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Is the elasticity of taxable income mostly an income effect?*

English Summary

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Motivation

This study revisits the estimation of the elasticity of taxable income (ETI), or the responsiveness of taxable income to taxation, a key parameter for evaluating the welfare and tax revenue effects of tax policies. While existing research finds that high-income taxpayers react more to tax changes, the study questions whether this reflects inherent heterogeneity in substitution effects—meaning reduction in reported income because of marginal tax rate changes—or whether it is largely driven by income effects, if tax changes lead to big drops in income (e.g., through average tax rates) and influence income reporting behavior. Using a triple-difference (DDD) estimator, and the instrumental variable analogue, the study disentangles these effects, offering new insights into how tax reforms impact high-income individuals as well as tax revenue. The findings have implications for optimal tax progressivity and revenue-maximizing top rates.

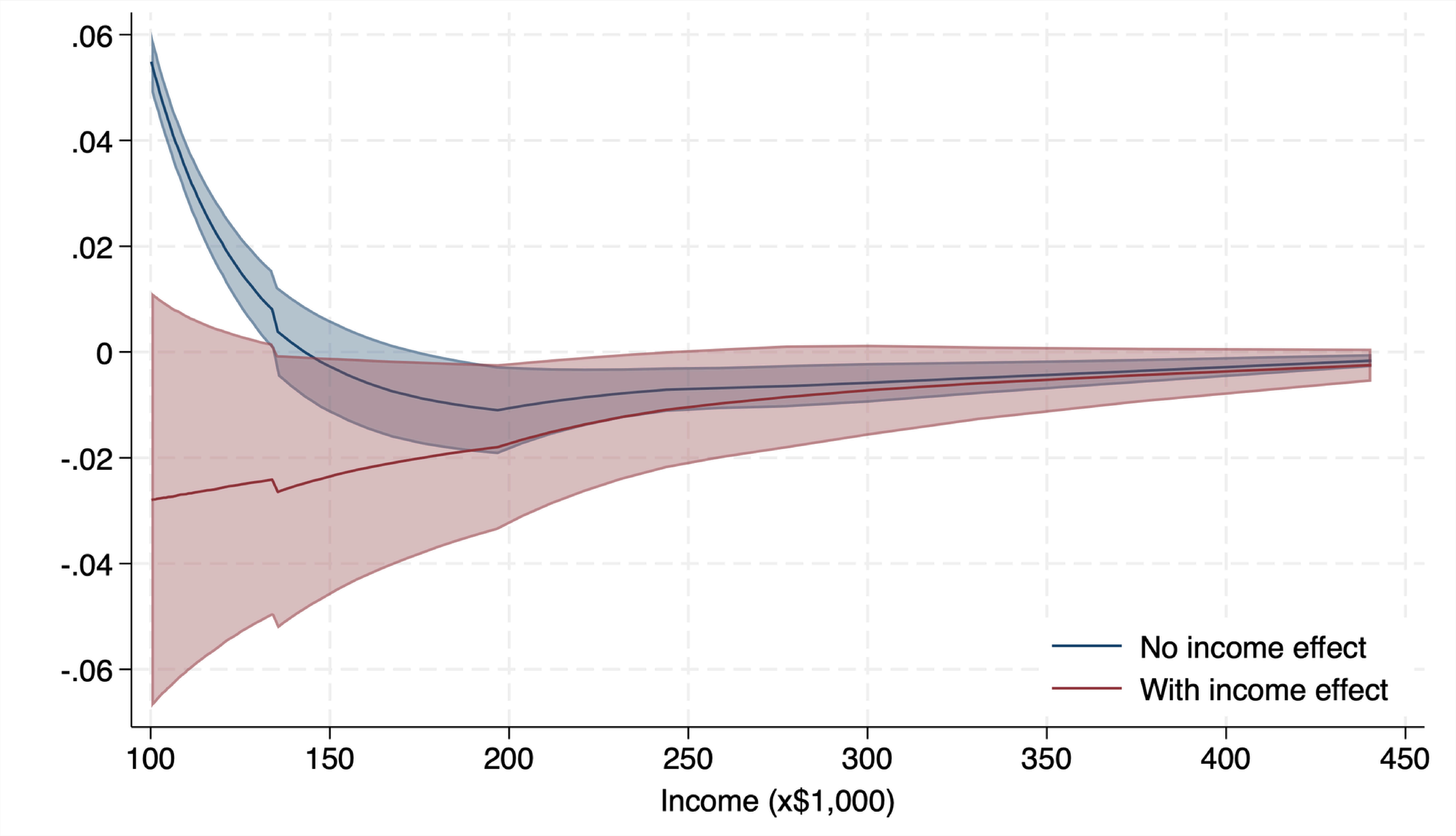
Analysis

The study employs a triple-difference (DDD) estimator to distinguish between the income and substitution effects of tax reforms. It analyzes tax changes in four Canadian provinces (Ontario, Quebec, Alberta, and British Columbia) between 2013 and 2016, where top-bracket tax rates and income thresholds were modified at different times. This design controls for macroeconomic shocks and province-specific trends by comparing taxpayers affected by tax reforms to those in non-reforming provinces, in unaffected parts of the income distribution and in non-reform years.

Using 7.6 million taxpayer-year observations from the T1 Personal Master File, the study tracks changes in reported taxable income, marginal tax rates, and average tax rates over four-year periods. The estimation strategy employs instrumental variables to correct for endogeneity, ensuring that observed reported income responses are linked to actual tax changes rather than mean-reverting income fluctuations. By leveraging differences in tax bracket thresholds and rates across provinces, the study isolates the income effect—linked to changes in average tax rates—from the substitution effect, which depends on marginal tax rates, thus providing a clearer understanding of taxpayer behavior in response to taxation.

Results

- **High-income taxpayers reduce reported taxable income following tax increases**, but this response is primarily driven by income effects (stemming from **their distance from income tax thresholds and average tax rates) rather than adjustments to marginal tax rates** (or substitution effects).
- The **income effect is substantial**, with a one percentage point increase in the average tax rate of a taxpayer leading to a 2.4% decline in reported taxable income.
- The estimated **substitution effect, or elasticity, when no income effect is allowed** ("uncompensated ETI") is **0.10 for incomes below $200,000 and 0.98 above this**; when the estimated income effect is included, the substitution elasticity ("compensated ETI") instead becomes **0.17 below $200,000 and 0.63 above that**.
- The figure below shows the resulting estimated responsiveness of tax revenue to a small ("local") increase in marginal tax rates in Canada at different taxable income levels, with shaded areas representing uncertainty. The portion in red, which accounts for our estimates of income effects, indicates that the revenue generation potential is negative along the high-income range considered ($100,000-$450,000). Neglecting income effects (the portion in blue) would suggest that increasing marginal tax rates at the bottom of this range might increase revenue, but this result disappears when income effects are accounted for.



Estimated tax revenue variation generated by a marginal increase in marginal tax rates in the neighborhood of each income level

Conclusion

The study finds that high-income taxpayers are not more responsive to taxation due to greater adjustments to marginal tax rates. Instead, their stronger reaction to tax changes largely results from income effects and tax salience, or their distance from income tax thresholds as measured by average tax rates. This finding has implications for tax policy, as it suggests that:

- Policymakers should consider tax salience and taxpayer perception when designing top-bracket tax policies, as responses are influenced by how visible and impactful tax changes appear – and how they are reflected in average tax rates;
- Our results raise the issue of whether current top tax rates in Canada are on the efficient side of the Laffer curve (i.e., they efficiently raise revenues).