon whatever priorities our elected representatives have decided are important. But the value of that "government money" comes from commerce carried out between people, not from some sort of governmental blessing it has been given.

In a healthy economy, it is the people who determine what and how much of different things they want, not some government bureaucrat. It is not just a theory, but a historically demonstrated fact that it is the people—not politicians—who are the most efficient at deciding what goods and services they need and want, and what the prices of those things should be. Every time a nation's leaders try to control prices or supply, the will of the people is thwarted. This is why political and economic freedom is so essential to the prosperity of a country, and why many countries, especially in Africa, are so poor.

Even though the government does not, in general, create wealth, it can certainly enable or discourage the generation of wealth by its citizens through its ability to pass laws and collect taxes. Any activity that is taxed more by the government will be avoided more by consumers and investors. Conversely, activities that are taxed less will be encouraged. Partly as a result of capital gains tax cuts, the economy in 2005 and 2006 was so healthy that hundreds of billions of dollars more in tax revenue was collected by the government than was expected. That is a lot of money in anyone's book.

Thus, more tax revenue can usually be collected by encouraging economic growth than by raising tax rates. Tax revenues are a "percent of the action," and anything that stimulates more action leads to more tax revenue. When politicians try to collect more tax revenue by increasing tax rates, they usually end up hurting the wealth creation process and, as a result, collect less tax revenue.

#### FREE MARKETS PROVIDE THE MOST PROSPERITY FOR A SOCIETY.

As Adam Smith observed in his 1776 book, *An Inquiry into the Nature and Causes of the Wealth of Nations*, the selfishness of those

who seek a profit in a free market economy simultaneously causes an "invisible hand" to reach out to help others. After all, the person who grows rich only does so through the willing participation of other people. Others either give some of their money to get valuable goods or services that the rich person and his business offers, or they work for the rich person to help produce those goods and services. Everyone benefits when these transfers are done on a mutually agreeable basis, as is done in a free market economy.

In a free market economy like that in the United States, it is the consumers (you and me) who make economic decisions. If something costs more than we think it is worth to us, then we will spend our money on something else that has greater value to us. On the selling side, if the seller is failing to sell enough of an item that is being passed over by consumers, he will be forced to lower the price to make the item more attractive compared to other items. If a profit cannot be made by the seller because the item, through inefficiencies, cost too much to produce, then someone else will figure out a better, less expensive way to manufacture and distribute the item. Free market economies ensure that a maximum amount of stuff is available at the lowest possible price.

Decades of misery persisted in the former Soviet Union because the government made supply decisions for the people. The huge inefficiencies that resulted were caused by the lack of the continuous feedback between producers and consumers that exists in a free market economy. Soviet economists were fully aware of the problem, but their government wasn't very tolerant of criticism of its economic policies.

Our high standard of living depends upon allowing prices to fluctuate with supply and demand. The alternative is for government to artificially fix both supply and prices, but doing so only makes the market less efficient at generating wealth.

Even in America we have dabbled in controlling prices, and always with bad results. Price controls sound like they would help to keep things cheap, but in the end they create shortages and subvert the overall wealth-building nature of free markets. Prices rising and falling are a sign that the system is working. In con-

trast, price controls benefit the few who can get there first, while the rest of us don't get any.

When there are shortages in energy, the free market system offers the best solution to the problem. If gasoline prices rise sharply because hurricanes destroy oil platforms and drilling rigs in the Gulf of Mexico, or because global demand for energy was greater than production, some people will naturally conserve more to avoid paying the higher price for gas.

For instance, in 2005 virtually all of our Gulf of Mexico petroleum production capacity was shut down by hurricane strikes, causing gas prices to rise sharply. But within a few months, the average price of a barrel of oil started falling again. That's because people were conserving in the face of higher prices at the gas pump. They stopped taking that extra five-mile trip to the grocery store just to buy the Q-Tips they forgot the last time they went shopping.

In contrast, the desire of California's politicians to fix energy prices at some "fair" level resulted in blackouts during the summer of 2000. Electricity shortages were made much more severe because rising prices were not allowed to force the consumer to reduce consumption. California utilities lost huge sums of money because they had to pay other states high prices to get extra electricity during periods of high demand, but they were not allowed to pass the price increases on to the consumer. In the end, Californians had to pay for the higher prices anyway, because the government had to bail out the utilities.

Despite the central role that profits play in enabling the prosperity of a free market economy, there seems to be widespread resentment of the rich. Does Bill Gates have more wealth than he "needs"? Maybe. But the promise of greater wealth is why people work so hard to find more efficient, and therefore lower cost, ways of providing goods and services. History has shown that if the profit motivation is removed, people tend to get lazy. Then everyone suffers.

If a few people get obscenely rich in the process, what do I care? The software products that Microsoft creates have made my

job much easier and more productive. Those benefits, which are enjoyed by hundreds of millions of people around the world, are much more valuable to me than, say, my tiny share of Bill Gates' fortune should he decide to give it all back to the consumers.

Since Bill Gates cannot personally design, manufacture, and distribute all of these software products, he employs thousands of people who help him accomplish the task, who then share in the newly created wealth. Those Microsoft employees then exchange their money with all kinds of stores and merchants who, in turn, have their own employees.

The rich become rich only because consumers voluntarily give them money in exchange for the valuable goods and services they offer to society. The mere existence of the rich should remind us that the system still works, and that millions of people are benefiting from the innovative ideas of a creative few.

One of the biggest complaints about the free market system is that it is "unfair." There are wide disparities between rich and poor. But is it unfair that people be rewarded for their innovative work that leads to so much prosperity? For developing more efficient ways to meet the needs of their fellow man? For causing the creation of millions of jobs, thereby enabling many others to share in the newly created wealth? For creating the extra wealth that is needed to support (through charity) those who cannot support themselves?

Still, people continue to hold onto the mistaken view that by imposing "fairness" on the exchange of goods and services we can let everyone share equally in our wealth. While it does accomplish the equality part, it has the unintended consequence of making everyone equally miserable. There are no longer any incentives to maximize our creation of wealth, and so the economy suffers.

Despite these economic realities, the mainstream media continues to champion anyone who advocates such approaches to "fairness." World leaders like Cuba's Fidel Castro get glowing praise from people who themselves would not live in the eco-

nomic conditions that have been imposed upon that country. There's a reason why Cubans continue to drown trying to escape to the United States. If you want to see why so many journalists are so clueless on economic issues, just look at the course requirements for a degree at any journalism school.

The poor in a free market system are typically richer than the poor anywhere else. Because of the great amount of wealth that a free market economy generates, there is plenty left over for charitable contributions to keep people afloat who cannot, for one reason or another, provide for themselves.

The personal charity of people after Hurricane Katrina led to the housing of hundreds of thousands of people who had lost their homes. The rest of the country, through taxes, will help to rebuild the hurricane-devastated portions of Louisiana, Mississippi, and Alabama. The only reason the United States can absorb such a catastrophe with so little damage to its economy is the economic wealth and infrastructure that has been built up over the years. And that wealth is only possible through free markets, allowing the *people* to decide what something is worth to them, rather than allowing government bureaucrats to decide.

In a socialist country there are few rewards for extra effort, for new ideas, or for improved efficiencies. Everyone gets the same, equal, and comparatively small share of the total amount of meager wealth that has been generated by the populace at the direction of the government. A country like Sweden has only been able to make socialism work for so long because they are not entirely socialist. They have kept free market principles in place, which has helped to generate sufficient wealth to support the outrageous level of taxation they now have. And recently, in 2006, the increasing desire to generate jobs over welfare handouts has led to the ousting of the Social Democrat government in Sweden.

Finally, the great wealth generated by the United States' free market economy has not just helped the United States. While many nations of the world seem to resent the wealth of the United States, the technological innovations and increases in

efficiency we have spurred have benefited most of humanity. Other countries have reaped many of the benefits of America's inventions and manufacturing efficiencies.

This is one reason why we should not feel guilty that the United States happens to have the largest per capita carbon dioxide emissions of any country in the world. In a very real sense, we help feed the world, and we provide a vast variety of goods and services that have raised the living standards of the rest of humanity.

#### WEALTHIER IS HEALTHIER, SAFER, AND CLEANER.

Some Americans experience guilty feelings over our wealth as a nation, or over the fact that most folks don't have as much as them. Many environmentalists despise the West's modern way of life. Others feel that money has brought them more trouble than it is worth.

I believe that this collective angst is the result of many people simply having too much extra time on their hands—time which is only available because of the economic efficiencies we have created. There is a reason why only the wealthy nations of the world worry about the environment: we are the only ones with enough leisure time and wealth to afford that luxury.

Any guilt felt by the wealthy is needlessly self-imposed. If a rich person's wealth was created through the provision of goods and services that other people value, then you can bet that many more people have collectively benefited than the single, guilt-ridden rich person.

And what would the alternative be for people who think that wealth is bad? How would those same people like to deal with the angst of having half of their children not live to see their teenage years because of rampant disease, dirty water, poor nutrition, and food-borne illnesses from a lack of refrigeration? Until about a hundred years ago, this was the case for most of humanity. It is still the case for about one billion people today.

Or what about the angst of back-breaking labor just to make

sure your family has sufficient food, clothing, and shelter every day? It hasn't been that long ago that our level of wealth (say as measured by the Gross Domestic Product) began to skyrocket with the onset of the industrial revolution. Technological progress has given us new tools, new conveniences, new medicines, longer lives, and children who actually reach adulthood. Satellites and weather radars help to warn us of approaching hurricanes and tornadoes, saving many lives. In contrast, tropical cyclones in poverty-stricken Bangladesh as recently as the late twentieth-century routinely killed tens of thousands of people.

Do we really want to go back to the "good old days"? There are still people living today who lived through those days. If you talk to them, you will find that the good old days weren't so good after all. These people recount how miserable daily life was: dirty, smelly, full of illness, and dangerous. The widespread use of horses for transportation caused a continual stench, and many people were injured and killed by them.

The only reason everyone looked so fresh and happy on the TV series *Little House on the Prairie* was because those actors and actresses had just taken hot showers in their air-conditioned trailers after enjoying a catered lunch and were looking forward to their next big paycheck.

Bjorn Lomborg, in his excellent book *The Skeptical Environmentalist*, reviews in great detail, from the data made available in the U.N.'s own publications, how much better off both humanity and the environment are than they were in decades past. Most diseases that used to kill people before they reached adulthood have either been eradicated or now have cures. The production of wealth has led to the widespread availability of electricity, clean water, sanitation, and refrigeration to prevent food-borne diseases.

People who now yearn for the "good old days" do so from a position of wealth, health, comfort, and safety. Even though fossil fuels have been indispensable to the advancement of the human condition, some folks are seemingly now eager to dispose of what energized that progress. They are like spoiled children, biting the invisible hand that feeds them. Rather than celebrating all that is

good, they focus on what is wrong, as if it were possible to achieve perfection, to build a utopia that, unfortunately, can only exist in people's imaginations.

Yet some still persist in the belief that such a utopia can be built, where wealth and equality of outcomes can coexist. They cannot put modern life in the historical context that gives it meaning and demonstrates its superiority over the other alternatives. They feel that things could be so much better, without realizing that we are now at a historic pinnacle of progress, health, happiness, and safety. They go through their lives wringing their hands about the inequities of life without realizing that most people, through their own decisions, have chosen their present circumstances.

They do not realize it, but most of them would not want to live in a world where everyone is forced to be equal.

#### FROM ECONOMICS TO ENVIRONMENTALISM

Those who advocate the most impractical solutions to global warming seem to not understand how a free-market economy works—even though they participate in one. I'm sure most of them have pure motives, but to rephrase a famous saying, the road to environmental destruction is paved with good intentions.

It is imperative that we understand basic economic truths when considering policy approaches to fight global warming, or any other environmental problem. Other than social capital items like love and friendship, everything else that has value can be given a price. Does a forest of trees have more value as pulpwood and lumber, or as a place for folks to just enjoy nature? That decision comes down to how much people are willing to pay for one use versus another.

Let's say a person, we'll call him Jeremiah Johnson, owns forty acres of pristine wilderness, and that is literally all he owns. Jeremiah has to figure out what he will do to get enough food, clothing, and shelter to live. He might start by trying to do everything himself. He might fashion some sort of clothes out of grasses. He

might eat fruit and berries that he gathers in the forest, and plant some sort of crops. Jeremiah could start building himself a log cabin for shelter. He would just have to hope, for the time being, that he did not develop an illness or have a bad accident that would require medical attention.

Then, one day, someone visits Jeremiah and offers him a trade. If Jeremiah will give the visitor ten of his forty acres, he will receive in exchange food, clothing, and a house that will be built for him on his remaining thirty acres. For somebody in that situation, it would be difficult to pass up such an offer. If you have ever been primitive camping, you know what I mean.

Jeremiah has thus given a monetary value to his land. Monetary value is simply an expression of how valuable something is to people *compared to other things*. I, like most others, believe that the United States should set aside wilderness and parks, and keep them free from development. But that is because some kinds of land are especially valuable to the public. It is part of our collective national wealth. The decision to preserve that land is, ultimately, an economic one.

And it is its monetary value that ends up actually protecting privately owned land. In order to maximize the resources that the owner can harvest from his land, the landowner is naturally incentivized to sustain its value. The land will be of no value to anyone if it is destroyed. In order to maximize and sustain his profits, the landowner must care for the land in a responsible manner.

#### IS "BIG OIL" THE ENEMY?

As I have mentioned previously, if cost was no concern and we had easy alternatives for fossil fuels, then switching to those alternatives would be a no-brainer. But this is not the case. There are, as yet, no practical large-scale alternatives to fossil fuels.

Still, there seems to be a widespread perception that energy companies are somehow conspiring to keep lower cost and environmentally friendly energy alternatives from the masses. If only we would just switch to solar and wind power, our global



warming problems would be over, these folks reason. The energy companies are *trying* to poison the environment, just to spite environmentalists! *Mwa-ha-ha!!*

*Cigar-chomping oil company executive #1:* Hey, we haven't heard much lately from that environmental group. What's their name? ... oh, yeah, "Earth First, Humans Last."

*Cigar-chomping oil company executive #2:* You know, you're right. How about we cause an oil spill from a pipeline somewhere? That'll get 'em riled up!

Do we really think that energy companies enjoy being hounded by environmentalists and the public? If the price of gas goes up, they are accused of price gouging. If it goes down, they are accused of making it too easy to pollute because of cheap gas, or of giving in to political pressure from the White House. As I said earlier, people's understanding of basic economics also affects their political views as well.

Claims of price gouging ignore the fact that, due to real fluctuations (and forecast future fluctuations) in global supply and demand of petroleum, the price of a gallon of gasoline at the pump can fluctuate by as much as 50 percent in a single year for purely market-based reasons. Sure, when the price goes up, the oil companies can reap massive profits. Any industry which provides goods that everyone needs will make lots of money when reduced supply (or even the threat of reduced supply) causes prices to rise. After all, as mentioned earlier, the hope for large profits is what makes a free market economy so efficient at raising the standard of living for everyone.

But the petroleum industry has down years, too. They need funds to repair oil rigs, platforms, and refineries after a Category 4 hurricane rolls through the Gulf of Mexico and comes ashore. Would those who advocate a public redistribution of oil industry profits during time of high prices be willing to bail out those same companies out when disaster strikes? I don't think so.

Also, we should also keep in mind that those cigar-chomping executives don't own the oil companies. Public investors do. And for the most part, it is those investors who experience these gains and losses experienced by the industry, not the employees of the company.

In a free market economy like ours, the cost of alternative fuels is automatically taken into account, and determines to what extent they will be used as an energy source compared to other energy sources like coal and petroleum. A petroleum company employee once told me, if their company can find an economical source of energy other than fossil fuels, they will promote it. They are in the business of making money by supplying energy to consumers, and it doesn't matter to them what the source of that energy is.

If wind energy is indeed less expensive than coal-fired power plants in some portion of the country, then its use will gradually grow. If solar power is economically competitive, its use will also grow. But sometimes the government subsidizes uneconomical alternative technologies. In a free market economy, such artificial support for non-competitive technologies does not spur long-term investment in those technologies. Investors know that as soon as the artificial supports go away, any profit potential disappears. You can tell how much potential a future energy technology has just by how much private money is invested in its development.

Fortunately, the free market economy takes care of these issues automatically. If some future energy technology is indeed promising, then investors will support it and speed its development and deployment. The government doesn't need to do anything for this to happen, except to stay out of the way.

#### THE ECONOMICS OF POLLUTION

I am continually perplexed by environmentalists' attitudes toward factories and big business. The greatest number of products, with the least amount of wasted resources, energy, and pollution,

results from centralizing the making (mass production) of those products in large manufacturing facilities.

Despite these efficiencies, many people complain, "Isn't it awful, all of the pollution that factory is producing!" But, generally speaking, that factory is producing much less pollution and fewer wasted resources than if every family or every city was responsible for making those same products for themselves. All of the leftovers from the production process just happen to be concentrated in one place, giving us a false picture of the net effect of mass production on the environment.

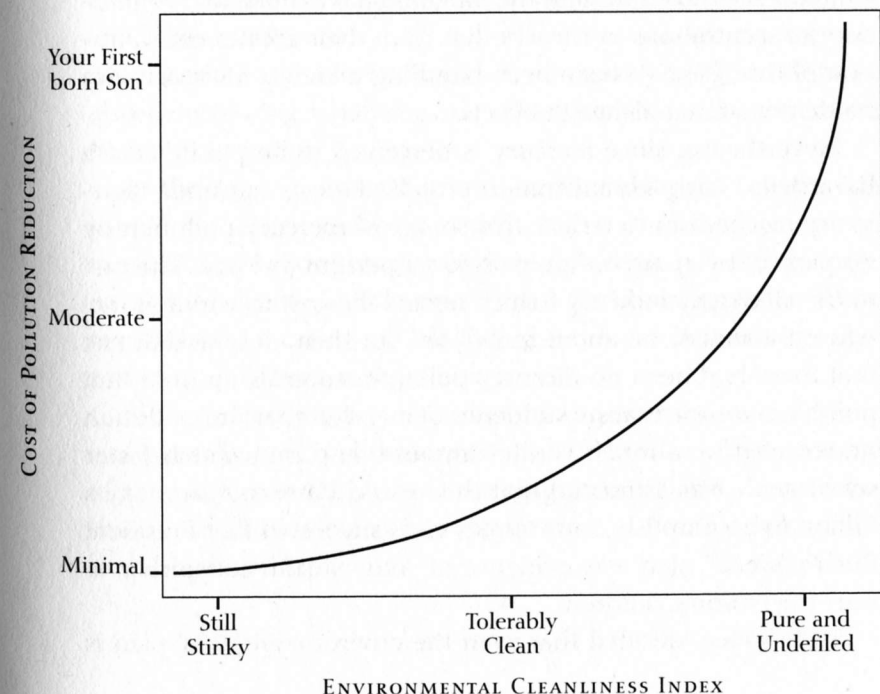
Certainly we need to keep this concentrated, centrally produced pollution from causing undue harm to the local environment or to human health, but the total amount of that pollution has already been minimized to a large extent through the economies of scale. Further reductions in pollution beyond some reasonable level are an economic decision. If such further reductions are mandated by the government, it costs some portion of our wealth to accomplish those reductions. How much more are we willing to pay for goods and services to achieve ever-increasing levels of cleanliness?

When the EPA mandates the reduction of some types of pollution to lower and lower levels, they seem to be unconcerned about what the cost to society will be. I was astounded when, at a recent air pollution control conference, an EPA official actually told the audience that "we can't stop pushing" for a cleaner and cleaner environment. This is a dangerous position to take, since there comes a point where the benefits of "cleaner" become too meager, and the costs too high. The result is that some of the limited wealth available to attack all of society's problems is no longer available to address some other problem of greater importance.

As a result, government regulators working for the EPA generally don't have to worry about the costs imposed upon society of reducing pollution by ever-increasing amounts. First they will mandate a 90 percent reduction in some pollutant. Then 99 percent. Then 99.9 percent. It never stops, because that's their job: to keep reducing pollution.

But no matter how hard we try, it is physically impossible to eliminate pollution. Even if it was possible, no one would want to pay the enormous cost of accomplishing it. Take your home as an example. You do not allow filth to build up to the point of being a health hazard. But, unless you happen to be obsessive-compulsive, neither do you spend inordinate amounts of time and energy making sure every surface is germ-free. Just as it costs something to hire a janitor or housekeeper, reducing pollution also costs something. And the cleaner we try to make things, the more it costs.

I have demonstrated the cost versus benefit relationship for pollution control efforts in the accompanying graph. (Scientists love graphs.) As environmentalists push for a cleaner and cleaner environment, the costs skyrocket. Since society has unlimited wants, but only limited financial resources, these costs must be balanced against the costs of addressing other problems facing society. As the graph demonstrates, the cost of a totally clean environment can be unacceptably high.



When the EPA demands an industry to “clean up,” do you really think they are going to absorb all of the cost of doing so? As a general rule, competition in the free market has already minimized their profit margin, which historically averages around 10 percent. The citizens who own stock in the company are the ones who share in those profits. Additional costs for pollution control in industry will simply be passed on, first to consumers, and then to shareholders in the form of lower profits.

As a result, when the public demands that some industry clean up its act, they are implicitly agreeing to pay the cost for that cleanup.

All too often, industrial pollution becomes a political football that environmentalists and politicians use to pander to public emotions. Take the example of mercury pollution from coal-fired power plants. This source of pollution has remained unregulated since it started in the late 1800s. There is no empirical evidence of negative health consequences of mercury pollution from these sources. Japanese cancer rates are much lower than those in the United States, even though the Japanese have much higher mercury concentrations in their bodies from their greater consumption of fish. Dentists have been handling mercury for years with no demonstrated ill-health effects.

Nevertheless, since mercury is perceived to be public health hazard, the Bush administration proposed a cap and trade regulatory mechanism to reduce this source of mercury pollution by 29 percent by 2010, ramping up to 79 percent by 2018. The cost to the electricity industry (which means the cost to you and me) was estimated to be about \$2 billion. But then, despite that fact that there had been no mercury pollution controls up until that point, environmentalists suddenly demanded that the pollution be reduced by a much greater amount, and on a much faster schedule. It was estimated that this would have cost over \$300 billion to accomplish. Some critics even suggested that President Bush’s “weak” plan was evidence of some stealth conspiracy to hurt the nation’s children.

Well, I have decided that even the environmentalists’ plan is

not stringent enough. The electricity industry clearly needs to stop all mercury emissions within one month. These so-called “environmentalists” obviously don’t think our children’s health is important enough to eliminate this dangerous pollutant right now. They must be out to hurt our kids, since their proposed emissions reductions do not eliminate the threat, and take so long to implement.

I think you see my point. It is vitally important that environmental regulations be fashioned to maximize benefits and minimize costs. This also means that the public should not be fooled by political rhetoric which claims some politician “wants” to pollute the environment, or is “against environmental regulations.” Every decision we make in our daily lives balances costs versus benefits, and the same balance needs to be applied to demands by some for an increasingly clean environment.

In summary, the policy response to global warming, just like any other environmental challenge, always involves economics. This chapter is meant to provide a better basis for you to judge for yourself whether proposed solutions to global warming (or any other environmental ill) make sense or not. We cannot simply mandate reductions in carbon dioxide emissions without also determining what negative consequences will likely result from such a policy.

In the coming years, there will be increasing pressure to “do something” about global warming. As we shall see, the risks of most currently proposed pollution reduction policies far outweigh the benefits. So, when politicians start claiming to be “doing something,” you need to ask two questions: “How much will it cost us?” and, “How much will it help?”

Since the proponents of dangerous and overly restrictive policies typically have political motivations, let’s take a look at some of the players in the global warming policy game. We will see that none of them can claim to be unbiased defenders of the moral high ground.