



The Takeaway

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The Time for A Carbon Tax Is Now

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The case for a carbon tax is a compelling one, given our current macroeconomic quandary and our apparent inability to deal with climate change. Each of these factors alone can make the case persuasively. When we take them together, the tax becomes even more convincing as a solution to some seemingly insurmountable problems.

CASE 1: THE MACROECONOMICS

Like it or not, for the foreseeable future tax increases are a necessity. The United States' 2009 federal deficit was \$1.4 trillion—almost 10% of GDP (Congressional Budget Office). By comparison, at about 10% of GDP the U.S. did better than

newsmakers Greece (13.6%) and Spain (11.2%) but worse than, for example, Portugal, France and Romania (Eurostat, April 2010).

Even if we assume that the U.S. economy returns to health with robust growth, the long-term full employment structural deficit was estimated at \$475 billion earlier this year (CBO). While

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WHAT'S THE TAKEAWAY?

The U.S. needs to get its finances under control, but the usual fixes of raising taxes and/or cutting spending will merely stymie the recovery

A carbon tax has big long-term revenue potential and only small, short-term drawbacks

A carbon tax avoids the pricing pitfalls of cap-and-trade and moves towards replacing our energy infrastructure over time

Paradoxically, a carbon tax would be a boon for natural gas

many would like to erase the structural deficit by slashing spending, we know from past legislative behavior that once elected, lawmakers have little appetite for axing special projects in their own districts or states.

Living indefinitely with massive deficits is not an option. Even if the Chinese continue to buy our debt, it is morally indefensible to mortgage our future. Most Tea Party supporters don't seem to realize that without equal spending cuts, the tax cuts they crave will amount simply to more deficit spending and higher future taxes to be paid by their children and grandchildren.

But while tax increases coupled with spending cuts is good long-term macroeconomic policy, in the fragile state of the U.S. economy today these will only dampen the demand that can spur economic recovery. This is our quandary.

The carbon tax should start at a low rate, then rise significantly over time

To minimize short-term macroeconomic impacts, we need a tax that commits to start at a low rate and then to rise over time, generating large revenues in the future. This policy would send a credible message to capital markets that the U.S. is getting its finances in order, and assure the primacy of the U.S. dollar in world capital markets.

But what kind of tax can do this? Answer: A carbon tax that begins at, say, \$5 per ton of

CO₂, rising at a rate of 4% plus the rate of inflation. If inflation averages 3% per year, over 10 years tax rates double. Over 20 years, they quadruple and over 30 years, they grow eightfold. To get an idea of the revenue potential, assume such a carbon tax stabilized CO₂ emissions at 2007 levels. In the first year of the tax, revenue would be \$37 billion. But in the 10th, revenue would be \$74 billion and after 20 years, it would be \$148 billion. After 30 years, revenues could reach \$296 billion. But the short-term effect on consumers would be minimal, raising gasoline and heating oil prices by 5 cents per gallon. Even a \$10 per ton carbon tax would have a benign effect on the economy.

CASE 2: THE ENVIRONMENT

As a general rule, taxes hinder economic efficiency because they raise the cost of doing business and reduce workers' incentives to work and save. But linking a tax to a pollutant can have the beneficial effects of reducing pollution by encouraging the development of non-polluting technologies. Unlike higher income tax rates, a carbon tax would not weaken incentives to work and save.

Rather, by making carbon-intensive products more expensive, the tax would encourage consumers to choose less polluting goods. If some want to keep buying large amounts of carbon-intensive products, those people will have to pay the rest of us for that privilege. So a carbon tax is fair in the sense that it would apply to all of us — rich, poor, and middle class.

Any justification for a carbon tax must rest on the science of climate change and the economics of its impacts on GDP and quality of life. There is a huge literature on these topics. Our reading of the science of climate

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change is that the phenomenon is real, and will loom ever larger as China and India join the club of advanced nations. When most economists assess the costs and benefits of policies to cut carbon emissions, they conclude that draconian actions to quash carbon emissions are not called for. We do not need to scrap the existing infrastructure of energy use tied to fossil fuels. But, as we replace the infrastructure over time, we must do so with renewables and fuels that leave lighter carbon footprints.

The beauty of a carbon tax that starts low but grows over time is that it will accomplish this energy transition with minimal macroeconomic disruptions. For example, a \$5 per ton carbon tax initially will raise the cost of coal by almost 50%. Since coal plants enjoy a big cost advantage over other fuels, for the most part coal plants will not be retired prematurely. But when they are, cost-conscious engineers will weigh the projected future costs of a new coal plant against other options.

In 30 or 40 years, we could fully replace our electricity-generating infrastructure with low or zero carbon-emitting facilities, a move that makes good business sense and good environmental sense. If we start the carbon tax today, we begin to reconfigure the energy infrastructure of the U.S. economy. The reason most economists prefer a carbon tax over a cap-and-trade

system is that it avoids the extreme volatility of carbon prices. In a cap-and-trade system, if regulators issue too few allowances, carbon allowance prices can skyrocket as they did in Europe. We don't need the uncertainty that cap-and-trade would create; hopefully, that policy is off the table for good. But Washington does desperately need both the tax revenues that a carbon tax can bring, and a sensible climate change policy.

...But replacing it over time with low or zero carbon emissions makes good business sense

Now, let's consider the potential objections to a carbon tax, and offer a response:

Objection: *U.S. producers of carbon intensive products will be less competitive if the same tax is not imposed on imports of manufactured goods. Without carbon taxes on imports, manufacturing may move abroad to take advantage of lower taxes elsewhere.* Opponents of a carbon tax will call for import tariffs to level the playing field for U.S. producers. But many high-intensive carbon products that would be affected have already left the U.S. The modest magnitude of the proposed tax, especially in the early years, is unlikely to encumber the few affected industries. Finally, taxing imports based on equivalent emissions would be an administrative nightmare. A future *Takeaway* can take a closer look at the trade angles, but our view is that we should not let trade issues block a domestic carbon tax.

Objection: *Congress will see the carbon tax revenue as an invitation to increase spending to match.*

A carbon tax bill should stipulate that if spending in the previous year grew in real (inflation-adjusted) terms, then the planned increase of the tax rate would not occur. In sum, the annual increases in the carbon tax of 4% plus inflation would only happen if spending were stabilized in real terms. This may not be enough to deter future spending hikes, but it will keep more carbon tax revenues from being used to pay for them.

Objection: *A carbon tax may look to some like an attempt to eliminate the use of all fossil fuels.*

All fossil fuels are not created equal. A carbon tax would likely be a boon to the U.S. natural gas industry. Why? In a conventional coal plant, it takes 3 million BTUs to generate 1 million BTU of electricity. In modern combined-cycle natural gas powered plants, it takes only 2 million BTUs to generate the equivalent electricity. Moreover, each million BTU of coal emits

205 pounds of CO₂, while natural gas emits only 117 pounds. Thus, from coal, it takes 615 pounds of CO₂ to produce what natural gas produces with 234 pounds of CO₂—a 62% reduction. A carbon tax rightly will penalize coal much more than it does natural gas. Given our huge potential domestic reserves of natural gas from shale formations, natural gas could easily replace coal as our dominant fuel for electricity generation, and at the same time vastly cut CO₂ emissions.

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