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PROVINCIAL TAX RATE ADJUSTMENTS IN CANADA

Ergete Ferede, Bev Dahlby, and Ebenezer Adjei[†]

Changes to tax rates are important fiscal events in Canada. They affect the amount of taxes that Canadian households and businesses pay to governments, and the level of economic activity by affecting incentives to work, save, and invest. Thus it is important to understand what factors cause governments to increase or reduce their tax rates.

A recent study by Ergete Ferede, Bev Dahlby, and Ebenezer Adjei sheds some light on some of the factors that determine the timing and direction of tax rate adjustments by provincial governments.[1] The main conclusions from the study are:

- A province's fiscal position affects the direction and timing of its tax policy:
  - Provincial governments that start with higher corporate, personal, and sales tax rates are more likely to cut, and less likely to raise, their tax rates.
  - A higher provincial budget deficit reduces the probability of a corporate tax rate cut and raises the probability of a sales tax rate increase.
  - An increase in the provincial corporate income tax rate is more likely in a year in which the provincial government raises its personal income tax rate and vice versa.

[†] We would like to thank Ken McKenzie for his helpful comments and advice on an earlier draft of this paper.

[1] Ergete Ferede, Bev Dahlby, and Ebenezer Adjei. "The Timing and Direction of Statutory Tax Rate Changes by the Canadian Provinces," The School of Public Policy Technical Paper, 2013.

- Federal fiscal policies affect the timing and direction of provincial tax rate changes:
  - A reduction in federal personal income tax rates increases the likelihood of a provincial personal income tax rate **increase**.
  - A reduction in federal corporate income tax rates increases the probability of a provincial corporate income tax rate **reduction**.
  - An increase in federal grants to the provinces increases the likelihood of a provincial corporate income tax rate reduction, although the effect is quite small.
- Provinces react to tax rate changes in other provinces:
  - An increase in other provinces' corporate income tax rates raises the probability that a province will increase its own corporate tax rate.
  - An increase in other provinces' personal income tax rates lowers the probability that a province will lower its own personal income tax rate.
  - An increase in a neighbouring province's sales tax rate increases the probability that a province will increase its own sales tax rate.
  - A decrease in a neighbouring province's sales tax rate increases the probability that a province will reduce its own sales tax rate
- Politics matter:
  - Provinces with the NDP or Liberal parties in power are less likely to reduce personal income tax rates and sales tax rates, and more likely to raise personal income tax rates.
  - During an election year, provincial governments are less likely to raise sales tax rates.

More details concerning the findings of this report are contained below.

Changes to provincial statutory tax rates are relatively infrequent events.[2] Between 1973 and 2010, Canadian provincial governments only changed their top statutory personal income tax rates 137 times out of a possible 380 province-year episodes. In other words, 65 percent of the time, the provinces did not change their personal income tax rates. Corporate and sales tax rates changes were even less frequent, with only 83 corporate income tax rate changes and 52 sales tax rate changes by provincial governments during that period. Thus, 78 percent of the time there were no provincial corporate income tax rate changes and 86 percent of the time there were no sales tax rate changes. While statutory tax rate changes are relatively infrequent events, provincial governments are most likely to change their personal income tax rates and least likely to change their sales tax rates.

Figures 1 and 2 show the timing and direction of corporate, personal, and sales tax rates in British Columbia and Ontario from 1973 to 2010. These figures illustrate two important characteristics of provincial tax rate changes: they are relatively infrequent, with no tax rate changes in most years, and the three main provincial taxes tend to be changed in the same direction — up or down — in certain periods in response to the province's fiscal situation and tax changes by the federal and other provincial governments. In other words, they are either in periods when all three tax rates are either increasing or decreasing.

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[2] It is important to note that this study only deals with statutory tax rate changes and does not consider tax policy changes relating to the definitions of tax bases, exemptions, credits, etc.

FIGURE 1: STATUTORY TAX RATE CHANGES IN BRITISH COLUMBIA, 1973 TO 2010

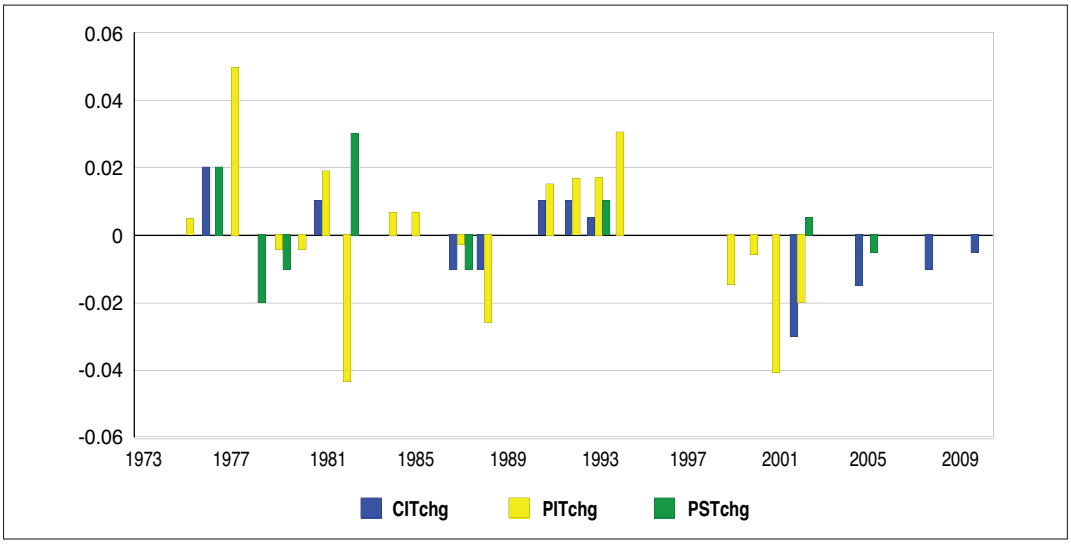
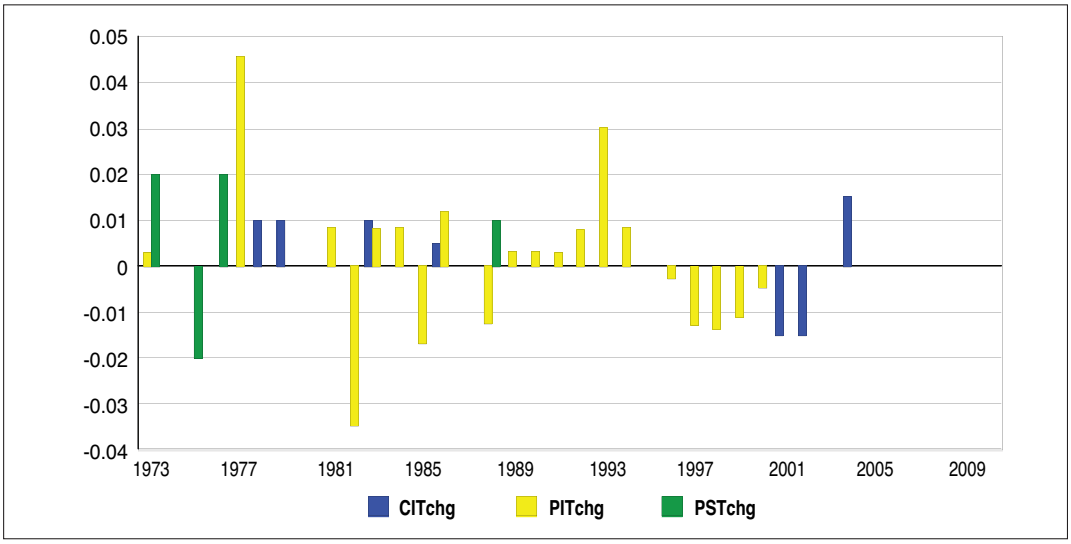


FIGURE 2: STATUTORY TAX RATE CHANGES IN ONTARIO, 1973 TO 2010



Also, provinces tend to change their tax rates in the same direction as other provinces during certain periods. This is illustrated in Figures 3 and 4, which show the changes in corporate and personal income tax rates in Alberta, BC, Ontario, and Quebec. However, the directions of provincial tax rate changes are not always fully synchronized, with Quebec for example increasing its corporate income tax rate in recent years while the other three provinces were reducing their rates.

FIGURE 3: CHANGES TO STATUTORY CORPORATE TAX RATES IN ALBERTA, BC, ONTARIO AND QUEBEC, 1973 TO 2010

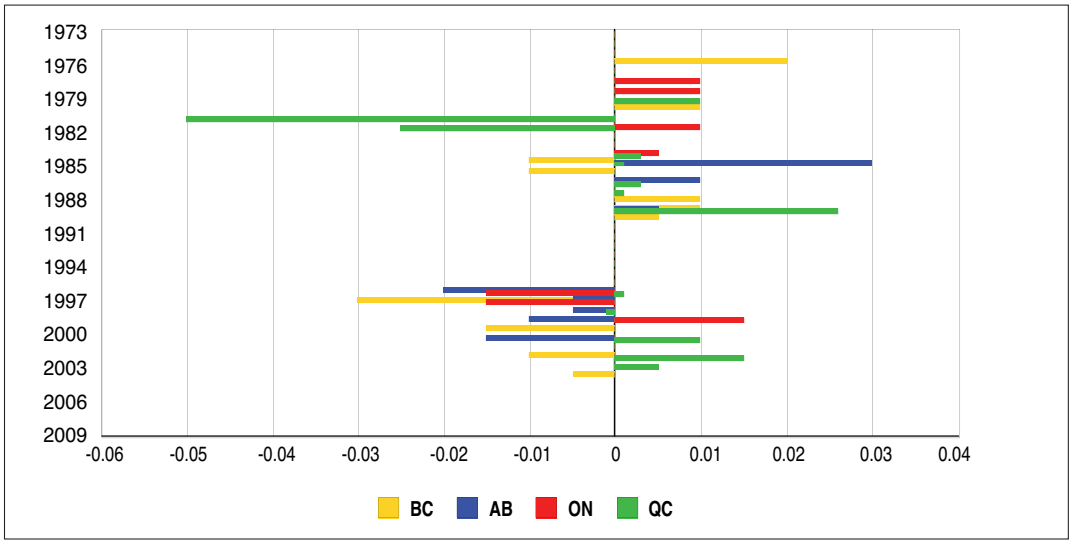
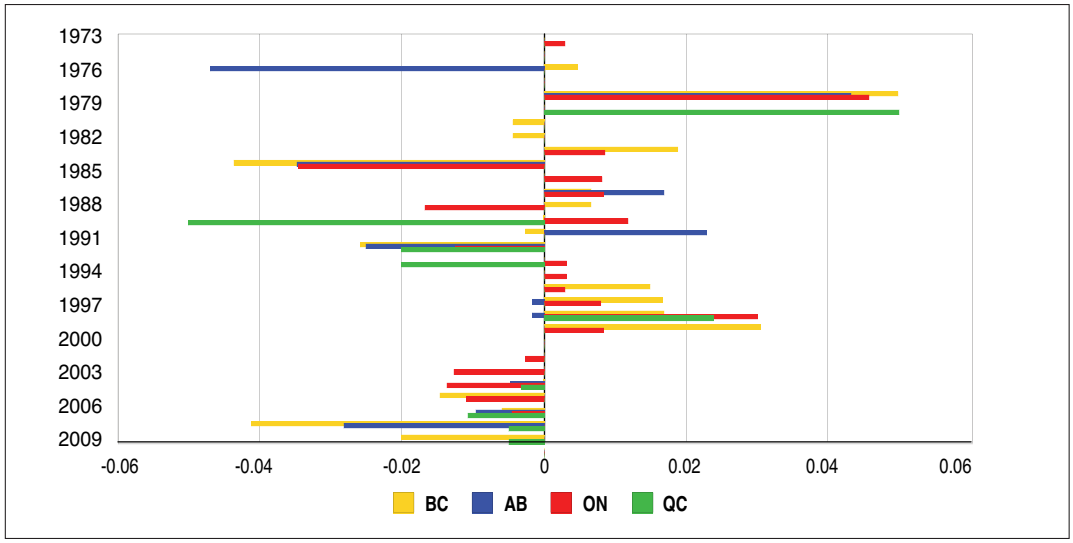


FIGURE 4: CHANGES TO STATUTORY PERSONAL INCOME TAX RATES IN ALBERTA, BC, ONTARIO AND QUEBEC, 1973 TO 2010



The study also indicated that there were significant differences in the likelihood of tax rate changes across the different provinces. Table 1 shows the average probabilities of tax cuts and tax increases predicted by the statistical model, over the period 1973 to 2010. Quebec had the highest predicted probability of a corporate income tax rate increase, mainly because of its relatively low corporate income tax rates over this period, and the lowest predicted probability of a personal income tax rate increase, because of its relatively high personal income tax rate. In contrast, Ontario had the highest predicted probability of a personal income tax increase, reflecting the variety of factors, noted above, that affect the probability of tax rate changes.

TABLE 1: AVERAGE PREDICTED PROBABILITIES OF TAX RATE CUTS AND INCREASES, 1973-2010

Province	CIT cut	CIT increase	PIT cut	PIT increase	PST cut	PST increase
NFL	0.0541	0.1351	0.1081	0.3243	0.0270	0.1081
PEI	0.0000	0.0541	0.0541	0.2432	0.0541	0.0811
NS	0.0000	0.1081	0.1351	0.1622	0.0541	0.0811
NB	0.1081	0.1622	0.2432	0.2162	0.0541	0.0811
QB	0.0811	0.2703	0.1892	0.0541	0.1081	0.0540
ON	0.0541	0.1351	0.1622	0.3784	0.0270	0.0811
MB	0.1892	0.0811	0.1622	0.0811	0.0270	0.0811
SK	0.1351	0.1351	0.2703	0.1081	0.1081	0.1351
AB	0.1351	0.0811	0.1622	0.0811	0.0000	0.0000
BC	0.1351	0.1351	0.2432	0.2973	0.1081	0.1081
All provinces	**0.0892**	**0.1297**	**0.1730**	**0.1946**	**0.0568**	**0.0838**

Note: Computations based on Ferede, Dahlby and Adjei study.
Abbreviations: CIT is corporate income tax, PIT is personal income tax, and PST is provincial sales tax.

The changes in the probabilities of tax rate adjustments in response to events, such as an increase in the provincial deficit, depend on the baseline probabilities of tax rate changes. As Table 1 illustrates, these probabilities vary by province and therefore in Table 2, we use the average probabilities of tax cuts and tax increases over the entire 1973-2010 period to illustrate how the changes in the key exogenous events affect the probabilities of tax changes in Alberta and Ontario. Some of the most important changes in the probabilities of tax rate changes are

Corporate income tax:

- An increase in the province's personal income tax rate raises the probability of a corporate tax rate increase by 11.3 percentage points in Alberta and by 17.7 percentage points in Ontario. It lowers the probability of a corporate tax rate cut in Ontario by 1.1 percentage points and in Alberta by 1.7 percentage points.
- A reduction in the federal corporate income tax rate raises the probability of a provincial corporate income tax rate cut in Alberta by 14.7 percentage points and by 6.4 percentage points in Ontario.
- An increase in other provinces' corporate income tax rates raises the probability of a corporate income tax rate increase in Alberta by 24.7 percentage points and in Ontario by 38.7 percentage points.

Personal income tax:

- An increase in the province's corporate income tax rate raises the probability of a personal income tax rate increase by 10.2 percentage points in Alberta and by 32.2 percentage points in Ontario.
- A reduction in the federal personal income tax rate raises the probability of a provincial personal income tax rate increase in Alberta by 17.1 percentage points and by 54.1 percentage points in Ontario. It lowers the probability of a personal income tax rate cut by 14.1 percent in Ontario.
- An NDP or Liberal party in power lowers the probability of a personal income tax rate cut by 12 percentage points.

Sales tax:

- A provincial election in the current year reduces the probability of a sales tax increase by 13.6 percentage points in Ontario.

TABLE 2: CHANGES IN THE PROBABILITIES OF TAX CUTS OR TAX INCREASES FROM VARIOUS EVENTS (PERCENTAGE POINTS)

Event	Alberta		Ontario	
	Tax Rate Cut	Tax Rate Increase	Tax Rate Cut	Tax Rate Increase
Corporate Income Tax				
An increase in the province's personal income tax rate	-1.7	11.3	-1.1	17.7
An increase in the provincial government's deficit (one percentage point of GDP)	-3.4	0.3	-1.5	0.2
A reduction in the federal corporate income tax rate	14.7	-1.4	6.4	-0.9
A $100 per-capita increase in federal grants to the province	1.3	-0.1	0.6	-0.1
An increase in the corporate income tax rate in other provinces	-3.6	24.7	-2.4	38.7
Personal Income Tax				
An increase in the province's corporate income tax rate	-1.8	10.2	-8.4	32.2
A reduction in the federal personal income tax rate	-3.0	17.1	-14.1	54.1
An increase in other provinces' personal income tax rates (one percentage point)	-3.2	0.3	-3.2	1.4
An NDP or Liberal party in power	-12.0	1.2	-12.0	5.4
Sales Tax				
An increase in the provincial government's deficit (one percentage point of GDP)	na	na	-1.7	2.8
A $100 per-capita increase in federal grants to the province	na	na	0.4	0.0
A decrease in other provinces' sales tax rates	na	na	3.3	-0.3
An increase in other provinces' sales tax rates	na	na	-0.2	8.2
An NDP or Liberal party in power	na	na	-4.3	-0.4
A provincial election in the current year	na	na	0.4	-13.6

Conclusion

The statistical analysis of the timing of provincial tax rate increases and cuts indicates that the provinces' tax policies are influenced by each province's own fiscal situation, tax changes adopted at the federal level, by other provinces, and by the ideology of the political party in office. Perhaps the most significant result from this analysis is the insight that provinces tend to raise their personal income tax rates when the federal government lowers its personal income tax rates. This suggests that the provincial governments tend to take up the "tax room" vacated by the federal government when it reduces its personal income tax. Thus, Canadian taxpayers may not see the full value of a federal personal income tax cut, because it tends to be offset by provincial personal income tax increases. Moreover, this tendency varies across provinces. On the other hand, provincial corporate tax cuts tend to be associated with federal corporate tax cuts. This may indicate some coordination between the federal and provincial governments in the direction of the overall corporate income tax rate, and that both levels of government are responding to the same factors, such as lower corporate income tax rates in other countries.

Provinces also tend to respond to changes in tax rates in other provinces, but these responses are often asymmetric. Provinces tend to raise their corporate income tax rates when other provinces raise their corporate income tax rates, but the response to a reduction in other provinces' corporate income tax rates is ambiguous. Higher personal income tax rates in other provinces lower the probability of a cut in a province's personal income tax rate, but they do not have a clear effect on the probability of an increase in the province's personal income tax rate. An increase in other provinces' sales tax rates raises the probability of a sales tax increase, while a sales tax cut in other provinces increases the probability of a sales tax rate cut, but both of these effects are small. In other words, changes in other provinces' sales tax rates have little impact on a province's decision to changes its own sales tax rate. Perhaps this is not surprising, given that in most provinces residents live far from the nearest provincial border, and as a consequence cross-border shopping between provinces is low in most provinces.

Finally, the statistical analysis reveals that provinces tend to change their personal and corporate income tax rates in the same direction when there is a need for a fiscal adjustment. Increases in corporate income tax rates in response to personal income tax rates may be a reflection of the desire to protect the personal income tax base when the personal income tax rate is increased. The analysis does not support the notion that provincial governments raise personal or sales tax rates to compensate for any reductions in revenues from corporate income tax rate cuts.

About the Authors

Bev Dahlby and Ergete Ferede are currently engaged in a number of studies of the provincial governments' tax and expenditure policies and responses to intergovernmental grants.

Bev Dahlby, Professor of Economics and Distinguished Fellow at The School of Public Policy, University of Calgary, attended St. Peter's College, the University of Saskatchewan, Queen's University and the London School of Economics. Dr. Dahlby has published extensively on tax policy and fiscal federalism.

He has served as a policy advisor to the federal and provincial governments. His international experience includes advisory work on tax reform for the IMF in Malawi, for the Thailand Development Research Institute, and for the World Bank in Brazil. He was a member of the Jenkins Panel on federal support to research and development, a research fellow at the C.D. Howe Institute, and currently serves as a member of Statistics Canada's advisory council.

Ergete Ferede is currently an associate professor of Economics at Grant MacEwan University and Fellow of the Institute of Public Economics, University of Alberta. His BA and MSc are from Addis Ababa University in Ethiopia and his PhD is from the University of Alberta in 2005. His main research areas are public finance and economic growth. His research has been published in *National Tax Journal, International Tax and Public Finance, Small Business Economics, etc.* He has previously taught a wide range of courses at Addis Ababa University, University of Alberta, and University of Windsor. He was a winner of the University of Windsor Teaching Score Award for the academic year 2005/6.

Abenezer Adjeic received his MA in Economics from the University of Alberta. He has also served as a teaching and research assistant in the Department of Economics at the University of Alberta.