ENERGY & ENVIRONMENT

The Perils of a Carbon Tax

High-minded proposals for a "revenue neutral" Pigouvian tax could result in bigger government, but they could also make it smaller.

BY MICHAEL L. MARLOW

The debate over climate change and the need for government intervention to combat it is often portrayed in "left–right" terms, with the political left claiming that urgent action is required and the right dismissing both climate change's existence and the need for intervention. However, a 2017 poll by the University of Chicago' Energy Policy Institute and the Associated Press–NORC Center for Public Affairs Research found that 60% of Americans, including 43% of Republicans, say that government should address climate change.

Accordingly, some right-leaning groups have suggested climate change policies featuring a Pigouvian tax on carbon emissions. (Such a tax could be extended to other greenhouse gases, but for simplicity this article will refer to a "carbon tax.") True to the right's "limited government" philosophy, many of these proposals would use the tax's resulting revenue to reduce other taxes that are more economically distortionary, resulting in a "revenue neutral" outcome. Some of these proposals would include the rollback of some costly environmental regulations. Another proposal, by the Climate Leadership Council, would use the carbon tax revenue to fund a universal "dividend" program for U.S. citizens.

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These ideas are intriguing theoretically, but implementing them would expose them to the machinations of politics. Left-leaning groups, for instance, would likely oppose revenue neutrality and a tradeoff of deregulation, preferring instead to pursue other policy goals. Politicians, who would adopt such legislation, would have their own priorities. The result would likely be something very different from what right-leaning, limited government groups envision.

This article develops a harm-reduction strategy for such policy proposals. This would steer the debate toward what tradeoffs would be acceptable in order to mitigate harm from climate change.

WILL CARBON TAXES CORRECT EXTERNALITIES?

Carbon pollution is a negative externality because it imposes external costs on people who did not create the pollution. The social cost of carbon (SCC) refers to the cost of an additional ton of carbon dioxide pollution. Pricing the correct SCC through a "Pigouvian tax, named after British economist Arthur C. Pigou (1877–1959), internalizes the negative externality so that all costs are accounted for in market prices. Most taxes push resources away from efficient outcomes, but "correct" Pigouvian taxes push resources toward efficient market outcomes. Most economists believe taxes are superior to regulation in efficiently dealing with externalities.

In contrast, regulation offers very blunt methods that "command and control" all businesses identically. One-size-fits-all mandates ignore individual characteristics of firms and are inefficient, as some firms reduce emissions by reducing output. Because these regulations dictate what methods should be used to reduce emissions or what emissions levels are acceptable, firms lose incentive to find innovative emissions-reducing alternatives.

Critics are correct that a theoretical basis for carbon taxes does not necessarily imply that their implementation corrects externalities. The EPA offers a range of SCC estimates from $14 to $138 per metric ton; that wide range indicates considerable uncertainty on the part of policymakers. Garnering support for "correct" carbon taxes would be difficult because the benefits are uncertain, they may take decades to emerge, and mitigation of climate change is a global public good with many free riders. Even if government knew the "correct" Pigouvian tax, political decisions are rarely based on efficiency grounds alone, as demonstrated in a 2012 paper on emissions pricing by Tom Tieteberg. Still, he found that the predominant effect has been to reduce emissions.

Transforming economic theory into practice is clearly imperfect. But it is also naive to believe that perfection is on offer. Regulatory policies exhibit a wide divide between theory and practice, making comparisons of a politically chosen carbon tax to its textbook rendition something of a misplaced debate. Taxation may also be easier to understand, monitor, alter, and is less subject to "crony capitalism" than regulation.

DO TAX SWAPS INCREASE WELFARE?

There is a long economic literature indicating that economic growth is inversely related to government size. (See, e.g., Robert Barro's 1990 *Journal of Political Economy* article.) This inverse relationship is consistent with distortions to resource allocations stemming from over-regulation and excessive taxation that reinforce commitment to constrained government.

Tax swaps focus on substituting taxes with high excess burdens (deadweight loss or welfare cost) for ones with lower burdens. Excess burdens are additional costs that arise when tax policies (beyond simple tax collections) cause resources to be allocated inefficiently. Taxes raise prices and decrease consumption away from efficient allocations. Unlike "correct" Pigouvian taxes that push markets toward efficient outcomes, most taxes push markets in the other direction as government pursues revenues to fund its programs.

MICHAEL L. MARLOW is professor of economics at California Polytechnic State University in San Luis Obispo. This article is based on his white paper "A Carbon Tax That Constrains Government," produced for the Alliance for Market Solutions.

Recent studies estimate that substituting carbon taxes for other tax sources yields significant reductions in excess burdens. A 2015 paper by Donald Marron, Eric Toder, and Lydia Austin summarizes the evidence from separate modeling exercises in five recent academic papers. Estimates differ because of different methodologies, data sets, and time periods, but the studies found that reducing tax rates on capital income was the best choice for reducing the excess burden of our tax system. This result is consistent with standard predictions that lowering taxes on capital income, either through tax rate reductions on all investment or specifically to the corporation tax, raises savings that eventually raise worker productivity and wages as businesses fund more capital investment. Corporation taxes are thus a very expensive method of funding government, resulting in the economy producing fewer jobs, higher prices, and less income for citizens. In fact, a 2007 U.S. Treasury paper estimated that 73% of the corporation tax is borne by workers.

This view that carbon taxation yields environmental benefits and a greater tax efficiency is often described as a "double dividend" argument for carbon taxation. However, the soundness of this argument is at best uncertain because taxing carbon is, in effect, taxing factors of production such as labor that push resources further away from efficient allocations. A 2010 review article by Joseph Aldy et al. concludes that most analytical and numerical analyses of environmental tax shifts find that the tax-interaction effect exceeds the revenue-recycling effect, implying no double dividend, and that abatement costs are higher because of the presence of preexisting tax distortions. The tax efficiency gains from revenue-neutral tax substitution are thus uncertain at best, but likely non-existent.

Theoretically, substituting a carbon tax for other taxes could be an efficiency gain. But taxing carbon in effect taxes factors of production such as labor, pushing resources further away from efficient allocation.

Reducing tax expenditures that include tax credits on wind and solar energy and other favored treatments given to "green" industries is another path to reducing excess burden. Tax expenditures are policies that lower, eliminate, or defer tax bills for various activities through reduced tax rates or narrowing of the tax base. Energy-related tax expenditures accounted for 42% (about $12.4 billion) of all financial interventions and subsidies in energy markets in 2013, according to the Energy Information Administration. The three largest tax expenditures represent roughly 90% of nearly $5 billion in annual tax reductions and are unrelated to correcting negative externalities or promoting new technology. Most tax expenditures reflect political favors toward certain industries and clearly enhance employment opportunities for lobbyists and tax accountants. Revenue-neutral carbon taxes coupled with fewer tax expenditures make it harder to "hide" these political favors associated with environmental regulation and complex personal and corporate tax codes.

In sum, while tax reform that reduces overall excess burden raises welfare, it is unlikely that carbon taxation offers a significant double dividend.

WILL A CARBON TAX TRULY BE REVENUE-NEUTRAL?

The U.S. Treasury estimated that a carbon tax that started at $49 per metric ton of carbon dioxide equivalent in 2019 and gradually increased until it reached $70 in 2028 would generate net revenues of $194 billion in the first year of the tax and $2.2 trillion over the 10-year period. Some policymakers can't wait to get their hands on those revenues. Washington Gov. Jay Inslee, for instance, recently admitted that his support for a state carbon tax was partially based on raising $2.1 billion over two years to help fund the state budget.

The budget constraint view predicts government spending rises whenever taxes are increased, the "tax–spend hypothesis" often associated with Milton Friedman. He succinctly stated this view as "Governments spend what governments receive plus whatever they can get away with." There always exists a government program someone wishes to expand or create.

A reasonable assessment of the empirical evidence is that a carbon tax exerts an ambiguous effect on government spending if doubts remain over the viability of the revenue-neutral promise. Major uncertainty would exist if politicians were not legally constrained to act in one way or another when carbon taxes are added to the list of tax sources. That is especially true given the view that constraining government expansion is much easier through tax reduction than through tax increases.

Convincing voters that carbon tax revenues should not be used to fund more government would be challenging. Spending proponents are likely encouraged by various surveys of voter attitudes on this issue. A survey of Swiss adults found that a carbon tax could find substantial support on a ballot, but it may not reach the majority without explicit earmarking for environmental spending or climate change spending. Another survey finds that Americans oppose a carbon tax when the resulting revenue's use is left unspecified, but 60%—including majorities of Democrats, Republicans, and independents—were in support when the money was used to fund research and development for renewable energy programs. A more recent survey of Americans found that most respondents supported using the money to fund clean energy and

infrastructure. The highest support was associated with using tax revenues to fund clean energy (80%) and infrastructure (77%), with less support for reducing income taxes (59%), returning dividends to households (46%), and reducing payroll taxes (44%).

Experience with countries introducing value-added taxes (VAT) fails to mitigate concerns that carbon taxes will fuel government spending. Several studies find that the adoption of a VAT significantly increased the size of government as measured by the tax-to-GDP ratio, suggesting that the VAT is a "money machine." (See, e.g., David Nellor's 1987 International Monetary Fund paper.)

Experience with the Tax Reform Act of 1986 that flattened income tax rates in exchange for the removal of numerous tax expenditures within an agreement of tax neutrality suggests the need for extreme caution. After the legislation passed, politicians quickly began raising rates again, creating more tax brackets, and introducing new tax expenditures, in what has been described as the resetting of a rent-seeking clock that seeks to maximize government revenue. Concerns remain that a similar fate awaits a carbon tax "swap" because politicians would be encouraged to raise government spending given voter support for earmarking carbon revenues for new government programs. Politicians would surely understand that hiking tax rates on those sources whose rates were reduced in the tax swap, as well as on carbon, would deliver more revenue for expanding government.

WILL CARBON TAXATION BE TRADED FOR ENVIRONMENTAL DEREGULATION?

Some right-leaning proponents of a carbon tax propose implementing it in exchange for reduction or elimination of tax incentives for clean energy and such regulations as the U.S. Environmental Protection Agency's Corporate Average Fuel Economy rules and Clean Power Plan. Despite the theoretical merits of such a tradeoff, it would likely not receive much political support.

Citizens may suffer from a cognitive bias, known as opportunity cost neglect, that makes them more receptive to regulation than corrective taxation because they ignore or are unaware of the hidden costs of regulation. Unlike taxation, the opportunity costs of regulation are implicit and thus regulations may be viewed as something of a "free lunch" to achieve policy goals. Still, a recent Gallup poll found that more Americans believe there currently is either "too much" (45%) regulation or "the right amount" (29%), versus "too little" (23%). Yet while somewhat supportive of deregulation in general, citizens appear unenthusiastic about environmental deregulation; another Gallup poll found that about two-thirds of Americans favor increased enforcement of environmental regulations and setting higher emissions standards for business and energy.

A large bureaucracy and special interests supporting environmental regulation would be formidable foes of deregulation. Some firms also prefer regulation over taxation because it is easier for them to "capture" regulators than tax authorities and because they want to use regulation to erect entry barriers on potential competitors.

Given those obstacles, deregulation in return for carbon taxes is a tall order. One encouraging sign is President Trump's Executive Order 13771, which directs agencies to eliminate two rules for each new rule and prohibited an increase in net regulatory costs for fiscal years 2017 and 2018. While the Trump administration has yet to fully meet this pledge, it has slowed the growth of regulations to the slowest pace of the previous six administrations during its first year in office. (See "Deregulation through No Regulation?" Fall 2017.) Of course, this progress did not hinge on carbon taxation and can also be undermined in the future by new administrations.

REVENUE NEUTRALITY OR CARBON TAX DIVIDENDS?

The CLC proposal that would disburse carbon tax revenues directly to citizens is the best solution for winning popular and political support for carbon taxes. The CLC believes this would tip the economic scales toward the interests of the "little guy" at the expense of the wealthy who typically will pay more. The CLC also believes that the dividends program serves to protect carbon tax revenues from funding more government. A tax of $40 per ton is estimated to generate $2,000 in the first year for a family of four and rebates would rise with tax rates.

But there are reasons to be skeptical of this idea:

- The dividend program strips the revenue neutrality requirement out of the carbon tax policy. That negates one of the best reasons to support a carbon tax: swapping out taxes with high excess burdens, such as taxes on capital and income.
- The dividend program creates an incentive for voters to push for carbon tax hikes in order to increase their rebate checks. This incentive is not aligned with finding the "correct" Pigouvian tax rate; instead it risks promoting excessive tax rates that result in inefficient market outcomes.
- The dividend program enlarges the size of government. It is essentially a new government program that taxes those who use more fossil fuels to fund a spending program that sends government checks to citizens.
- The dividend program may appear to be "free" to voters, thus ramping up their demands for new sources of tax revenue that will further expand government. Voters may also be more inclined to tax capital, which has a very high excess burden and lowers welfare. These tax rebate promises quickly become entitlements, expand, and are nearly impossible to unwind. Unfortunately, the tax dividend policy appeals to policymakers seeking to expand the pool of tax dollars that government collects.

In sum, the dividend program overturns the many benefits to citizens from tax reform, is likely to foster carbon tax rates above optimal externality corrections, and encourages citizens to believe (incorrectly) they bear little to no cost themselves for checks from the U.S. government.

IS CARBON TAXATION REGRESSIVE?

The incidence of a carbon tax on the poor appears to be a simple matter when viewed as a stand-alone policy without substitution for other taxes and deregulation. Lower-income citizens spend a greater share of their income on energy than higher-income families and thus shoulder larger burdens than higher-income families. Jobs, especially in energy sectors, may also be adversely affected by a carbon tax, hurting the poor. These concerns are exacerbated when carbon taxes are simply added onto the existing structure of regulation and the corporate tax code.

Right-leaning carbon tax proposals that are intended to be revenue neutral must take care that lower-income households are not adversely affected by the tax swap. Reductions in personal and corporate income taxes, as well as payroll taxes, will lessen burdens, so they must be compared to burdens on the poor that follow from taxing carbon. These proposals deal with tax regressivity in various ways. Supporters propose to rebate some portion of carbon tax revenues to poor households or simply focus on tax neutrality that swaps carbon taxes for other taxes that reduce job opportunities and income for all citizens. As discussed, the CLC proposes equal tax dividends to all citizens as a way of providing larger payments to lower-income households.

Of course, there are always unknowns in the political process. Regulation has also been shown to promote higher consumer prices that exert disproportionately negative effects on low-income households. Thus, the effects of deregulation should be considered in the greater picture of whether carbon taxes are regressive. A carbon tax is likely to be regressive in the absence of tax neutrality or deregulation.

CARBON TAX HARM REDUCTION

Various disagreements among those on the political right focus on the difference between the theory and expected application of carbon taxes. Wide agreement exists that, in theory, Pigouvian taxation is preferable to regulation, tax reform should lower excess burden, carbon taxation should not expand government, and the poor should not shoulder undue carbon tax burdens. Valid differences exist on how well the theory will be transformed into carbon tax laws.

Allaying concerns that carbon taxation will simply expand government without deregulation requires a clear commitment to a constrained government. Obstructing this are policy advocates who singularly focus on a narrow range of issues such as poverty, obesity, and education. It is not surprising that policy advocates are more interested in their particular issue areas than in exploring how to constrain government growth.

Advocates can safely prescribe new extensions that promote their narrow policy focus when they believe they do not compete for resources with other advocates. Government programs are rarely eliminated or improved under this scenario because proposals receive little scrutiny. This situation is ripe for logrolling, whereby politicians support programs that do not directly benefit their constituents in return for support for their favored programs. Trading partners have little reason to view each other as competitors for taxpayer funds. This is a recipe for government growth that goes well beyond allocating scarce public resources to their highest-value uses.

Climate change appears to fit this profile. Why would policy advocates be interested in trading their preferred policy—carbon taxation, for an existing policy (e.g., corporate taxation, payroll taxation—environmental regulation) when gaining their policy does not require reduction of those other programs? Steering debate toward improving overall government efficiency lies in insisting that carbon taxation proceed with a commitment to constrained government. This bargain requires economic sacrifices from carbon tax advocates seeking to mitigate harm from climate change. This carbon tax deal jeopardizes the political order that seeks government expansion funded by a "free lunch" to themselves. The political status quo typically fears dismantling of the regulatory state and is committed to expanding tax revenues to fund policymakers' particular interests. Carbon taxation, in effect, represents a "destructive technology" to the status quo when revenue neutrality and deregulation are non-negotiable.

Carbon taxation coupled with revenue neutrality and deregulation represent a potential opportunity to capitalize on a high-profile public issue to promote a more efficient government. It is safe to say that right-leaning groups exhibiting the spectrum of views on climate change believe that current regulatory and tax policies are suboptimal. Using a carbon tax as leverage to deregulate and reform our tax code is worth exploring when climate change policies are likely to happen anyway. Trades are a necessary part of the policy process and refusing to negotiate with an opposition that prefers expanding government makes deregulation and tax reform less likely. Refusing to negotiate and pursuing tax reform and deregulation on their own merits is sensible when facing weak opposition. But fierce opposition to tax reform and deregulation is more likely and reason to design an effective harm reduction strategy for carbon tax legislation.

The non-negotiable nature of tax neutrality and deregulation also "tests" the convictions of carbon tax advocates. Proponents unwilling to accept these commitments are probably more interested in growing tax revenue and the regulatory state than decreasing greenhouse gas emissions. These commitments provide a "quid pro quo" whereby trading out "bad" policy (e.g., inefficient regulation, high excess-burden taxes) for "good" makes government more efficient.

Bunching the benefits from deregulation and tax reform in one package compensates the public for introducing a carbon tax. Climate change policy advocates may consider this a "win–win" deal because it produces a better economy with less carbon when they believe a double dividend exists. Climate change skeptics are more likely to view it as a "win–loss" that can evolve into a net gain.

Revenue neutrality corrals traders into understanding that carbon tax revenues cannot fund new government programs without spending less on current programs. This constraint ideally

unleashes greater scrutiny of all government programs as policy advocates realize that increased funding of their programs necessitates "raiding" funds from other programs. This constraint raises incentives for policy advocates to search for misused public funds as a funding source for their own programs. Revenue neutrality, of course, will not make government hyper-efficient, but it will provide a fixed pool of funds for policy advocates to draw from.

CONCLUSION

Economists always look for perfection. They can devise the perfect tax in theory, but it doesn't work the same way in the real world. This explains much of the divide on the political right over the carbon tax issue. Carbon tax proponents focus on the gains from a deal that closely follows the script of economic theory and commitment to limited government. Carbon tax opponents are climate change skeptics who remain unconvinced that tax neutrality, deregulation, and double dividends will come to fruition. Both sides make valid points.

This article presents the carbon tax within a harm reduction strategy in a world in which both climate change believers and skeptics face growing pressure to enact climate change policies. The non-negotiable nature of tax neutrality and deregulation is critical because, otherwise, carbon taxation will likely lead to a larger and more inefficient government. Much is at stake here and avoiding missteps is a tall order in the real world of how government usually works.

The growing focus on climate change offers a chance at steering government toward greater efficiency by forcing policy advocates to better acknowledge that government has an innate ability to over-regulate and waste money. Limiting the pool of funds via tax neutrality and deregulating redundant environmental regulations force greater scrutiny over what government does and will be met with great resistance by the political status quo. Resistance is inevitable, but also signals that opponents understand that such a carbon tax constrains government.

The expected escalation of government debt will undoubtedly have policymakers attempting to siphon off carbon tax revenues. The Congressional Budget Office projects that federal deficits will average $1.2 trillion per year and total $12.4 trillion over the 2019–2028 period. As a percentage of GDP, the deficit is projected to increase from 3.5% in 2017 to 5.4% in 2022 and then fluctuate between 4.6% and 5.2% from 2023 through 2028. Much of the spending growth reflects increases for Social Security, Medicare, and interest on the government's debt. Politicians, interest groups, and many voters can be expected to seek additional tax revenues (or additional debt) rather than cut spending to fund this widening budgetary gap. Raising carbon tax revenues or creating new tax sources will be a solution favored by those believing government under-taxes rather than over-spends.

The next step is to develop the specifics of an ironclad plan for trading carbon taxation for tax neutrality and deregulation. Important decisions remain on the proper tax swap and deregulation that ultimately will be influenced by the bargaining abilities and strength of traders. Another critical component is to develop a credible means of tying the hands of future policymakers from overturning the terms of the deal. Climate change skeptics are correct to emphasize concerns that carbon taxation will lead to a larger and more inefficient government. Skeptics underscore the importance of designing a trade that meets the non-negotiable nature of tax neutrality and deregulation. Carbon tax proponents who truly believe it is essential for mitigating the effects of climate change should be willing to negotiate along these terms. *R*

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