

ISSUE BRIEF

Carbon Emissions: Tax and spend? Or tax and end?

Summer 2018

It has been nearly a half century since terms like “global warming”, “climate change”, “glacial retreat”, and “rising sea levels” were introduced to the lexicon, but it took decades more to get broad acceptance of what these words may portend. It was clear to some scientists as early as 1981, however, that the worst case scenarios of climate change would present massive, thorny challenges to the capital markets and the environment.

From the 1981 BBC documentary *Warming Warning*¹:

“To apply the brake now, to introduce policies and avert the possibility of a crisis ahead, demands a vision across decades among politicians who rarely hold office for more than a few years. Economic imperatives, political realities and the very way our society is organised dictate that the power continue to flow. But now we know what this implies...”

The documentary is now thought to be the first distant warning of the political, market, and environmental sagas playing out today. The film predates what has long been considered the first official climate change warning given by NASA scientist James Hansen in his 1988 testimony to Congress. Since the scientists in “Warming Warning” predicted the hurdles to overcome climate change in 1981, over one trillion metric tons of CO₂ have entered the atmosphere.² Almost 40 years later, the concurrent pursuit of a solution and struggle to maintain the status quo continues. One such solution that has gained some traction is the idea of a carbon tax.

What is a carbon tax?

A carbon tax is a form of explicit carbon pricing directly linked to the level of carbon dioxide emissions.³ The fundamental principle of a carbon tax is to shift the environmental costs associated with carbon to the emitters. In theory, this will incentivize alternative energy production and slow the emission of CO₂ into the atmosphere. To some, it would also create a fairer accounting of the “true costs” of the burning of carbon.

These costs are often referred to as “negative externalities” in economic terms. Proponents of the carbon tax say the price of carbon should reflect the real costs associated with burning carbon – which includes the cost of environmental damage. One of the theoretical benefits would be that revenue generated through the carbon tax could be used to lower other taxes (like personal income tax or gasoline tax). In theory, a carbon tax could have the potential to bring environmental benefits while being revenue neutral.

Below are a few of the arguments for and against a carbon tax:

PROS	CONS
Reduces emissions in efforts to slow climate change	Firms may choose to produce outside of the U.S. to avoid the tax
Straightforward process of measuring emissions	Accurately valuing and pricing carbon is not straightforward
Internalizes the costs associated with high levels of CO ₂ production	Has costs associated with measuring pollution (administrative costs)
Encourages research and development of alternative and renewable energy sources	Raises energy prices (which will hurt the lowest income households the most)
Potentially creates revenues for government that can be “shifted” from other taxes like income. Revenue Neutral concept	Governments do not often shift taxes to eliminate others once they are in place or spend revenues wisely
Benefits to health from reducing emissions of air pollutants	May discourage economic growth (by negatively affecting international trade)

ISSUE BRIEF

Carbon Emissions: Tax and spend? Or tax and end?

Summer 2018

How effective have carbon taxes been?

There are roughly 65 jurisdictions around the world that currently have a carbon tax or have scheduled implementation of a tax, including Chile, British Columbia, Costa Rica, South Africa, and Japan.⁴ The jurisdictions represent 15% of global greenhouse gas emissions. Finland was the first country to enact a carbon tax in 1990, followed by Sweden and Norway the following year. The rate of the tax ranges from less than \$1 per ton of carbon dioxide (\$1/t CO₂) to \$139/t CO₂.³

The overall effectiveness of carbon taxes is not conclusive due to limited data and difficulties of attributing impact to the carbon tax when used in conjunction with other policies. However, available data shows that when carbon is adequately priced it can successfully reduce emissions, without impeding economic growth. Many researchers have looked to the case study of British Columbia (B.C.), which implemented a carbon tax on fuel use in 2008 and is generally considered a success. According to the B.C. government, “between 2007 and 2015, provincial real GDP grew more than 17%, while net emissions declined by 4.7%”.⁴

Simulated studies have also suggested that in theory, a carbon tax would have a positive benefit. In 2014, the Citizens’ Climate Lobby commissioned a study to model a neutral carbon tax in nine U.S. jurisdictions by Regional Economic Model, Inc. (REMI.). The carbon tax would start at \$10 per metric ton and increase in a linear fashion by \$10 annually over 10 years. REMI’s study concluded that over a ten year period a proposed revenue neutral carbon tax model would create 2.1 million more jobs than the baseline, reduce carbon emissions 33% more than the baseline, and save 13,000 premature deaths by improvement in air quality.⁵

In practice, however, implementing and maintaining revenue neutral carbon taxes has proved challenging. Even with the relative success of the tax in B.C., the government’s stated goal of returning every cent collected back in the form of tax reductions elsewhere

has proved difficult to maintain. The B.C. government did in fact return more revenues with rebates or credits than was collected in the first three years the tax was implemented, but they do not do so today.⁶ Tax policy is often amended by legislators, and it is no longer a legal requirement of the B.C. carbon tax to be revenue neutral. The B.C. experience underscores the prescient quote from “Warming Warning” in 1981 that policies to lower carbon emissions “.....demands a vision across decades among politicians who rarely hold office for more than a few years.”

Recent efforts in the U.S.

On July 23, 2018, a bill was proposed aiming to accelerate the fight against climate change. Representative Carlos Curbelo (R-FL) introduced the “Market Choice Act”, which seeks to implement a carbon tax billed to the emitters (coal mines, gas processing plants, refineries) and related industries, while eliminating the current federal gasoline tax. Curbelo’s carbon-pricing legislation follows the revenue neutral model favored by the bi-partisan Climate Solutions Caucus. There are 43 Republicans and 43 Democrats in the caucus. The caucus endorses a model where all tax revenues enter a “fee and dividend” model to be returned to taxpayers.⁷ The “Market Choice Act” proposes to impose a tax of \$24 per metric ton of CO₂ that would begin in 2020 and increase annually at a rate of 2% plus inflation.⁸ About 70% of the proceeds would go towards infrastructure spending via the Highway Trust Fund, and the remaining monies would be distributed amongst sources such as grants to help low-income households most affected by the tax. Modeling projects the tax would result in an estimated 30% reduction in emissions by 2032.⁸ If passed, this legislation on its own will not be enough to meet global long-term climate goals. Effective climate policy, however, does have the potential to help “apply the brake” even after rolling through the stop sign.

ISSUE BRIEF

Carbon Emissions: Tax and spend? Or tax and end?

Summer 2018

*SOURCES

[1] *Warming Warning*. Thames Television, 1981.

[2] <https://www.carbonbrief.org/warming-warning-1981-tv-documentary-warned-climate-change>

[3] https://www.worldbank.org/content/dam/Worldbank/document/SDN/background-note_carbon-tax.pdf

[4] <https://www2.gov.bc.ca/gov/content/environment/climate-change/planning-and-action/carbon-tax?keyword=carbon&keyword=tax>

[5] <https://11bup83sxdss1xze1i3lp04-wpengine.netdna-ssl.com/wp-content/uploads/2018/05/The-Economic-Climate-Fiscal-Power-and-Demographic-Impact-of-a-National-Fee-and-Dividend-Carbon-Tax-5.25.18.pdf>

[6] <https://www.theglobeandmail.com/report-on-business/rob-commentary/bcs-carbon-tax-revenue-neutrality-couldnt-survive-exposure-to-politics/article36488526/>

[7] <https://citizensclimatelobby.org/remi-report/>

[8] https://curbelo.house.gov/uploadedfiles/mkt_choice_act_key_elements.pdf

DISCLOSURES

This Issue Brief was produced by Bailard's Social, Responsible and Impact Investing Service ("SRII") for informational purposes only and is not a recommendation of, or a solicitation of an offer to buy any particular security, strategy or investment product. It does not take into account the particular investment objectives, financial situations or needs of individual clients or investors. All investments have the risk of loss. There is no guarantee any investment strategy will achieve its objectives. The application of various environmental, social and governance ("ESG") screens may result in the exclusion of securities that might otherwise merit investment, potentially adversely affecting performance. This communication contains the current opinions of its author and such opinions are subject to change without notice. Information contained herein has been obtained from sources believed to be reliable but is not guaranteed. Bailard will not offer investment advice in any jurisdiction where it is prohibited from doing so. *The sources contain information that has been created, published, maintained or otherwise posted by institutions or organizations independent of Bailard, Inc., which does not approve or control these websites and which does not assume responsibility for the accuracy, completeness, or timeliness of the information located there. Visitors to these websites should not use or rely on the information contained therein until consulting with an independent finance professional. Bailard, Inc. does not necessarily endorse or recommend any commercial product or service described at these websites.