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Case Study: Carbon Tax in British Columbia

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The subnational carbon tax instituted by the Canadian province of British Columbia is considered by many to be a "textbook" example of a broad-based, revenue-neutral carbon tax. The tax, implemented in 2008, built on broad public concern about climate change, support from the public and the business community for action, and strong motivation and leadership by the province's premier. The stated goals for the tax were to encourage individuals and businesses to use less fuel and reduce their GHG emissions; send a consistent price signal for carbon; ensure those who produce emissions also pay for them (polluter pays principle); and make clean energy alternatives more economically attractive.

The tax is broadly applicable, covering most economic sectors and approximately 70 percent of GHG emissions (with all GHGs converted to CO_2-equivalence, or CO_2e, based on 100-year global warming potential). The tax is paid by all individuals and businesses that purchase or use fossil fuel in the province, with the CO_2e price translated to fuel taxes based on the carbon intensity. The tax revenues are used to fund reductions in other taxes on area citizens and businesses. The tax rate started out at approximately USD $8/ton CO_2e and increased uniformly through 2012 when it reached USD $24. At that time, the government decided to freeze the rate for 5 years to a) allow households and businesses time to reduce their emissions, and b) allow neighboring jurisdictions to catch up on emission reduction measures. The annual growth resumed in 2018 with a target of reaching approximately USD $40 in 2021.[2]

Jurisdictional Context/Background

- Per-capita GDP (USD): $38,259 (2014)
- Population: 4.8 million (2016)
- Major GHG emission sources: transportation (38 percent) and stationary combustion (31 percent)
- Human development index: 0.913 out of 1.0 (Canada; 2014)
- Government capacity[1] (Canada, out of 100; 2014):
  - Voice & accountability: 95.6
  - Political stability and absence of violence/ terrorism: 92.9
  - Government effectiveness: 95.2
  - Regulatory quality: 97.6
  - Rule of law: 95.2
  - Control of corruption: 94.2

Available empirical modeling[3] has suggested that, in the first five years after implementation, the tax reduced GHG emissions by between 5 and 15 percent (relative to business-as-usual) while having an insignificant impact on the province's economic conditions. However, the tax implementation did face some challenges and generated some important lessons. For example, changes in the tax rate have been somewhat contingent on the outcome of political elections in the province; industrial exemptions and targeted corporate credits have undermined the broad coverage and revenue neutrality; and there has been increased earmarking of funds for political purposes.

Revenue Handling: The Ministry of Finance is charged with ensuring the carbon tax is revenue-neutral by recycling the revenues to households and businesses through personal tax reductions, tax reductions for businesses and development, and reduced corporate tax rates. To address concerns about regressivity, the tax incorporated a low-income climate action tax credit, which was designed to more than offset the carbon tax burden for low-income households. Citizens in the rural areas of the province had concerns that they bore a disproportionate burden of the tax due to higher transportation and heating costs; government responded by introducing a tax break for those citizens.

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[1] World Bank (2021)

[2] In 2020, the rate was frozen at USD $32/ton as a response to the COVID-19 pandemic (British Columbia, 2021).

[3] Summarized by Murray and Rivers (2015) and by Haites et al. (2018)

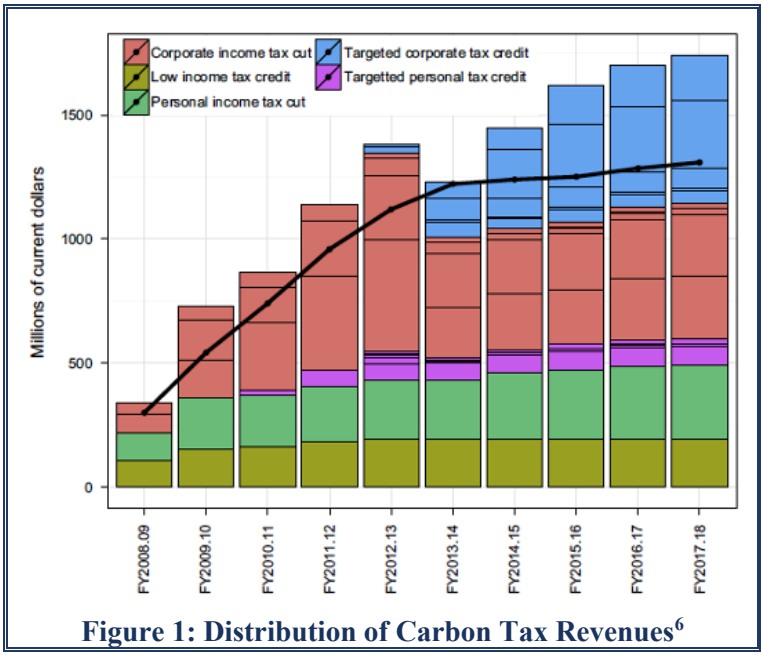

Figure 1: Distribution of Carbon Tax Revenues[6]

Measures to Prevent Leakage:[4] The tax was designed to be revenue neutral and incorporate broad-based tax reductions for businesses to help address leakage and promote cost containment. The phased approach to the carbon tax followed by the tax freeze gave businesses and individuals time to adjust to the tax to prevent relocation of fossil fuel-intensive activities outside of the jurisdiction. Finally, itemized exemptions[5] give relief to vulnerable industries.

Measures to Prevent Fraud: The Ministry of Finance was given broad inspection and enforcement powers, with the ability to assess interest and penalties between 10 and 100 percent of the tax amount owed. Additionally, board members of corporations may be held jointly and severally liable for unpaid penalties, taxes, and interest.

Challenges: The administration of the carbon tax has been somewhat vulnerable to political shifts, with different elected governments narrowing tax credits (e.g., see increased targeted corporate tax credits in later years in figure) or widening exemptions to curry favor among interest groups, undermining the even-handed application and revenue neutrality.

Emissions Impact: Based on modeling, various studies estimated that the tax reduced GHG emissions by between 5 and 15 percent in the first five years compared with business as usual. However, emissions subsequently increased due to the carbon tax rate freeze in 2013 and a narrowing of the tax base due to grants and exemptions introduced after implementation.

Economic Outcomes: The carbon tax had an insignificant impact on the economy, and very few industries struggled with international competitiveness as a result. The effect on labor markets in emissions-intensive and trade-exposed (EITE) sectors was slightly negative, but was positive in other sectors.

[4] Leakage occurs when emission reductions within the taxed jurisdiction are offset by an increase in emissions in other jurisdictions due to displacement of the emitting activity.

[5] Exemptions include wood/biomass, biomethane, fuel for interjurisdictional commercial marine and aviation purposes, fuel to be exported, methane and nitrous oxide emissions from natural gas extraction and agriculture (unrelated to fuel use), emissions from industrial processes and forestry (unrelated to fuel use), commercial greenhouse operations eligible for partial grants, and color gasoline and diesel used by farmers for listed farm purposes.

[6] Murray and Rivers (2015)

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