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Technical appendix: Reality check: Only BC's very richest paying higher tax rate

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March 25, 2019

We use Statistics Canada's Social Planning and Simulation Database and Model (SPSD/M) to examine changes in the BC provincial tax system between 2000 and 2016 and between 2016 and 2020. The year 2000 is chosen as a baseline reference point before the series of extensive tax cuts introduced by the BC government under then-premier Gordon Campbell starting in 2001. In turn, 2016 is the final year before BC's most recent change of government in 2017 and 2020 is when elimination of Medical Services Plan premiums will be fully implemented.

The SPSD/M contains a database of 200,000 representative individuals in over 80,000 families in the ten provinces (territories not included), constructed by combining administrative data on income tax returns and unemployment claimant histories with survey data on incomes, employment and spending. This is the same database used by governments in Canada to analyze the impact of proposed tax changes.

SPSD/M version 27 is used for this report, the latest available at the time of writing. The assumptions and calculations underlying the simulation results were prepared by Alex Hemingway and responsibility for their use and interpretation is entirely that of the author.

We examine income and tax distributions at the household level to take account of the fact that individuals living together pool their resources. BC households are divided in deciles according to their total income, including employment income, other market income (including lump-sum RRSP withdrawals) and government transfers. This allows us to see how taxes have changed for households at different points on the income spectrum. We use deciles because they provide a more appropriate comparison over long periods of time than fixed income groups (families with income under $20,000, $20,000 - $30,000, etc.) because inflation and real wage growth gradually move family incomes upward. The table below shows the income thresholds and average incomes of households for each decile in 2020 as modelled by SPSD/M. Note that the household level thresholds are distinct from distributions at the individual or family level.

Decile	Income thresholds for each decile	Average income for households in this group
Poorest 10%	$1-$22,248	$16,349
Decile 2	$22,249-$34,334	$27,642
Decile 3	$34,335-$47,818	$41,041
Decile 4	$47,819-$63,711	$54,738
Decile 5 - middle	$63,712-$80,708	$71,723
Decile 6	$80,709-$99,515	$89,770
Decile 7	$99,516-$120,777	$109,737
Decile 8	$120,778-$151,886	$136,274
Decile 9	$151,887-$197,262	$172,962
Richest 90-95%	$197,263-$253,627	$220,582
Richest 95-99%	$253,628-$461,736	$313,025
Richest 1%	$461,737 and up	$962,365

Note that Statistics Canada's System of National Accounts went through a major revision in 2011 and SPSD/M commodity tax variables were adjusted to reflect the new system going back to 2009. Caution should be applied when comparing commodity tax results before and after 2009; however, this remains the best available source for examining the incidence of provincial commodity taxes.

The estimate of provincial commodity taxes used in this analysis excludes the SPSD/M variable "profit on liquor commissions" because it is not actually a tax (though it's included in the estimate of taxes for the purpose of the new System of National Accounts). The definition of "profit on liquor commissions" is:

> *the value of provincial profits on liquor commissions* associated with the household's disposable income and consumption pattern. These profits are defined as *the value of gross sales less administrative and general expenses*. The value of gross sales is, in part, a function of the markups over costs the provincial government applies.

In this analysis, BC's sales tax credit and the low income tax climate action tax credit are included in total income as government transfers instead of being subtracted from the total amount of taxes paid. Although these credits exist in recognition that PST and the carbon tax are regressive and attempt to compensate lower income families, they are actually income transfers—the government gives cheques to families who qualify for these credits based on their previous year's income and not on the actual amount of PST or carbon tax paid. Rerunning the analysis with these credits subtracted from taxes paid, rather than added to income, yields very similar results.