



Poor Implementation Undermines Carbon Tax Efficiency in Canada

by Kenneth P. Green

SUMMARY

- Provinces across Canada have implemented some form of carbon pricing, either through carbon taxes or emission-trading schemes.
- These taxes are touted as being the most “efficient” way to control greenhouse gas emissions, yet be economically benign.
- But in the real world, Canada’s carbon taxes fall far short of the textbook ideal that would justify claims of efficiency. They fail on three key requirements.
 - First, to be efficient, carbon taxes must displace regulations, not be added to them. Second, the taxes must be fully rebated in reducing distortionary taxes such as income taxes, and third, the revenues from the tax should not be used to further distort energy markets with subsidies to substitute forms of energy.
 - Canada’s experience with carbon taxes shows that governments have little interest in ideal implementation. Instead, rather than simply addressing greenhouse gas emissions efficiently, they prefer to create revenue streams for pet projects and retain the ability to transfer wealth.

Poor Implementation Undermines Carbon Tax Efficiency

Introduction

Early in 2016, Canada signed on to the Paris climate agreement, joining 129 other countries in taking actions to reduce greenhouse gas emissions in support of the goal of limiting climate change to 1.5° – 2°C. To that end, Prime Minister Trudeau adopted the greenhouse gas reduction targets of the previous Conservative government (Mas and Cullen, 2016, Apr. 24; UN-FCCC, 2016). The Canadian goal is to reduce Canadian greenhouse gas emissions by 30% from 2005 levels by 2030. Subsequently, several Canadian provinces, and the federal government, announced specific emission reduction policies. The Alberta government rolled out its Climate Leadership Plan, which expands Alberta's carbon tax to the broader Alberta economy and institutes a range of emission reduction programs including a 100 Megatonne annual cap on greenhouse gas emissions from the oil sands (Alberta, n.d). Ontario released its own Climate Change Action Plan along with a cap-and-trade emission control regime aiming for an 80% reduction in greenhouse gas emissions (from 1990 levels) by 2050 (Ontario, 2016). In August of 2016, British Columbia, which already has a carbon tax, released its own aggressive Climate Leadership Plan, calling for an 80% reduction from its 2007 emission levels by 2050 (British Columbia, 2016). Finally, in October of 2016, the Trudeau government announced that it will institute a pan-Canadian “price floor” for greenhouse gas emissions, to be imposed upon provincial governments that do not already have a program in place deemed equivalent with the federal floor price (Campion-Smith, 2016, Oct. 3). That price floor will start in 2018 at \$10 per tonne of greenhouse gas emitted, rising to \$50 per tonne by 2022. All of these actions are poised to increase the costs of energy, a fundamental input to everything we do, manufacture, build, consume, and export in Canada.

Groups like Canada's Ecofiscal Commission and prominent journalists such as Andrew Coyne applaud the pricing aspects of these programs, and routinely cite the idea that carbon taxes are the most efficient way to reduce greenhouse gas emissions (Ecofiscal Commission, 2015; Coyne, 2017, Mar. 16).

Indeed, economists tend to agree that the most efficient way to manage emissions is by placing a price on them, specifically a price based on the marginal societal damages of emitting another tonne of greenhouse gases (McKittrick, 2016). This concept is referred to as the Social Cost of Carbon (SCC). Its use was mandated in the United States by the previous Obama administration, but has since been repealed by the Trump administration (United States, White House, 2017). By placing a price on carbon dioxide emissions, emitting firms have an incentive to adopt abatement technologies or changes to their production processes whenever doing so costs less than paying the emissions charge. By this means, the private sector is guided to identify the lowest-cost emission reduction strategies. In other words, the introduction of a price on carbon creates a market-based incentive for firms (and individuals) to respond to the social costs of emissions in an economically-efficient way. In an ideal world, a carbon tax can reduce emissions and even yield efficiencies that improve the overall economy as well (Jorgenson et al., 2013).

How carbon taxes should be implemented

The problem is that carbon taxes in the real world are implemented through a political system that deviates substantially from the academic ideal. Critically, governments fall short on implementing several key assumptions necessary for this approach to be efficient.

Poor Implementation Undermines Carbon Tax Efficiency

As economist Ross McKittrick (2016) points out in *A Practical Guide to the Economics of Carbon Pricing*, the introduction of a carbon price must replace, not be in addition to existing regulations. We can find no examples of governments that are willing to exchange regulatory structures for pricing of greenhouse gas emissions. Instead, governments in Canada have layered carbon taxes on top of an extensive array of regulations intended to reduce greenhouse gas emissions, regulations ranging from vehicle fuel economy standards, to building efficiency standards, to light-bulb restrictions, to appliance efficiency standards, to name only a few. As McKittrick observes, “If pricing is layered on top of an emission-regulating regime already in place (such as emission caps or feed-in-tariff programs), it will not only fail to produce the desired effects in terms of emission rationing, it will have distortionary effects that cause disproportionate damage in the economy” (McKittrick, 2016: i).

Second, as McKittrick also observes, revenues from carbon pricing (ie., tax) must be used in their totality to reduce other distortionary taxes like marginal personal or business income taxes. This is critical because only when the revenues from carbon pricing are used to reduce other more damaging taxes can there be a net improvement in overall economic performance.

Third, and related to the second assumption McKittrick observes, the revenues from the carbon tax should not be used to subsidize substitutes for carbon emitting activities since the whole point of introducing the price on carbon is to allow the market to determine the optimal substitutes. More specifically, the revenues from carbon pricing should not be used to subsidize wind, solar, or other alternative energies. Doing so destroys the basic efficiency properties of the tax by over-riding the choices made

in the market in response to the emission price. The logic of carbon pricing requires that markets be allowed to decide where to allocate resources among the variety of energy sources and emission abatement strategies available in a given jurisdiction.

But developments in Canada strongly suggest that we will not (and indeed have not) seen Canadian jurisdictions meet any of those critical tests of economically benign carbon pricing. Instead of instituting “textbook” carbon pricing, governments are implementing pricing regimes that are not revenue neutral, do not displace existing regulations, and do not identify the least-cost abatement strategies. Indeed, even as politicians cite economists who support carbon pricing to defend their initiatives, they have implemented pricing systems that violate essential economic principles.

How carbon taxes are really implemented in Canada

Ontario

Consider Ontario’s cap-and-trade system instituted by Kathleen Wynne, which the government estimated would bring in \$2 billion in revenue per year (Ontario, Office of the Premier, 2017). According to the Ontario Auditor General, out of the \$8 billion to be collected in the first four years of implementation, only \$1.32 billion will be earmarked to help with residential and business electricity bills, which could be characterized as revenue offsets in theory, though not distributed across the entire population (Jones, 2016, Nov. 30). The rest will be spent on the usual governmental preferences – transit, subsidies to renewable energy, dubious efficiency programs, etc.

Cap-and-trade (or greenhouse gas emission trading) is basically a hidden carbon tax, and

Poor Implementation Undermines Carbon Tax Efficiency

like a carbon tax, the only real way to mitigate against economic harm is to auction the credits then fully rebate the revenue via reductions in distortionary taxes such as personal income taxes and corporate income taxes. That's not going to happen in Ontario. And that's leaving aside the myriad problems with cap-and-trade systems in general, which tend to devolve into schemes that often shield emitters from the full costs of their emissions in order to avoid industrial flight, dropping the costs on ratepayers and taxpayers (Green, Hassett, and Hayward, 2007).

In addition, Ontario's Climate Action Plan leans heavily toward government picking and choosing carbon control technologies (Ontario, 2016) instead of leaving those decisions to the market. The plan would, among other things, create a "green bank" that homeowners and business owners could access to help them pay for the cost of reducing emissions from buildings. The plan also established a province-wide electric and hydrogen passenger vehicle sales target of 5% in 2020. Ontario's plan also calls for new renewable fuel requirements, massive incentives for electric vehicle purchasers (they can claim up to \$14,000 in rebates on the vehicle itself), and \$1,000 for installing home charging stations. Other components on the plan call for more spending on mass transit, additional bicycling infrastructure, additional land-use planning, and many other actions. In effect, having claimed credit for implementing an emission pricing system, Ontario has simultaneously declared it has no faith in the pricing system's ability to allocate abatement activity so government planners will do it instead. In its totality, Ontario's climate plan and its implementation of carbon pricing bears almost no resemblance to the textbook ideal.

Alberta

Or consider Alberta. Alberta's new carbon tax of \$30 per tonne (phased in by 2018) is expected to generate some 4 billion in revenues from 2017 to 2020 (Alberta, Ministry of Finance, 2017). A small portion of the revenues from the carbon tax (\$1.5 billion over the same time period) will be given to low-income Albertans. The rest, \$2.6 billion per year, or 44% of revenues, will be spent on favoured government projects (Johnson, 2015, Nov. 23).

Alberta's Climate Leadership Plan, like that of Ontario, does not meet the requirements for optimal carbon pricing. Not only does the plan impose a cap on annual emissions from the oil sands (which, by definition, prevents the market from actually discovering the real value of carbon emissions), but with other actions such as a phase-out of coal power by 2030, a push to build "renewable" sources of energy, and the establishment of a new agency, called Energy Efficiency Alberta (that will ostensibly help Albertans to improve their energy efficiency), it can only further distort Alberta's energy economy, as was the case in Ontario. Again, these actions directly contradict the tenets of optimal carbon pricing.

Quebec

And then there's Quebec, which also has a cap-and-trade system. It has brought in \$330 million so far, but is expected to bring in \$3 billion by 2020 (and probably more, as the province will have to match the escalating national price floor established by the federal government) (Québec, n.d.). Where does the revenue go? Not back to people in reduced income taxes. According to a government website discussing the "Green Fund" (translated), the revenues will

Poor Implementation Undermines Carbon Tax Efficiency

Table 1: British Columbia's Carbon Tax Revenue and Offsetting Tax Measures, Pre-existing Credits Excluded, 2008/09-2018/19 (\$ millions)

	Actual							Forecast			
	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19
Carbon Tax Revenue	306	542	741	959	1,120	1,222	1,198	1,216	1,234	1,252	1,275
Total Value of Actual Offsetting Tax Measures	313	729	865	1,141	1,337	996	1,047	1,061	1,108	1,150	1,170
Balance	-7	-187	-124	-182	-217	226	151	155	126	102	105
Breakdown of Actual Offsetting Tax Measures											
<i>Original Offsetting Tax Measures</i>											
Low Income Tax Credit	106	153	165	184	195	194	193	192	195	195	195
PIT Rate Cut	107	206	207	220	235	237	269	283	288	302	315
CIT Rate Cut	65	152	271	381	450	200	216	218	236	250	253
Small Business CIT Rate Cut	35	164	144	220	261	220	229	226	244	256	260
<i>New Offsetting Tax Measures</i>											
Northern and Rural Homeowner Credit	—	—	19	66	67	69	83	83	83	84	84
BC Seniors' Home Renovation Tax Credit	—	—	—	—	27	—	—	1	2	2	2
Children's Fitness Credit and Children's Arts Credit	—	—	—	—	9	8	8	8	8	8	8
Small Business Venture Capital Credit Budget Increase	—	—	—	—	3	3	3	3	5	5	5
Small Business CIT Threshold Increased	—	—	—	—	20	20	21	21	21	21	21
Industrial Property Tax Credit	—	54	58	—	—	—	—	—	—	—	—
Industrial Property Tax Credit for Major Industry	—	—	—	19	22	23	23	24	24	25	25
Industrial Property Tax Credit for Light Industry	—	—	—	49	46	20	—	—	—	—	—
School Property Tax Reduction for Farm Land	—	—	1	2	2	2	2	2	2	2	2

Note: Data is in nominal dollars.

Data reflects carbon tax offsets before changes were made in B.C.'s 2017 budget.

Source: Lammam and Jackson (2017), table 5.

Poor Implementation Undermines Carbon Tax Efficiency

- reduce fossil fuel consumption and improve the energy efficiency of buildings, industrial processes and vehicle fleets
- provide greater support for the development of mass and active transit
- accelerate the electrification of transport and the creation of new companies in this field
- broaden the use of renewable energy sources in all activity sectors
- encourage research and development in the field of clean technology
- have a proactive approach with respect to climate change adaptation. In addition to the actions set out in the 2013–2020 *Climate Change Action Plan*, Québec also defined its first adaptation strategy in June 2012: the 2013–2020 Climate Change Adaptation Strategy.
- update our knowledge on climate change and its environmental, social and economic impacts on Québec (Québec, 2017; Québec, 2011).

Like Ontario, Quebec is not eschewing additional regulations focusing on carbon emissions. Indeed, like Ontario, Quebec has enacted an electric vehicle standard with a goal of seeing 100,000 plug-in vehicles on the roads by 2020 (Quebec, 2016).

British Columbia

Finally, consider the vaunted British Columbia carbon tax. A recent Fraser Institute study, *Examining the Revenue Neutrality of British Columbia's Carbon Tax*, verifies that indeed, in its earlier years, the BC carbon tax was truly revenue neutral, at least in the academic sense: more revenues were given back to BC taxpayers in reduced taxes than were collected by the carbon tax (Lammam and Jackson, 2017a). Per-

sonal and corporate taxes were reduced, and additional tax reductions were introduced to ensure revenue neutrality. But by 2013/2014, only 5 years into the tax system, the government had taken to shaky book keeping to preserve the appearance, but not the reality, of revenue neutrality. Indeed, when the Fraser Institute researchers removed some pre-existing tax credits that had been re-defined as carbon tax reductions, they found that the province actually netted \$226 million in 2013/2014, with a cumulative tax take of \$377 million for 2013/2014 and 2014/2015. Based on the projections existing when the study was released, the researchers estimated a cumulative \$865 million tax increase by 2018/2019. That's about \$800 for a family of four.

But a closer look at the details shows that rather than solely rebating revenues to the general population, diversions from those types of tax reductions began in only the second year with measures targeted to specific subgroups of the population. As table 1 shows, the number of those special interest tax credits rose from one in year 2, to six by year 7, at which point \$140 million (12%) of actual offsetting tax measures were being directed to specific sub-populations through such programs as the Northern and Rural Homeowner Credits, Children's Fitness Credit and Children's Art Credit, Small Business Venture Capital Credit, Small Business CIT, Industrial Property Tax Credits for Major Industry, Industrial Property Tax Credit for Light Industry, and School Property Tax Reduction for Farm Land.

Andrew Coyne has defended the BC carbon tax, arguing that, because BC reduced taxes more than they collected in early years of the tax, later imbalances were not important, essentially arguing that revenue neutrality is something to be averaged over a span of years, taking into

Poor Implementation Undermines Carbon Tax Efficiency

account net surpluses and deficits in the system (2017, Mar. 16). However the trajectory has clearly been towards the carbon tax becoming a permanent net revenue source, and directing revenue into boutique tax credits distorts the tax code, rather than making it more efficient. (After the Fraser Institute study was released, the BC government added additional tax cuts to restore the overall revenue neutrality of the tax, though carve-outs will continue (Lammam and Jackson, 2017b).) In addition, there were no reforms or rollbacks of greenhouse gas emission regulations, such as fuel economy standards, appliance efficiency standards, construction standards, and so on, so once again the tax was simply layered on top of inefficient regulations instead of replacing them.

Conclusion

Advocates of carbon taxation continue to argue that a properly designed carbon tax is the most efficient way to reduce greenhouse gas emissions, while helping improve overall economic efficiency. In theory this is true: but departures from the theoretical ideal mean that such arguments are irrelevant in Canada.

Governments in Canada have shown little intention of implementing carbon taxes under the conditions required to yield efficiency. Instead of being revenue neutral, carbon taxes as implemented in Canada generate revenues for governments to spend on favoured technologies and social programs. Instead of replacing economically distorting regulations, provinces in Canada are layering their carbon tax/price systems on top of a vast catalogue of such regulations. And instead of letting markets decide where the most attractive greenhouse gas emission reductions are to be found, governments are overriding the price signals with wind power mandates, electric vehicle targets

and subsidies, mandated coal phase-out programs, and, as recently announced in Alberta, programs to help people switch to LED lighting and low-flow showerheads.

So it is clear that, even as governments extoll the wisdom of revenue-neutral carbon pricing instruments, they are not prepared to implement or maintain such schemes. Rather, in short order, carbon pricing has become just another mechanism to fund intrusive and inefficient government manipulation of the economy, while extracting a new revenue stream from our already highly-taxed private sector.

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Poor Implementation Undermines Carbon Tax Efficiency

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Poor Implementation Undermines Carbon Tax Efficiency

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