

## The Real Problem with Carbon Taxes

Carbon taxes have reemerged as a political issue. See for example, the recent *Wall Street Journal* articles by Amy Myers Jaffe (“A Price on Carbon May Be Coming Soon to the U.S.”) and George David Banks (“Why a Price on Carbon Is Unlikely in the U.S. Anytime Soon”). Perhaps understandably in this highly politicized season, most of this discussion centers on the legislative mechanics of passing a carbon tax. The discussion should focus instead on the actual merits of such a tax.

Economists have long recognized that taxation can be a useful means to discourage consumption if – and only if – there is a reason to do so. Without a clear and defined benefit, such taxes simply divert funds from consumers to the government. Regressive taxes, i.e., those that fall disproportionately on the middle class and the poor, reduce disposable income at a time when families are struggling to meet their needs. The issue is not can we impose a carbon tax, but why should we?

The supposed purpose of a carbon tax is to prevent catastrophic climate change by reducing US emissions of carbon dioxide. Such apocalyptic scenarios are pure speculation, unsupported by any empirical evidence. The only thing we know for sure about carbon dioxide in the atmosphere is that it sustains life, providing essential nutrients for food crops, increasing the drought-resistance of plants and fostering an observable and well-documented greening of the Earth, particularly around the edges of deserts. Catastrophic climate change is an artifact of computer models, which use questionable assumptions and cannot replicate the world as it actually is. Although some people are of the opinion that carbon dioxide is a risk to humans, there is no science behind this view and no basis for policies designed to reduce its emission into the atmosphere.

Even those who worry about possible adverse effects of carbon dioxide, however, are facing a fundamental arithmetic problem: there is no level of carbon taxation that can reduce CO<sub>2</sub> emissions in any meaningful way without inflicting serious damage on the economy. It’s interesting to note that most of the articles written about carbon taxation fail to discuss the level of the tax.

To calibrate the issue, consider the “American Opportunity Carbon Free Act” introduced last year by Senator Sheldon Whitehouse (D-RI). This bill includes a carbon tax starting at \$42/mt and increasing at 2% above the rate of inflation until US CO<sub>2</sub> emissions fall by 80%. Assuming 2% annual inflation, the tax would grow to around \$85/mt by 2035. What would this mean for the average American?

In 2015, the United States emitted about 5,500 million metric tonnes (mt) of CO<sub>2</sub>. According to the US Census Bureau, there are about 125 million households in the US, so each household emits, on average, 44 mt of CO<sub>2</sub> annually. Roughly half of this CO<sub>2</sub> is generated directly by homeowners through their automobiles and home heating and cooking. The other half comes from the energy used to generate electricity and to manufacture and transport the goods and services we consume. Senator Whitehouse's bill would hit consumers with a tax starting at about \$1,850 per household per year, and increasing to around \$3,770 by 2035.

These taxes would clearly be a major burden on American households at the outset. The hope, of course, is that these taxes would increase energy efficiency and provide an incentive to switch to low carbon fuels. Presumably, the tax burden would decrease as US consumers emitted less CO<sub>2</sub>. But is this hope realistic? Once again, a little arithmetic will help.

### **Tax Burdens**

Let's consider driving, for example, since gasoline use accounts for about 25% of US CO<sub>2</sub> emissions. According to the AAA, in 2015 a mid-sized sedan driven 15,000 per year would cost \$8,604 to operate, including \$1,032 for gasoline (482 gallons @\$2.139 per gallon). Combustion of a gallon of gasoline emits 8.9 kilograms of CO<sub>2</sub>. Senator Whitehouse's \$42/mt tax would add 37¢/gallon to the price of gasoline, which would translate into an additional \$180 per year or 2% to the cost of driving. Over the last 15 years, US gasoline prices have varied from a low of \$1.101/gallon in December 2001 to a high of \$4.165/gallon in July 2008. This natural market range is about eight times the size of the proposed carbon tax, yet failed to effect any significant transformation in American driving habits.

Currently, electric cars cost about twice as much to buy as their conventional equivalents. A carbon tax of about \$670/mt would be required to make electric cars cost competitive.

As another example, let's consider electricity, the sector in which renewable energy like wind and solar competes and which accounts for about 40% of US CO<sub>2</sub> emissions. The lowest-cost source of new power in the US today is advanced combined cycle fueled by natural gas, which can generate electricity for about 3¢ per kilowatt-hour (kWh). Onshore wind power, the least expensive renewable energy source, is about twice as expensive at 6¢ per kWh. Solar photovoltaics come next at 9½¢/kWh, followed by offshore wind at 15¢ and solar thermal power at 21¢. Senator Whitehouse's proposed carbon tax would

add about 1¢/kWh to the cost of natural-gas-fired generation, only about one-third of its gap with onshore wind. Looked at another way, equalizing the costs of gas-fired and renewable power generation would require carbon taxes of \$107/mt for onshore wind, \$247/mt for solar photovoltaics, \$473/mt for offshore wind, and \$713/mt for solar thermal power plants. Should we really expect a fundamental restructuring of the industry from a \$42/mt tax?

Carbon taxes that could actually be expected to induce investors and consumers to change from fossil fuels to renewables would need to be extremely high. Even then, these calculations do not factor in the intermittent performance of renewables nor the extra costs for transmission and dispatch. It is quite likely that high carbon taxes would reduce US CO<sub>2</sub> emissions primarily by inducing an economic recession rather than by encouraging the substitution of renewables for fossil fuels.

### **Carbon Tax Receipts and Rebates**

In fairness to Senator Whitehouse, his bill provides for the rebate of some of the carbon taxes to the population. Once again, however, it's important to run the numbers. Four groups get relief under Senator Whitehouse's plan:

First, the 124 million Americans who pay FICA taxes to fund Social Security would each get a \$500 rebate for a total of \$62 billion.

Second, veterans (22 million) and those on federal disability (9 million) would also receive \$500 each for a total of \$15.5 billion.

Third, the top corporate income tax rate would be reduced from 35% to 29%. This calculation is a bit more difficult, since different companies are subject to different tax rates. Current corporate income tax receipts are about \$320 billion, so the maximum reduction possible would be 6% of that amount or about \$19 billion.

Finally, the bill allocates a maximum of \$20 billion from the carbon tax revenue to be given to the states as grants to use for a variety of purposes.

The total refunds would thus be about \$116.5 billion. At the initial tax rate of \$42/mt, however, the total carbon tax receipts would be \$231 billion, leaving \$114.5 billion for the Treasury. In other words, Senator Whitehouse's bill would refund about half the tax receipts.

Many of the US corporations, including some oil companies, who have supported carbon taxes in principle have insisted that the tax be “revenue neutral”. In other words, the government should refund through some mechanism the full value of the tax. Senator Whitehouse’s bill doesn’t meet that test, and that shouldn’t come as any surprise. Politicians often phrase tax proposals in terms of social engineering but their primary purpose is generally to bring more money into federal coffers to be allocated by politicians (of both parties) to favored constituents.

Cigarette taxes, including the massive court settlements from tobacco companies, have been set to maximize the revenue available to the federal government and to the states and not to discourage people from smoking. That laudable goal could be easily achieved by banning cigarettes. Most states, however, would face a serious budget crisis if smokers suddenly quit. We ought to expect the same dynamic from carbon taxes.

### **Carbon Taxes and “Certainty”**

One final argument for carbon taxes is that they would provide individuals and businesses with “certainty”. This argument has been used for many years to justify tax increases, and it fails on two grounds. First, people and businesses rarely if ever prefer a tax increase to *worrying* about a tax increase. When businesses ask for tax certainty, they are asking for assurances that their taxes will not increase. Second, raising taxes is never the end of the process. Every tax increase in US history has been immediately followed by demands from some quarters for yet more tax increases. Certainty is an unachievable goal.

Ronald Reagan accomplished, at least for a little while, a “grand bargain” on personal income taxes, eliminating many personal deductions in return for a much-reduced maximum tax rate of 28%. Thirty years later the deductions are still gone, but the maximum personal tax rate is up to 39.6%, and many politicians are clamoring for more. George H. W. Bush, despite his 1988 campaign pledge of “no new taxes”, agreed to another “grand bargain” in 1990 which raised tax rates and possibly cost him the 1992 election.

Passage of a carbon tax would be the start, not the conclusion of a process. It would give the federal government yet another tax lever to pull when politicians want more money. “Experts” at the EPA could quickly discover that \$42/mt or the agreed escalation rate was insufficient to meet the emergency need to save the climate and then recommend ever higher rates. The result would be the continued shifting of critical capital from the private sector to the government without any measurable impact on atmospheric carbon dioxide

levels. As the prospects for catastrophic climate change continues to evaporate, this tax, like others before it, would remain in place as a source of government revenue.

### **Conclusion**

Passage of a high carbon tax, such as the one proposed by Senator Whitehouse, would be difficult to pass, given the clear economic damage it would likely inflict on an already weak economy. There is a real danger, however, of a much smaller carbon tax which could be the “nose of the camel”. The Regional Greenhouse Gas Initiative (RGGI) of northeastern states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) has established a carbon price of about \$4.50/mt, equivalent to less than 5¢ per gallon on gasoline. This price is too low to have any measurable effect on carbon dioxide emissions, but it has brought in \$2.5 billion to these states. The RGGI system is a pure tax with no environmental benefit. The EU also has a carbon trading system with a similar recent price of \$4.75/mt (€4.22).

Carbon taxes are an awful idea, but don't take our word for it. Just run the numbers for yourself.

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