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Technical appendix for *BC should eliminate the MSP. Here are two better options*, available at policynote.ca/eliminate-msp

*Iglika Ivanova, Senior Economist and Public Interest Researcher
Canadian Centre for Policy Alternatives, BC Office*

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Methodology

I use Statistics Canada's Social Planning and Simulation Database and Model (SPSD/M) and provincial tax projections from BC Budget 2016 to model the elimination of MSP and its replacement with personal income taxes in BC in 2017.

The SPSPD/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 when they analyze the impact of proposed tax changes.

The SPSPD/M allows researchers to estimate both the overall revenue impact of various tax reforms and the distributional effects of these reforms on families. 2017 is selected so that the analysis can capture MSP changes announced in BC Budget 2016 scheduled to come into effect in 2017.

SPSPD/M version 22.1 is used for this paper, the latest available at the time of writing. This version was released before BC Budget 2016 was tabled and does not incorporate the changes to MSP coming in effect in 2017. The exclusion of children from the calculation of MSP premiums had to be incorporated in glass box mode (source code available upon request from the author). MSP premium assistance rates and personal income tax rates for Options 1 and 2 were changed in black box mode. The analysis is done at the Census family

level because MSP premiums are assessed based on Census family size (as of 2017, they will be based on the number of adults in each Census family).

There are data discrepancies between the SPSPD/M and the BC Budget: the total amount of BC income taxes paid by individuals in 2017 from the SPSPD/M (\$8,412 million) does not match the provincial income tax revenues projected in BC Budget 2016 (\$8,611 million for 2017/18). Some of that is due to the fact that the SPSPD/M estimates are based on calendar years while the provincial budget reports tax revenues on an April to March fiscal year basis. To correct for SPSPD/M's underestimation of provincial taxes reported, I adjust the net provincial revenue impact generated from SPSPD/M in each reform option using the projection of provincial income taxes in BC Budget 2016 (SPSPD/M revenue impacts are converted into a percent of the total SPSPD/M income tax bill, and the percentage share then applied to income tax revenue projections from the BC Budget to arrive at a dollar estimate for the additional revenues generated by each tax option).

The SPSPD/M is a static model and does not take into account any changes in taxpayers' behaviour in response to changes in their effective tax rates, which may affect the size of the provincial tax base and thus revenues from tax reform. However, I believe such behavioural effects to be relatively minor in this case.

In theory, behavioral effects reflect changes in economic behavior (such as a change in the number of hours worked) as well as changes in tax avoidance efforts (efforts to reduce taxable income by shifting compensation from wages and salaries to stock options, for example, or changing their tax planning strategies). In practice, there is little evidence of economic behavior effects. In their review of the literature, Diamond and Saez note that: "A number of studies have shown large and quick responses of reported incomes along the tax avoidance margin at the top of the distribution, but no compelling study to date has shown substantial responses along the real economic responses margin among top earners."¹

However, it is important to remember that these behavioural responses (or elasticities) are not fixed parameters determined by individual preferences but depend to a large extent on the tax system, which can be reformed to reduce opportunities for tax avoidance.² Thus, empirical estimates based on a particular tax system may not apply to a hypothetical tax change in a different tax system or after reform to close tax loopholes.

For example, a recent Canadian study by Milligan and Smart finds that a large share of the estimated behavioural effects of provincial income tax increases is due to high-income taxpayers responding to income tax increases in their province by shifting income to lower-

¹ Peter Diamond and Emmanuel Saez. 2011. "The Case for Progressive Tax: From Basic Research to Policy Recommendations" *Journal of Economic Perspectives*, 25(4): 165-90.

² Emmanuel Saez, Joel Slemrod and Seth H. Giertz. 2012. "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review." *Journal of Economic Literature*, 50(1): 3-50.

tax provinces, specifically Alberta.³ However, a number of federal and provincial changes since the period analyzed by Milligan and Smart have reduced the opportunities for high-income taxpayers to shift income and engage in so called aggressive tax planning. These changes include substantial personal tax increases in Alberta, increased federal resources for tax enforcement in Canada's Budget 2016, and administrative changes making it harder to set up Alberta Family Trusts.⁴ These developments have reduced the behavioural effects of provincial income tax changes in Canada, making them less of a concern for my analysis.

It should, however, be noted that the modeling results presented here are not exact calculations but estimates of the level of magnitude of additional revenues that can be raised with the changes outlined in Options 1 and 2.

A note on the MSP and First Nations in BC

As of July 2013, the First Nations Health Authority covers the MSP payments for First Nations residents of BC (with Status) under a group plan. Previously, they were covered through Health Canada's First Nations and Inuit Health Branch.

Importantly, not all First Nations people have status under the Indian Act. However, those who do would not personally see direct savings as a result of the elimination of MSP and may experience a tax increase if their individual off-reserve taxable income is more than \$21,000 per year. According to Ministry of Health data released through an FOI, about 8% of BC residents covered by MSP were First Nations. A number of them have incomes low enough to qualify for premium assistance, and so would not be affected by the personal income tax increases in Option 1 and 2.

Option 2: Would employers pass the business tax to employees?

The distributional analysis presented in Figures 2 and 3 of the report assume that the proposed business tax is entirely paid by employers and does not affect family incomes. However, economic theory stipulates that business taxes aren't necessarily paid by business owners but may be passed on to employees through lower wages or customers through higher prices. The analysis of tax incidence studies the distribution of the tax payment across different groups. This distribution (or incidence) depends on the characteristics of the

³ Kevin Milligan and Michael Smart. 2015. "Provincial Taxation of High Incomes: The Effects on Progressivity and Tax Revenue." In David Green, W. Craig Riddell and France St-Hilaire, eds. *Income Inequality: The Canadian Story*. Montreal: IRPP.

⁴ Thanks to Kevin Milligan for flagging the administrative changes to Alberta Family Trusts (and that these were one of the primary vehicles for shifting taxes on capital income in the 2000s) and reforms to reduce the tax advantages of Canadian Controlled Private Corporations in an email exchange.

market for the good or service that is taxed, including relative elasticities of demand and supply, and the degree of competition in the market.

Canadian research on the incidence of payroll taxes finds that a large portion of payroll taxes is effectively paid by workers who experience lower wage growth in the long run (because aggregate labour supply is relatively inelastic).⁵ This suggests that there may be distributional impacts of Option 2 which the modeling is not able to capture.

However, these impacts are likely to be relatively small because some businesses already pay MSP premiums for their employees as a fringe benefit. Therefore, employer-paid MSP premiums have already been reflected in lower wages (than what would have been the case in the absence of employer-paid MSP premiums). Option 2 proposes to introduce a payroll tax to collect the same revenue as employer-paid MSP premiums but spread the tax more equitably among employers.

Theoretically, if the new business tax is entirely shifted to workers, this would not affect the aggregate level of wages in the economy. However, employers who now cover MSP premiums would see their MSP bill go down, while employers who do not currently cover MSP premiums would see their bill go up. Economic theory suggests this would result in wages rising somewhat faster for employees who used to have their MSP covered than those who did not (in the long run). Unfortunately, the precise distributional impacts on BC families cannot be estimated with the available data. However, they are likely to be relatively modest.

⁵ Bédard, Michael. 1998. "A Primer on Payroll Taxes in Canada." Research paper. Applied Research Branch, Strategic Policy, Human Resources Development Canada. While business lobby groups sometimes argue that payroll taxes are taxes on jobs, economics research finds that payroll taxes do not lower the level of employment.