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Is British Columbia's carbon tax good for household income?

Summary

This Research Brief describes how British Columbia's carbon tax – and accompanying personal and corporate tax cuts – affect households by altering investment and economic activity across the province. Using Navius' GEEM model, we determine that the average household is better off with the carbon tax than without. A key reason is that the government uses carbon tax revenue to reduce personal and corporate income taxes, making the province a more attractive jurisdiction for investment.

The full report, describing our methods and results in detail, is available at www.naviusresearch.com/data/pages/resourcesBriefs2.php.

How does the carbon tax affect households?

The Liberals introduced the carbon tax in 2008 to encourage a shift away from greenhouse gas intensive activities across the economy and help achieve the province's targets for emission reductions. The most obvious effect of the carbon tax is to increase the cost for energy, such as natural gas and gasoline. Households currently rely on these fuels for heating their homes and operating their vehicles, so the carbon tax imposes an additional cost on households.

But this isn't the full story – the carbon tax also has a number of effects that are less obvious. For example, households can reduce emissions by improving the efficiency of their homes or purchasing a more efficient vehicle, and by doing so reduce their exposure to the tax. These decisions have both costs and benefits – more energy

efficient technologies typically have a higher initial purchase price, but they also reduce a household's energy costs.

When implementing the tax, the Liberals committed to returning revenue raised by the tax back to the economy, which has various impacts on households. First, households benefit directly from lower personal income taxes as well as through higher transfers to low-income, rural and northern-communities. Second, cuts to corporate and personal income taxes stimulate economic activity across the province and benefit households indirectly. Lastly, the tax causes the cost of some non-energy goods and services consumed by households to rise, if providing that good or service requires fossil energy.

Evaluating the impact of the carbon tax therefore requires a comprehensive assessment of the costs imposed on households, and must also account for how carbon tax revenue is subsequently recycled throughout the economy.

What are the net impacts of the carbon tax on households?

After accounting for the positive and negative effects described above, we find that some energy and emissions intensive sectors of British Columbia's economy are negatively impacted by the carbon tax, including mining and natural gas extraction. However, by using carbon tax revenue to reduce personal and corporate income taxes, the overall economy is boosted and **the average household is made better off by \$121 annually in 2020.**

Essentially, we find that the benefits of personal and corporate tax cuts outweigh the costs of the carbon tax. In particular, by lowering corporate taxes, the province is likely to become more economically competitive relative to other jurisdictions in North America. This competitiveness has a positive impact on the provincial economy and on household income.

Figure 1 summarizes the annual costs and benefits of the carbon tax for the average household in 2020, which include:

- *Carbon costs.* The most visible component of the policy is the carbon tax paid by households on fossil fuels. In 2020, households pay \$125 in carbon tax on average, primarily on gasoline for transportation and natural gas for household heating.
- *Personal income tax cuts and transfers to households.* The main benefits to households result from recycling of carbon tax revenue. Personal income tax reductions and transfers to households directly raise annual household income by \$120 and \$157, per year respectively (\$277 in total).
- *Other effects.* These effects include higher prices for non-energy commodities and services as well as changes to British Columbia's economic activity (both positive and negative). Reductions in corporate income taxes help minimize negative economic impacts by making the province an attractive jurisdiction for investment. The net impact of these various effects is a cost of \$31 per year.

Figure 1 Annual impact of the carbon tax on the average British Columbia household in 2020



Source: Navius analysis. Assuming the carbon tax is maintained at its current structure and level of \$30 per tonne carbon dioxide equivalent (t CO₂e).

Is it possible for the carbon tax to help the environment and the economy?

Yes. Welfare and economic activity may improve if carbon tax revenue is used to reduce taxes on capital¹. In particular, if capital is mobile across North America and a single jurisdiction (i.e., British Columbia) reduces corporate income tax rates, that jurisdiction becomes more attractive for investment.

¹ Goulder, L.H. 1995. "Environmental Taxation and the Double Dividend: A Reader's Guide." *International Tax and Public Finance* 2: 157-183.

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For questions about this research or to inquire about custom analyses, please contact Noel Melton at Noel@NaviusResearch.