Sightline Institute

Grading Economics Textbooks on Climate Change

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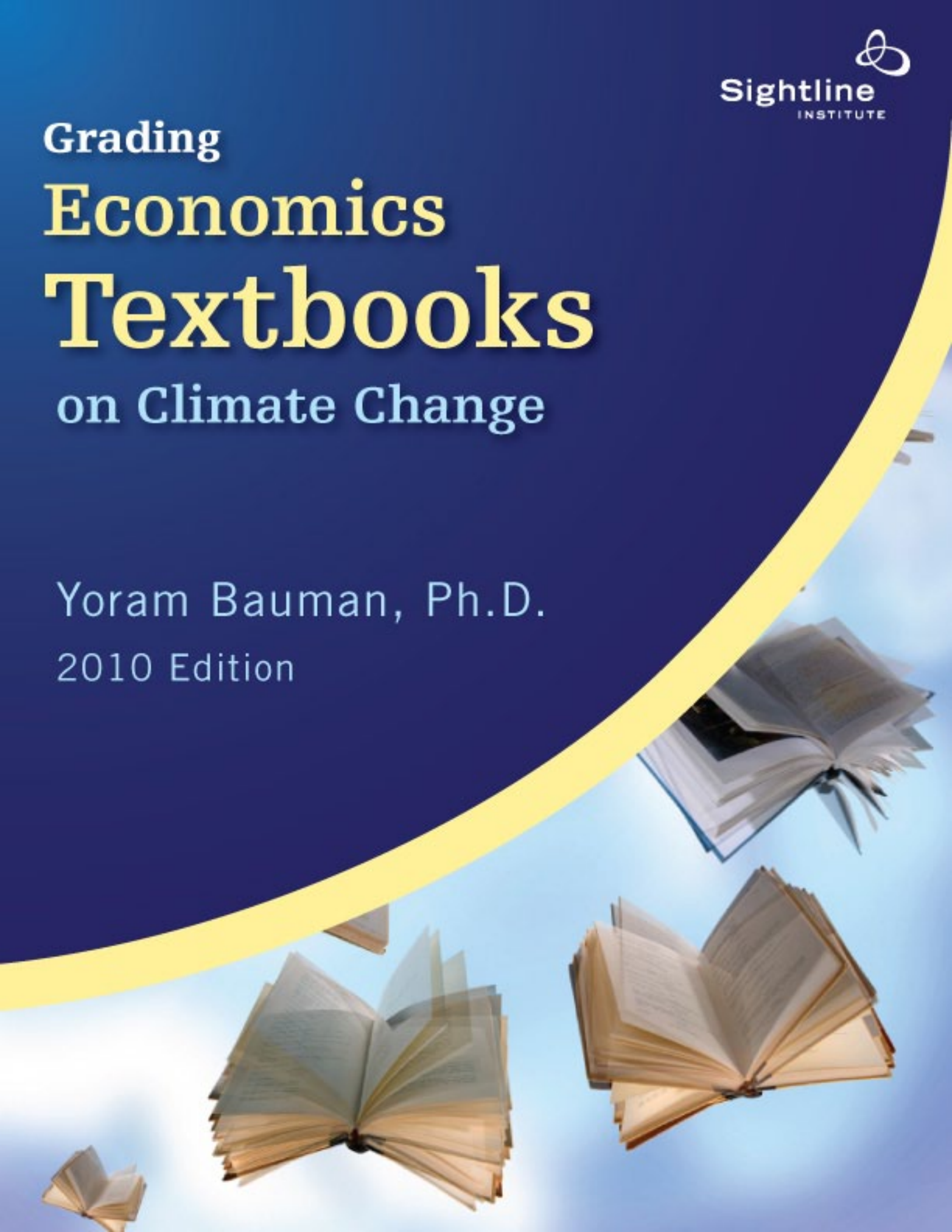
2010 Edition



2010 Report Card

Grading the treatment of climate change in economics textbooks

Highly recommended	
Colander *Economics, 8th ed.* (McGraw-Hill, 2009) Full review	A
Mankiw *Principles of Economics, 5th ed.* (Cengage Learning, 2008) Full review	A
Krugman and Wells *Economics, 2nd ed.* (Worth, 2009) Full review	A
Baumol and Blinder *Economics: Principles and Policy, 11th ed., 2010 Update* (Cengage Learning, 2010) Full review	A-
Recommended with reservations	
Case, Fair, and Oster *Principles of Economics, 9th ed.* (Prentice Hall, 2008) Full review	B
Parkin *Economics, 9th ed.* (Prentice Hall, 2009) Full review	B
O'Sullivan, Sheffrin, and Perez *Economics: Principles, Applications, and Tools, 6th ed.* (Prentice Hall, 2009) Full review	B
Hubbard and O'Brien *Economics, 3rd ed.* (Prentice Hall, 2009) Full review	C+
Hall and Lieberman *Economics: Principles and Applications, 5th ed.* (Cengage Learning, 2009) Full review	C+
Cowen and Tabarrok *Modern Principles of Economics* (Worth, 2009) Full review	C+
Frank and Bernanke *Principles of Economics, 4th ed.* (McGraw-Hill, 2008) Full review	C
Not recommended	
McConnell, Brue, and Flynn *Economics, 18th ed.* (McGraw-Hill, 2008) Full review	C-
Schiller *The Economy Today, 12th ed.* (McGraw-Hill, 2009) Full review	D+
Miller *Economics Today: Updated Edition, 15th ed.* (Prentice Hall, 2010) Full review	D
Arnold *Economics, 9th ed.* (Cengage Learning, 2008) Full review	D-
Gwartney, Stroup, Sobel, and Macpherson *Economics: Private and Public Choice, 13th ed.* (Cengage Learning, 2010) Full review	F

It's been ten years since I called attention to the horrific presentation of climate change in *Principles of Microeconomics, 7th Edition*—a textbook by Roy Ruffin and Paul Gregory, two University of Houston economists—so this year I decided to revisit the issue. In this report you'll find reviews of the treatment of climate change in 16 of today's most popular economics textbooks, complete with letter grades.

At the end, you'll also find my invitation to help deliver an appropriate prize to the winner of the 2010 *Ruffin and Gregory Award for the Worst Treatment of Climate Change in an Economics Textbook*. The traditional prize—as established with Ruffin and Gregory's book, which is now selling for $0.55 on Amazon—is for the book in question to be hounded out of print. Academic freedom is all well and good, but textbook authors and publishers should check their facts and otherwise fulfill their educational obligations before separating students or their parents from $200. At the very least, students and faculty deserve some metric by which to judge textbooks, and this review is an attempt to provide one such measurement.

The Process

I evaluated each book based on the most recent combined micro/macro edition I could find on CourseSmart. My grading benchmark was to give a C to books with a solid treatment of environmental economics but no mention of climate change. Grades went down for books that botched the basics of environmental economics or that presented a view of climate science or climate economics that was misleading or out of date; grades went up for books with a treatment of climate science and economics that was up to date, accurate, and thought provoking. There are, of course, many uncertainties about climate economics, so books that confidently asserted that everything would be fine—or, conversely, that business as usual would lead to catastrophe—were both marked down. There are also uncertainties about climate science, but failure to accurately represent the scientific consensus as reflected by the Intergovernmental Panel on Climate Change (IPCC), the National Academy of Sciences, and other such institutions led to demerits.

My Bio (and full disclosure)

I have a PhD in economics from the University of Washington, and since 2006 I have been a part-time lecturer in the UW Program on the Environment. I'm also a Fellow at Sightline Institute, but I spend most of the rest of my time performing as "the world's first and only stand-up economist" and working on a two-volume *Cartoon Introduction to Economics*, co-authored and illustrated by Grady Klein. Between my academic work and my own book-writing endeavors I've seen more than my fair share of textbooks.

Of the 16 books I evaluated, 15 are "best-sellers" in the field of microeconomics. I added the 16th book—a new offering from Cowen and Tabarrok—in part because my publisher is offering it together with my cartoon economics book as part of a package deal. (There's a similar arrangement with the Krugman/Wells book.) I've tried to be unbiased, but you can decide for yourself whether I've been tainted by the conflicts of interest related to my own book or to the paid comedy gigs I've done for a number of different publishers over the years.

Highly Recommended

Colander, *Economics, 8th ed.*

(McGraw-Hill Higher Education, 2009, $150.94)

From the book:

> A good example of the central role that economics plays in policy debates is the debate about global warming. Almost all scientists are now convinced that global warming is occurring and that human activity such as the burning of fossil fuel is the cause. The policy question is what to do about it. To answer that question, most governments have turned to economists. The first part of the question that economists have considered is whether it is worth doing anything, and in a well-publicized report commissioned by the British government, economist Nicholas Stern argued that, based upon his cost/benefit analysis, yes it is worth doing something. The reason: because the costs of not doing anything would likely reduce output by 20 percent in the future, and that those costs (appropriately weighted for when they occur) are less than the benefits of policies that can be implemented.

The organizational structure of Colander's text is weak, but the content is great: thoughtful and thought provoking, with a good sense of where there's consensus and where there's disagreement. Chapter 21 ("Market failure versus government failure") includes a decent discussion of taxes and permits, but most of the good stuff—and there's plenty—is in excellent sidebars such as "Economists and market solutions," "Economics and global warming," and "Global warming and economic policy" that are scattered throughout the book.

Two small quibbles: the excerpt quoted above should say that "human activity . . . is the *main* cause", not "the [only] cause." And, in another section, confusing language could lead readers to conclude that the US already has a carbon cap-and-trade program. Colander writes that "in 2008 [incentive-based policies] became the central idea in a policy proposal to reduce carbon emissions, with the US government creating a law that would require firms to [reduce emissions]." As of late 2010, US federal policymakers have yet to adopt a cap-and-trade program or other comprehensive incentive-based policy to reduce carbon emissions.

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Mankiw, *Principles of Economics, 5th ed.*

(Cengage Learning, 2008, $229.95)

From the book:

> Corrective taxes are unlike most other taxes . . . [M]ost taxes distort incentives and move the allocation of resources away from the social optimum . . . . Corrective taxes alter incentives to account for the presence of externalities and thereby move the allocation of resources closer to the social optimum. Thus, while corrective taxes raise revenue for the government, they also enhance economic efficiency. . . .

> A 2007 study published in the Journal of Economic Literature summarized the research on the size of the various externalities associated with driving. It concluded that the optimal corrective tax on gasoline was $2.10 per gallon, compared to the actual tax in the United States of 40 cents. . . . The tax revenue from a gasoline tax could be used to lower taxes that distort incentives and cause deadweight losses. In addition, some of the burdensome government regulations that require automakers to produce more fuel-efficient cars would prove unnecessary. This idea, however, has never proven politically popular.

After serving as chair of the Council of Economic Advisors for George W. Bush, Mankiw returned to his Harvard professorship and founded the Pigou Club, an "elite group of pundits and policy wonks" that argues for things like carbon taxes. (The group is named after economist A. C. Pigou, who came up with the idea of taxing pollution early in the 20th century.) So it is not surprising that Chapter 10 ("Externalities") has a strong treatment of pollution and market-based solutions like carbon taxes and tradable permits. Mankiw gets bonus points for using alternative approaches to climate change, including a terrific John Trevor cartoon and a reprinted *New York Times* op-ed piece ("One answer to global warming: A new tax", 9/16/07) that hammers home the advantages of a revenue-neutral tax shift.

He gets straight to the point in the main text, stating that:

> the burning of fossil fuels such as gasoline is widely believed to be the cause of global warming. Experts disagree about how dangerous this threat is, but there is no doubt that the gas tax reduces the threat by reducing the use of gasoline.

This is terrific—although, as with Colander, it should say that burning fossil fuels is "the primary cause" of global warming, not "the cause"—and I'm impressed with how Mankiw weaves together op-eds, cartoons, and well-written text to make an entertaining chapter. In my ideal world, he would spend a bit more time on climate science—maybe by including a temperature graph or mentioning the Intergovernmental Panel on Climate Change—but that's only because of our country's desperate need for conservative voices speaking up for climate science.

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Krugman and Wells, *Economics, 2nd ed.*

(Worth Publishers, 2009, $125.94)

From the book:

> Burning coal and oil releases carbon dioxide into the atmosphere. There is broad scientific consensus that rising levels of carbon dioxide and other gases are causing a greenhouse effect on the Earth, trapping more of the sun's energy and raising the planet's overall temperature. And rising temperatures may impose high human and economic costs: rising sea levels may flood coastal areas; changing climate may disrupt agriculture, especially in poor countries; and so on. . . .

> So there is a broad consensus among economists—although there are some dissenters—that government action is needed to deal with climate change. There is also broad consensus that this action should take the form of market-based incentives, either in the form of a carbon tax—a tax per unit of carbon emitted—or a cap and trade system in which the total amount of emissions is capped, and producers must buy licenses to emit greenhouse gases. There is, however, considerable dispute about how much action is appropriate, reflecting both uncertainty about the costs and benefits and scientific uncertainty about the pace and extent of climate change.

Krugman has been paying attention to climate change for a long time—as far back as a 1997 Economists' Statement on Climate Change, and as recently as this 2010 *New York Times Magazine* article on climate economics—so I expected great things from this book.

The coverage of climate change in Chapter 17 ("Externalities") leaves me disappointed because there's not much there apart from a mention of European cap-and-trade systems. The quality of the material is good but not perfect, especially in a perplexing sidebar on "Economic growth and greenhouse gases in five countries" that lists carbon emissions per capita and then claims (incorrectly, in my opinion) that "[a] more meaningful way to compare pollution across countries is to measure emissions per $1,000 of a country's GDP."

What merits an "A" for this book is Chapter 25 ("Long-run economic growth"), which has a section on environmental issues that does an excellent job of differentiating Malthusian resource-scarcity concerns from climate-change concerns, followed by three excellent pages on climate change. This pioneering treatment of climate change in the macro section on long-run growth is *fabulous*.

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Baumol and Blinder, *Economics: Principles and Policy, 11th ed., 2010 Update*

(Cengage Learning, June 15, 2010, $225.91)

From the book:

> Environmental taxes are perhaps the most powerful tool societies have for forging economies that protect human and environmental health. . . .
>
> Scientists have demonstrated that the documented global warming of the past century, and especially in the past decade, is at least partly a consequence of human activities that have increased "greenhouse gases" in the atmosphere. Most climatologists agree that the carbon dioxide buildup from the burning of fossil fuels such as oil, natural gas, and coal is a prime contributor to this problem. Forecasts of future warming range from 1.8° to 6.3° Fahrenheit by the year 2100.

The Baumol and Blinder book is very strong, both on climate change and on pollution in general, and it's no wonder: one of the authors wrote the environmental economics bible that I and countless others learned from in graduate school. If you're looking for a thorough treatment of pollution issues in general, this book is your best bet.

But there are lapses in the climate-change section, e.g., "1.8° to 6.3° Fahrenheit" in the quote above should be "1.1° to 6.4° *Celsius*," according to the Intergovernmental Panel on Climate Change (see Table 3.1 of their 2007 report.) A lesser quibble is that the reference to "most climatologists" should be changed to "almost all climatologists" to more accurately represent the views of the climate science community.

The book also needs some editing and some updating; for example, there's a reference to "the current administration" in which the authors are still clearly thinking about the Bush administration. And the authors should devote some thought to a sidebar that reproduces a NASA graph of global temperatures from 1880-2006 along with a 2004 *New York Times* article on Arctic warming. The NASA graph is terrific but the article is getting out of date, and in any case a *New York Times* article about the Arctic is almost certainly not the best use of this space.

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Recommended with Reservations

Case, Fair, and Oster, *Principles of Economics, 9th ed.*

(Prentice Hall, 2008, $194.00)

From the book:

> One of the most hotly debated issues involving externalities is the potential cost of global warming. There is currently no incentive for steel producers pumping carbon dioxide into the atmosphere to consider the fact that they may be contributing to widespread damage to the climate in 40 years. . . .
>
> In testimony before Congress in July 2005 the president of the National Academy of Sciences addressed the controversial issue of global warming. The following is from that testimony: "Nearly all climate scientists today believe that much of Earth's current warming has been caused by increases in the amount of greenhouse gases in the atmosphere, mostly from the burning of fossil fuels."

Chapter 16 ("Externalities, public goods, and social choice") includes excellent material on climate change, which also comes up in a host of other chapters on topics ranging from capital markets to long-run growth to carbon tariffs and international trade.

Overall, the book is a pleasure to read and the material is mostly excellent, but I do have two concerns. The first is relatively small: there's too much unwarranted use of words like "controversial" and "debated." The second, much larger, concern centers on this paragraph in a section on "the debate over global warming":

> The United Nations turned up the volume considerably in November 2007 when it released with great fanfare a report drawing attention to the serious catastrophes that would result without immediate joint action by the nations of the world. The report argued the following: As early as 2020, 75 million to 250 million people in Africa will suffer water shortages. Asia's large cities will be at great risk from rising ocean waters. According to the report, the world is heading toward warmer temperatures at an accelerating pace, with great human suffering to be the result.

In my opinion these statements are excessively fear-mongering and are not a good summary of the 2007 IPCC report. An additional problem is the lack of a good citation; the entire section is sourced to a 2005 speech by the president of the National Academy of Sciences, but obviously this speech could not have covered the 2007 IPCC report that the authors describe.

Except for the one bad paragraph, this is a fabulous book. If the authors can fix this section, the book will deserve an A.

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Parkin, Economics, *9th ed.*

(Prentice Hall, 2009, $194.00)

From the book:

> Global temperature and CO2 trends are starkly opposite to those of U. S. air pollution, as the figure shows. Scientists debate the contribution of human economic activity to these trends but most say it is the major source.

Chapter 16 ("Externalities") starts with a pretty awesome sentence: "We burn huge quantities of fossil fuels—coal, natural gas, and oil—that cause acid rain and global warming."

However, in my opinion, the text tends to confuse carbon emissions and local air pollutants before finally clearing matters up in a sidebar ("Global Temperature and CO2 Trends: The Greatest Market Failure?") that references the Stern Review and has an excellent graph of global temperatures and atmospheric CO2 concentrations.

Then there's a good treatment of market-based instruments, although the statement that "The Environmental Protection Agency is now considering using marketable permits to promote efficiency in the control of chlorofluorocarbons [CFCs], the gases that are believed to damage the ozone layer" could use some editing. There's no doubt about the damage that CFCs do to the ozone layer, and the CFC-trading programs happened in the 1990s.

There's also a sidebar ("Fighting Carbon Emissions with a Carbon Tax and Solar Subsidy") that includes excerpts from a 2008 *New York Times* op-ed ("On Carbon, Tax and Don't Spend"). Oddly, the text emphasizes solar power, something that is not mentioned in the op-ed.

Even more oddly, the idea promoted in the op-ed—that we should tax carbon and then use the revenue to subsidize alternative energy R&D—is one that economists generally look down on. (Economists tend to favor using the revenue to reduce other taxes, not to subsidize alternative energy.)

Parkin fails to accurately reflect the mainstream of economic thought on this subject, both here and when he writes:

> All economists agree that solving the global warming problem will require changes in the incentives that people face. The cost of carbon-emitting activities must rise and the cost of the search for new energy technologies must fall.

The first sentence here is great, and the first half of the second sentence is great too. But the last part gives the mistaken impression that economists agree that carbon tax revenue should be used to subsidize clean-energy R&D. This is not the case: raising the cost of carbon-emitting activities will by itself create incentives for firms to search for new technologies. Subsidizing clean-energy research could certainly help the development of new technologies, but many economists would argue that such subsidies are not needed and might even be harmful to society.

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O'Sullivan, Sheffrin, and Perez, *Economics: Principles, Applications, and Tools, 6th ed.*

(Prentice Hall, 2009, $153.33)

From the book:

> A report from the National Academy of Sciences, the nation's most prestigious scientific body, concluded that "greenhouse gases are accumulating in the Earth's atmosphere as a result of human activities" and that the "human-induced warming and associated sea level changes are expected to continue through the twenty-first century." The most important greenhouse gas is carbon dioxide, which is generated when we burn carbon-based fuels such as oil, coal, and gas. The report notes that there is considerable uncertainty about how our ecosystems will respond to a rapid increase in carbon dioxide and temperatures.

Chapter 31 ("External costs and environmental policy") has a fine treatment of environmental economics that includes a sidebar about climate change and carbon taxes. The only problem is that the sources at the bottom of the page list nothing more recent than 2002, with the scientific assessment from a 2001 report by the National Academy of Sciences. For a textbook published in 2009, this isn't good enough.

A similar problem occurs in the discussion of carbon taxes: "In 2002, New Zealand announced plans to implement a tax of $12 per ton of carbon, starting in 2007." Updated research would reveal that the New Zealand tax never happened, and that there are better examples of actual carbon taxes, like the one in British Columbia.

You'd think that a book with a windmill on the cover would have a greater emphasis on climate change, but no. In any case, the book needs more recent sources; it reads like it was last updated in 2002.

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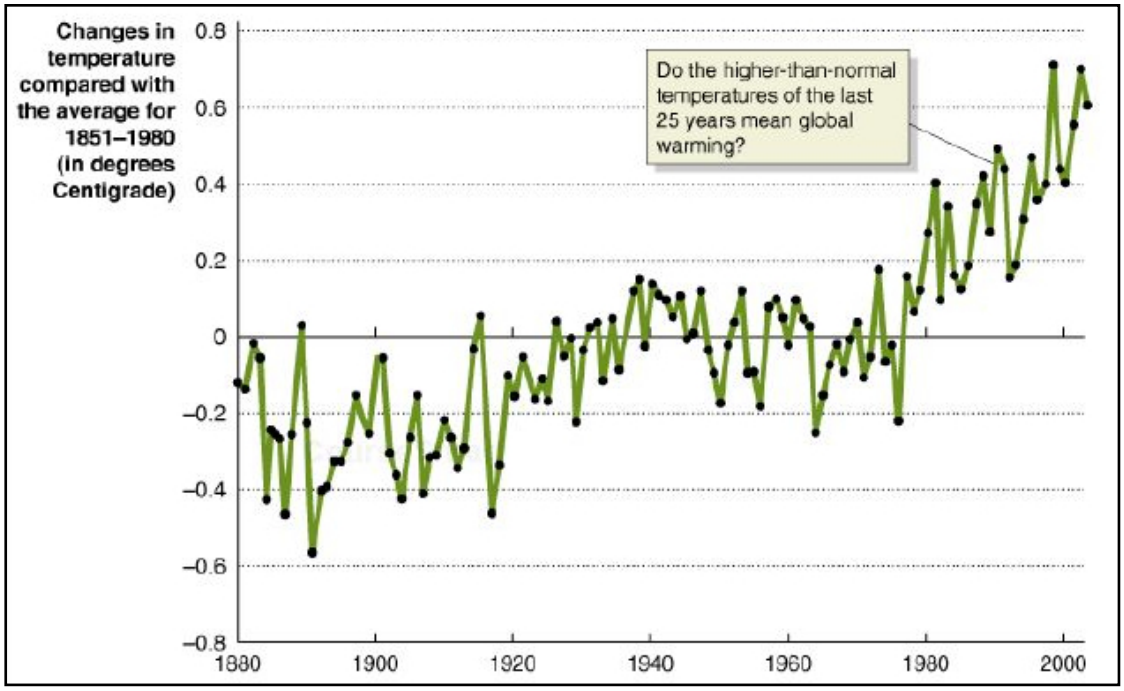
Hubbard and O'Brien, *Economics, 3rd ed.*

(Prentice Hall, 2009, $194.00)

From the book:

> Note that a Pigovian tax eliminates deadweight loss and improves economic efficiency. This situation is the opposite of the one we saw in Chapter 4, in which we discussed how most taxes reduce consumer surplus and producer surplus and create a deadweight loss. In fact, one reason that economists support Pigovian taxes as a way to deal with negative externalities is that the government can use the revenues raised by Pigovian taxes to lower other taxes that reduce economic efficiency.



Imagine a masterpiece vandalized by hooligans and you'll get a good sense of Hubbard and O'Brien. The NASA graph pretty much says it all. But in case you prefer words, let's go over the good, the bad, and the ugly, starting with the good, of which there is plenty. Chapter 5 ("Externalities, Environmental Policy, and Public Goods") tackles climate change early and includes good lines like, "the burning of fossil fuels generates carbon dioxide and other greenhouse gases that can increase global warming." Plus, there's the NASA graph of global temperatures and an excellent treatment of Pigovian taxes.

I'm also impressed with how up to date the topics and references are. There are lots of interesting sidebars and newspaper articles, like an energy company CEO's view of climate change from a 2009 *Wall Street Journal* article, and a 2009 *Seattle Times* article about pay-as-you-drive auto insurance in my home state of Washington, an idea championed by my friends at Sightline Institute.

But then there's the bad: way too much skepticism about climate science. For example, the authors distort the history of climate science and impugn the current consensus when they write:

> Global temperatures have gone through many periods of warming and cooling. In fact, the below-normal temperatures that prevailed before 1970 led some scientists to predict the eventual arrival of a new ice age. Nevertheless, many scientists are convinced that the recent warming is not part of the natural fluctuations in temperature but is instead due to the burning of fossil fuels, such as coal, natural gas, and petroleum.

And then there's the ugly, a graph from NASA with a shameful overlay. (For comparison purposes, imagine a biology book with a skeptical image about whether the Galapagos Islands really provide evidence for evolution by natural selection.) To make matters even worse, the graph in this edition is similar to a graph that appeared in the *1st edition*, published in 2006. In each of the next two editions, the graph was updated with data points for a few more years, but the "25 years" text in the overlay stayed the same—shouldn't it at least be updated to "30 years" by now?

For the record, the 2007 IPCC report says that there are more than 50 years of evidence, not 25. More importantly, the kind of unscientific skepticism expressed in the book should be beneath the authors.

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Hall and Lieberman, *Economics: Principles and Applications, 5th ed.*

(Cengage Learning, 2009, $229.95)

From the book:

> In the previous chapter, our examples showed how taxes create a deadweight loss. In this chapter, you've seen an example in which taxes eliminate a deadweight loss. So which is it? The answer is: A tax can do either, depending on the nature of the market in which the tax is imposed. In the previous chapter, we dealt with competitive markets that were otherwise economically efficient. Those markets were not characterized by any negative externalities. In such markets, a tax will reduce total benefits and create a deadweight loss. In this chapter, we're looking at competitive markets that are not otherwise efficient, because of a negative externality. In such markets, a tax of the right amount can increase total benefits and eliminate the deadweight loss.

Chapter 15 ("Government's role in economic efficiency") covers not only environmental issues but also—hang on to your hat—legal and regulatory issues, monopoly, public goods, adverse selection, and moral hazard. The fact that the authors manage to fit all this into one chapter is something of a miracle, but the downside is that there's not much space for climate change.

The main example of climate change concerns gasoline, with a brief mention of greenhouse gases, a comment about taxing "negative externalities, including . . . carbon dioxide emissions associated with global warming," and a few paragraphs that mention cap and trade in Europe and the 2009 Waxman-

Markey cap-and-trade bill here in the US. There are also a couple of one-sentence mentions of climate change elsewhere in the book in discussions of gas taxes and economic growth.

Instead of glossing over climate science, the book could really use a strong statement about it. And the authors' singular focus on gasoline is unwarranted, at least as far as climate change is concerned: coal is more important both nationally and internationally.

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Cowen and Tabarrok, *Modern Principles of Economics*

(Worth Publishers, 2009, $128.30)

From the book:

> Can tastes change something like the demand for oil? Sure. The environmental movement has made people more aware of global climate change and how the consumption of oil adds carbon dioxide to the atmosphere. . . .
>
> The success of the acid rain program in reducing SO2 emissions at low cost and concern over global climate change motivated President Obama to propose a tradable allowances plan for carbon dioxide, a greenhouse gas that contributes to global warming. Tradable allowances in carbon dioxide would change the economics of all energy, not just electricity, and would create incentives for firms to move toward nuclear, solar, and biomass fuels which contribute less to global warming. . . .
>
> To make progress against global warming, moreover, may require building a political coalition. A carbon tax pushes one very powerful and interested group, the large energy firms, into the opposition. . . .
>
> In recent years, successful markets have been created in the right to emit sulfur dioxide and new markets are being proposed to reduce the gases that contribute to global warming. . . .

Chapter 9 ("Externalities: When prices send the wrong signals") has a good discussion of environmental economics, but beyond the passages quoted above, a full-text search finds very little about global warming in this chapter, or indeed anywhere else in the book. The material that does get included is extremely weak. It's desperately in need of a strong statement about the scientific consensus on climate change and the connection between fossil fuels and CO2 emissions. (In a better world, one could assume students would come in knowing this, but we do not live in that sort of world.) An expanded treatment of climate policy would be helpful too—the material on the differences between taxes and permits is far too theoretical.

The authors' blog shows them to have incredibly wide-ranging interests, so it's not surprising that the book has fascinating material on externalities relating to antibiotics, asteroid impacts, and honeybees. What is surprising is the paucity of climate-related material. To quote the authors themselves:

> [E]conomics is the single best entry point for understanding many common dilemmas of the environment. . . . Unfortunately, most principles students leave the classroom still under-equipped to understand real-world policy debates over economic issues.

Exactly. These authors fall victim to their own critique.

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Frank and Bernanke, *Principles of Economics, 4th ed.*

(McGraw-Hill Higher Education, 2008, $120.00)

From the book:

> Each time fossil fuels are burned, they emit greenhouse gases into the atmosphere, which will accelerate the trend toward global warming. A tax on carbon would increase economic surplus by causing decision makers to take this external cost into account.

Chapter 11 ("Externalities and property rights") and Chapter 14 ("The environment, health, and safety") say nothing about climate change, and there's not much elsewhere. There is a mention of "the possibility of global warming," a thoughtful but unconnected analogy comparing the short-run economic "climate" to the short-run economic "weather," plus the sentences quoted above in a chapter on public goods and tax policy.

Chapters 11 and 14 together provide a somewhat disjointed treatment of environmental economics, but what really stands out is how disconnected the book is from the real world. For example, instead of discussions of climate change or other real pollution problems we get hypotheticals involving made-up companies named Sludge Oil and Northwest Lumber.

In Chapter 14, we read that "[t]he sale of pollution permits is now common in several parts of the United States, and there is growing interest in the approach in other countries." It is a statement that somehow manages to be both vague and outdated, with no direct mention of the EU Emission Trading Scheme, a fully operational carbon cap-and-trade program, or other permit-trading systems. And while the authors repeatedly bang the drum for pollution taxes—an excellent idea according to most economists, myself included—there is only a single solitary mention of carbon dioxide (quoted above) as opposed to generic statements about "pollution."

One of the authors (Bernanke, currently the chair of the Federal Reserve) can be forgiven for having other things on his mind. The other author (Frank) is famous for being an "economist naturalist," but you can't tell that from this book.

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Not Recommended

McConnell, Brue, and Flynn, *Economics, 18th ed.*

(McGraw-Hill Higher Education, 2008, $147.16)

From the book:

> The earth's surface has warmed over the last century by about 1 degree Fahrenheit, with an acceleration of warming during the past two decades. Some of this surface warming may simply reflect natural fluctuations of the earth's warming and cooling, but the balance of scientific evidence suggests that human activity is a contributing factor. . . .
>
> A growing body of scientific evidence suggests that accumulation of carbon dioxide and other greenhouse gases in the earth's atmosphere may be contributing to a climate-change problem.

Chapter 16 ("Public goods, externalities, and information asymmetries") includes a few pages on "the controversial climate-change problem." But the "balance of evidence" language quoted above is almost 15 years out of date, coming from a 1996 IPCC report. The most recent IPCC report, from 2007, says that "Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic [man-made] greenhouse gas concentrations."

And then check out what comes next:

> Because of the greenhouse effect, average temperatures are predicted to rise by 1 to 4.5 degrees Fahrenheit over the next 50 years and 2.2 to 10 degrees *by 3000* (emphasis added).

The authors are *off by 900 years*: if they substituted "2100" for "3000" they would be more in line with the 2007 IPCC report.

Unfortunately, it's not the only whopper:

> According to a 2007 study, a proposed $15 tax per ton of carbon emitted would add an estimated 14 cents to a gallon of gasoline, *$1.63 to a kilowatt hour of electricity*, $28.50 to a ton of coal, and $6.48 to a barrel of crude oil (emphasis added).

They're off by two full orders of magnitude here: $1.63 should be $0.0163, and that's not the only mathematical error. The figures they use refer to a tax per ton of carbon dioxide, not a tax per ton of carbon.

Overall, the book is not too bad if you ignore that it's based on climate science that is almost 15 years out of date and that it has multiple errors that would make Wikipedia blush. The fact that this textbook has over 20 percent of the market shakes my faith in capitalism.

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Schiller, *The Economy Today, 12th ed.*

(McGraw-Hill Higher Education, 2009, $148.25)

From the book:

> Changes in the atmosphere, the oceans and glaciers and ice caps now show unequivocally that the world is warming due to human activities, the United Nations Intergovernmental Panel on Climate Change (IPCC) said in a new report released today. . . .
>
> The earth's climate is driven by solar radiation. The energy the sun absorbs must be balanced by outgoing radiation from the earth and the atmosphere. Scientists fear that a flow imbalance is developing. Of particular concern is a buildup of carbon dioxide (CO2) that might trap heat in the earth's atmosphere, warming the planet. The natural release of CO2 dwarfs the emissions from human activities. But there's a concern that the steady increase in man-made CO2 emissions—principally from burning fossil fuels like gasoline and coal—is tipping the balance. . . .
>
> Other scientists are skeptical about both the temperature change and its causes. A 1988 National Oceanic and Atmospheric Administration [NOAA] study concluded that there's been no ocean warming in this past century. Furthermore, they say, the amount of CO2 emitted into the atmosphere by human activity (about 7 billion tons per year) is only a tiny fraction of natural emissions from volcanoes, fires, and lightning (200 billion tons per year). Skeptics also point out that the same computer models predicting global warming in the next generation predicted a much larger increase in temperature for the previous century than actually occurred. In mid-2001, the National Academy of Sciences resolved one of those issues. The Academy confirmed that the earth is warming, largely due to the increased buildup of greenhouse gas concentrations.

Chapter 27 ("Environmental protection") has some of the best material on climate change that I've seen in these textbooks, and also some of the worst. For example, the three paragraphs quoted above essentially come one after the other. But what exactly are students supposed to get out of this? Without the paragraph about the skeptics, it would be excellent material. With that paragraph it's just a jumble of outdated and inaccurate mush.

Similarly mushy is the author's treatment of the Kyoto Protocol, which mixes solid stuff with mistaken claims ("the developing nations of the world promised to curb their growth of emissions"), and facts that need to be updated (e.g., since 2007 China has been the largest CO2 emitter in the world, not the second-largest).

There's confusion elsewhere:

> One of the most frustrating things about all this environmental damage is that it can be avoided. The EPA estimates that *95 percent of current air and water pollution could be eliminated by known and available technology*. Nothing very exotic is needed: just simple things like auto-emission controls, smokestack cleaners, improved sewage and waste treatment facilities, and cooling towers for electric power plants (emphasis in original).

This is certainly not true for carbon emissions. Also potentially confusing are passages in which the author repeatedly mentions climate change in the same breath as the ozone hole; much of the general public thinks that these are the same thing, which of course they aren't.

Throughout, the author puts the latest climate science in a blender along with the Cato Institute and the Earth Liberation Front. The resulting mix has some stuff that is very good (the book even mentions the IPCC!) but also some stuff that is very bad in terms of both climate skepticism and climate alarmism. And the book needs to prune outdated references from the early 2000s or earlier, most egregiously the 1988 NOAA report.

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Miller, *Economics Today: Updated Edition, 15th ed.*

(Prentice Hall, 2010, $180.00)

From the book:

> Air pollution . . . adds to accumulations of various gases that may contribute to global warming. . . .
>
> In recent years, certain scientific research has suggested that emissions of carbon dioxide, sulfur dioxide, and various other so-called greenhouse gases might be contributing to atmospheric warming. The result, some scientists fear, might be global climate changes harmful to people inhabiting various regions of the planet.

Climate change comes up mid-way through Chapter 32 ("Environmental economics") in a section on "reducing humanity's carbon footprint," but the only mentions of climate science are extremely weak. Beyond the quote above, there's no mention of the potential harms from climate change. Instead, Miller has a sidebar titled "For Greenland, a warming climate is good economic news."

There's also no discussion at all of positive policy moves, such as the revenue-neutral carbon tax in British Columbia. Instead, Miller focuses on governmental foibles, such as a Belgian climate policy aimed at backyard BBQ grills, the climate footprint of the US government, and the problems that plagued the first round of the Emissions Trading Scheme in the European Union. (The material on the EU ETS is excellent, but taken as a whole the treatment of policy is too one-sided.)

Overall, Miller fails to provide a balanced treatment of either climate science or climate policy. The text needs stronger statements about climate science—and for the record sulfur dioxide is not a greenhouse gas. It will be interesting to see if later editions identify what appear to be significant improvements in the second round of the EU Emission Trading Scheme.

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Arnold, *Economics, 9th ed.*

(Cengage Learning, 2008, $229.95)

From the book:

> Here is an often heard argument: (1) Greenhouse gases generated by human activity, such as driving cars, are causing global warming. (2) If the car industry were forced to produce more gas-efficient cars, we would burn less gas. (3) Therefore fewer greenhouses gases would be emitted. To this argument an economist might respond, "It's not guaranteed to turn out that way."

Chapter 28 ("Market failure: Externalities, public goods, and asymmetric information") has a detailed discussion of cap and trade but a measly four paragraphs on pollution taxes. The author's treatment of "market environmentalism" is so confused that students are likely to conclude that cap and trade and pollution taxes are completely different, when in fact they're basically the same.

The author also consistently downplays environmental problems by giving unwarranted emphasis to statements like "[s]ome pollution is likely to be a better situation than no pollution." The best example of this unfortunate habit comes in the passage quoted above, which is also one of the book's few passing mentions of global warming. The author's point—that elasticities might be such that driving would go *up* with more fuel-efficient cars—is apparently so important to him that the author feels compelled to repeat it in a section titled "Some effects of regulation are unintended." Now, it is of course true that this is a *theoretical* possibility, but the author gives no evidence that this has any *practical* relevance.

This book flubs the basics of environmental economics and ignores climate change. The author would do well to spend less time on theoretical possibilities and more time on actual climate science and policy.

The publisher would do well to hire an editor who can clean up the weak writing, like this pointless topic sentence: "Some economists believe that a series of events are occurring today."

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Winner of the 2010 "Ruffin and Gregory Award"

Gwartney, Stroup, Sobel, and Macpherson, *Economics: Private and Public Choice, 13th ed.*

(Cengage Learning, 2010, $229.95)

From the book:

> The billions of dollars going into global warming research give scientists an incentive to maintain climate change as a public issue. As [MIT climatologist Richard] Lindzen puts it, "Alarm is felt to be essential to the maintenance of funding . . . "

> The estimated costs, the special-interest involvement, and the scientific uncertainties leave many economists unwilling to recommend strong regulations to reduce emissions of carbon dioxide.

There's only one positive for me in this textbook: in the midst of a fairly standard economics treatment of the Simon/Ehrlich debate in Special Topic 13 ("Are we running out of resources"), an earlier edition of this text referenced a *Newsweek* cover story ("Running out of everything") dated November 19, 1973 . . . which just happens to be the date of my birth!

But after that, it's all downhill, especially once we get to Special Topic 14 ("Difficult environmental cases and the role of government"). The book's treatment of climate science is captured in the following statement: "[T]he earth has experienced both warming and cooling trends in the past, and the current warming trend may well be unrelated to the emissions of carbon dioxide and other greenhouse gases into the atmosphere."

This statement is not only out of line with the 2007 IPCC report, it's even out of step with the conservative Cato Institute, which says in its 2009 policymakers handbook that "[g]lobal warming is indeed real, and human activity has been a contributor since 1975."

But don't expect the authors' treatment of global warming to change anytime soon. The material in the 13th edition, from 2010, is almost word-for-word identical to the treatment in the 11th edition, which was published in 2006. So future editions seem likely to continue the uninterrupted barrage of one-sided statements about an alleged climate conspiracy, and how economists are supposedly lined up in opposition to climate action.

All this and more makes this book the winner of the 2010 *Ruffin and Gregory Award for the Worst Treatment of Climate Change in an Economics Textbook*.

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Postscript

If you agree with my assessment of Gwartney et al's book, I hope you will send a note to the publisher's representative at Cengage, john.carey@cengage.com, and to the authors themselves: jdgwartney@fsu.edu, rstroup@unity.ncsu.edu, rsobel2@wvu.edu, David.Macpherson@trinity.edu. Please don't get carried away: the most threatening statement you should even *consider* making is to tell Cengage that if they don't drop the Gwartney et al. book you will stop using Cengage's other books (Mankiw, Hall/Lieberman, Baumol/Blinder, and Arnold; but of course you should stop using Arnold regardless). Thank you for doing your part to give this book the prize it so richly deserves! If you liked these reviews and found them useful (or not), feel free to drop me a line about it.

Authors: I am happy to offer *free and confidential* feedback on draft material related to climate change. I think that my track record shows that I am a fair reviewer of climate-related economics material, and I'd rather help you get the facts right beforehand than criticize you afterward.

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