

Volume 8 • Issue 8  
March 2016

SPP Communiqués are brief articles that deal with a singular public policy issue and are intended to provide the reader with a focused, concise critical analysis of a specific policy issue.

Copyright © 2016 by The School of Public Policy.

All rights reserved. No part of this publication may be reproduced in any manner whatsoever without written permission except in the case of brief passages quoted in critical articles and reviews.

The University of Calgary is home to scholars in 16 faculties (offering more than 80 academic programs) and 36 Research Institutes and Centres including *The School of Public Policy*. Founded by Jack Mintz, President's Fellow, and supported by more than 100 academics and researchers, the work of The School of Public Policy and its students contributes to a more meaningful and informed public debate on fiscal, social, energy, environmental and international issues to improve Canada's and Alberta's economic and social performance.

## CUTTING PROVINCIAL CORPORATE INCOME TAX RATES TO PROMOTE INVESTMENT, EMPLOYMENT AND ECONOMIC GROWTH

Ergete Ferede<sup>†</sup> and Bev Dahlby<sup>‡</sup>

This communiqué is based on the following paper: *The Costliest Tax of All: Raising Revenue Through Corporate Tax Hikes can be Counter-Productive for the Provinces* by Ergete Ferede and Bev Dahlby.

Raising taxes can come at a high cost. Not just to taxpayers, of course, but to the economy. Every tax hike naturally leads people or companies to adjust their economic activities in ways that result in a reduction in investment, employment and economic growth. The loss of income-generating opportunities is the true cost of raising tax revenues. Econometric studies clearly demonstrate that corporate income taxes are far more sensitive to changes in the provincial tax rates than are personal income taxes or general sales taxes and result in greater economic losses per dollar of revenue raised. Furthermore, beyond a certain point, raising tax rates becomes counterproductive, with the revenue lost due to the negative economic effects outweighing any revenue gains through higher rates. In these situations, a government can actually raise more revenue by lowering tax rates than by increasing them.

The relationship between tax rates and tax revenues is known as the Laffer curve, named after Edward Laffer who famously drew this curve on a napkin in a Congressional dining room in Washington to demonstrate how a tax rate reduction could raise additional revenues if tax rates exceed a critical level. The Laffer curve is usually portrayed as an inverted U shape and if the tax rate exceeds the point where tax revenues are a maximum, then a tax rate cut can increase tax revenues. In such cases, we say that the government is on the “wrong side” of the Laffer curve.

An analysis of the responsiveness of provincial tax bases to tax rates by Ferede and Dahlby (2016) reveals that this has occurred in Saskatchewan. The province has raised corporate taxes to a level where it has eroded the corporate tax base

<sup>†</sup> Department of Economics, MacEwan University, Edmonton

<sup>‡</sup> The School of Public Policy and Department of Economics, University of Calgary, Calgary

to the point where it has sabotaged the government's goal of raising more revenue. This phenomenon has also occurred in New Brunswick, Newfoundland and Labrador, P.E.I., and Nova Scotia. In all these provinces, corporate tax rates are so high that lowering the tax rate would actually increase the provincial governments' tax revenues.

The other five provinces, Alberta, Ontario, British Columbia, Manitoba and Quebec, have sacrificed income-generating opportunities by imposing higher taxes on corporations when they could have generated the same amount of revenue through higher sales taxes (or in the case of Alberta, a new sales tax). Quebec, at least, has lower tax-base elasticity than the others, possibly due to its unique cultural and linguistic characteristics, which may make it somewhat less likely for people and investors to leave the province.

Figure 1 shows the Laffer curves for provincial corporate income tax rates in the 10 provinces. The vertical axis in these diagrams represents total tax revenues, and not just corporate income tax revenues, that would be generated in 2013 in each province. It is not drawn to scale because, obviously, Ontario can generate more corporate tax revenues at any given tax rate than PEI. The horizontal axis is the provincial corporate income tax rate. For each province, we show its actual 2013 corporate tax rate, which generates a certain level of tax revenue, denoted as  $R_{act}$ .

The tax rate that would maximize total tax revenues in a province, denoted as  $R_{max}$ , has been calculated based on estimates of the tax sensitivity of each province's corporate tax base, the size of the base and how changes in the corporate tax rate affect revenues from the provincial personal income tax and provincial sales tax in that province.<sup>1</sup> In the case of Saskatchewan, the revenue maximizing corporate tax rate is 5.7 per cent, whereas its tax rate in 2013 was 12 per cent. Lowering the corporate tax rate in Saskatchewan to 5.7 per cent would have increased total tax revenues in the province. In other words, Saskatchewan was on the wrong side—the downward sloping side of its Laffer curve. Figure 1 shows that New Brunswick, Nova Scotia, PEI, and Newfoundland were also on the wrong sides of their Laffer curves.

While the other five provinces were on the upward sloping sections of their Laffer curves in 2013, this does not mean that they should increase their corporate tax rates to maximize their total tax revenues. At  $R_{max}$ , the tangent line to the Laffer curve is flat, indicating that a tax rate increase generates no additional revenues but it still imposes costs on the economy through foregone investment and employment opportunities. Therefore, the cost of raising an additional dollar of tax revenue at  $R_{max}$  is infinitely large. By the same reasoning, the cost of raising tax revenue through foregone income-generating activity is inversely related to the slope of the tangent line to the Laffer curve. As we move down the Laffer curve and the slope of the tangent line increases, the cost of raising additional tax revenues declines because the loss of income per additional dollar of tax revenue declines.

How far down the Laffer curve should the government go by lowering corporate tax rates? One goal would be to equalize the marginal cost of raising tax revenues from all sources of tax revenue. This would minimize the total cost of raising a given amount of tax revenue for the government.

---

<sup>1</sup> An appendix describing the calculation of the revenue maximizing corporate income tax rates is available from the authors upon request. The calculations are based on estimates of tax base elasticities in Ferde and Dahlby (2016) except for Nova Scotia where the calculation of the corporate income tax rate that would equalize the marginal cost of public funds from the corporate and personal income taxes is based on the estimates in Dahlby and Ferde (2012).

Since it is difficult to calculate which tax rates would equalize the marginal cost of raising revenues across all tax bases, we have considered another goal—lowering the corporate income tax rate to the point that the marginal cost of raising tax revenue from the corporate tax equals the marginal cost of raising tax revenues from the personal income tax, with any reduction in tax revenue made up by increases in provincial sales taxes (from zero in the case of Alberta). By equalizing the marginal cost of raising revenues from the corporate and personal income taxes, governments would be lowering economic losses from corporate taxes while raising the same amount of total tax revenues.

Figure 1 shows the corporate tax rates that would achieve this goal by raising an amount of tax revenue denoted as  $R^*$ . In the case of Saskatchewan, equalizing the marginal cost of public funds of the corporate and personal income taxes could be achieved with corporate income tax rate of 3.3 per cent. Note that while this would have been an 8.7 percentage point tax cut in 2013, the loss of revenue and the necessary sales tax rate increase could be relatively small because Saskatchewan was on the downward sloping section of its Laffer curve in 2013. For the other smaller provinces, this policy would also involve significant cuts to corporate tax rates—from 16 per cent to 5.9 and 4.2 per cent in Nova Scotia and PEI, respectively, from 10 per cent to 2.7 per cent in New Brunswick, and from 14 per cent to 3.5 per cent in Newfoundland.

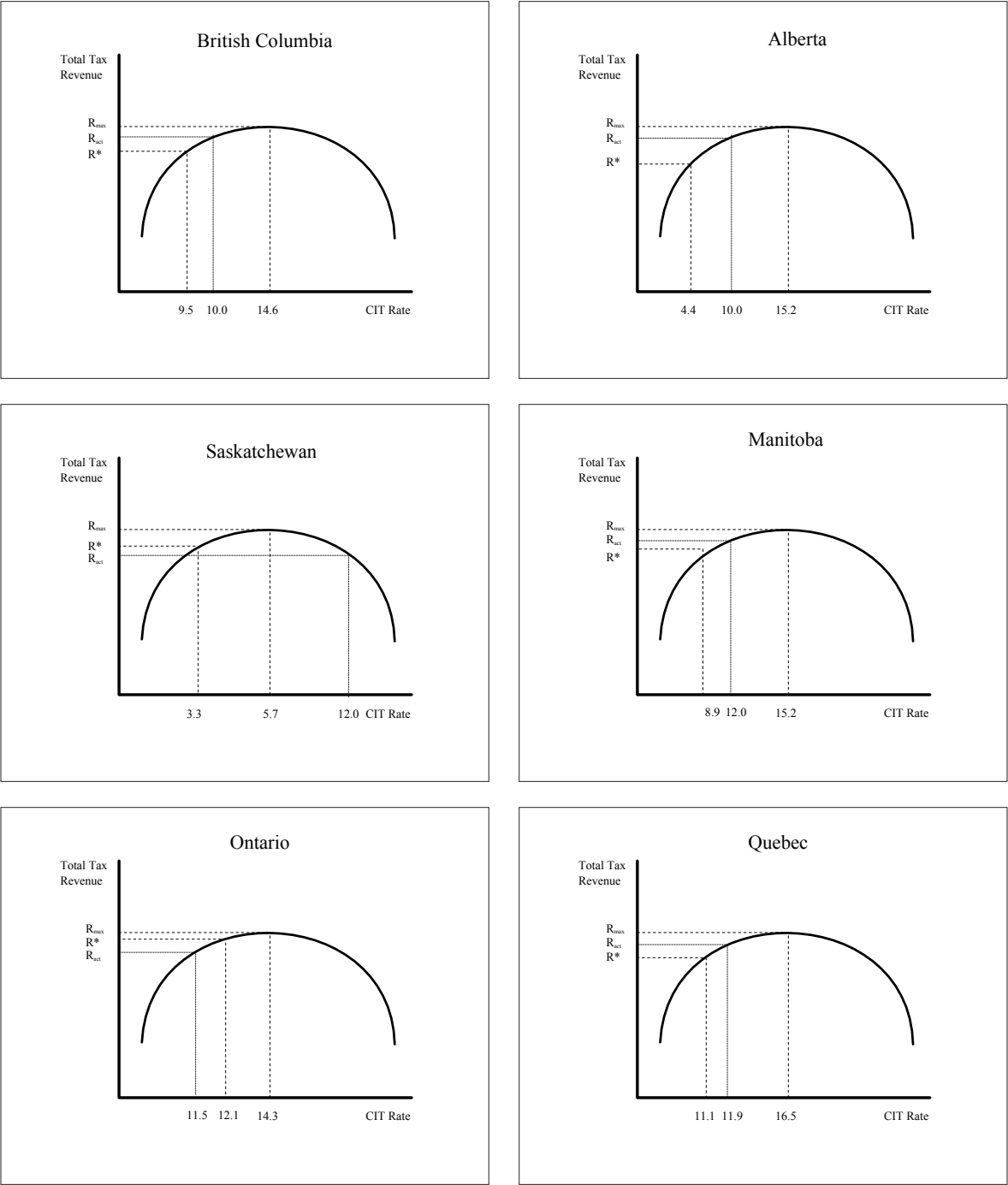
In the other five provinces, the corporate tax rate reductions would be more modest, especially in the case of Quebec, because the cost of raising personal income taxes in Quebec is high and therefore the marginal cost of raising revenue from the corporate income tax would still be high, although somewhat lower than the rate in 2013. Corporate tax reductions to equalize the marginal cost of public funds of the corporate and personal income taxes would also be required in Alberta, British Columbia and Manitoba. Only in Ontario would this policy not justify a corporate tax rate reduction because its marginal cost of public funds from the personal income tax in 2013 was 6.76, higher than the marginal cost of public funds from the corporate income tax, 5.21. Therefore in Ontario, the priority for tax reform is lower the personal income tax rates.

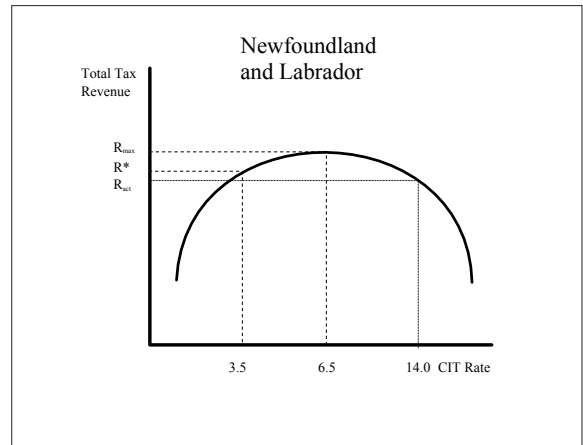
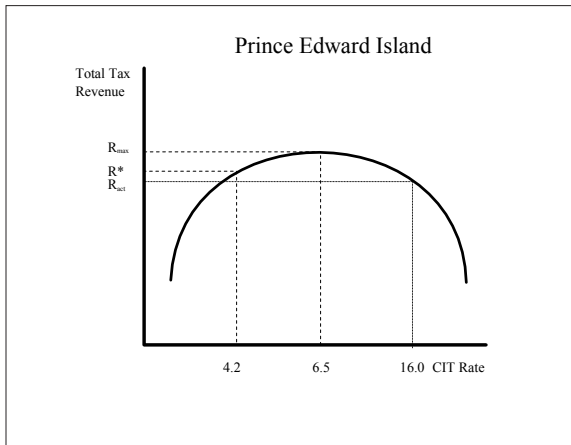
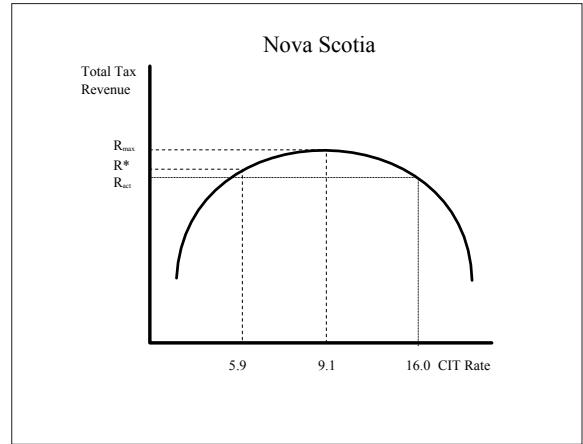
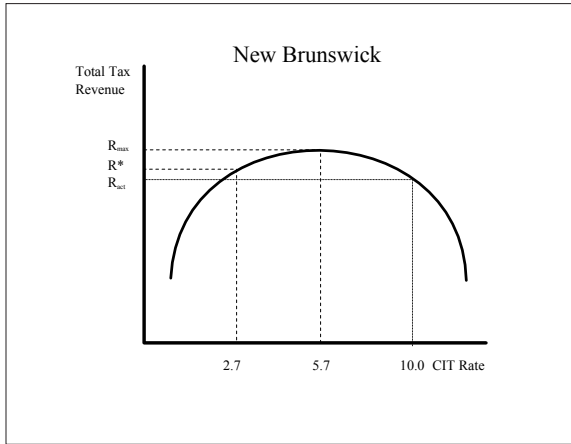
The corporate tax rate cut consistent with equalizing the marginal cost of raising revenues from the corporate and personal income taxes in 2013 in Alberta would have been relatively large—the marginal cost of raising personal income taxes was only 1.41 because the province had a relatively low 10 per cent marginal personal income tax rate. A large corporate income tax rate cut would have been necessary in 2013 to lower the marginal cost of raising revenue from the corporate income tax to this level. Since the election of the Notley government and the increases in the top personal income tax rate to 15 per cent and the corporate tax rate to 12 per cent, the marginal cost of public funds from the corporate tax has increased to 3.79 in 2016 from 2.91 in 2013. The corporate tax rate that would equalize the marginal cost of public funds from the corporate and personal income taxes has increased to 7.1 per cent because of the increase in the marginal cost of funds from the personal income tax to 1.71 from 1.41 in 2013.

Of course, it is not hard to see why politicians may feel political pressure to raise tax rates on corporations rather than reduce them because corporations do not vote and the negative impact that higher corporate tax rates have on the voters' standard of living is not directly observed, although well documented in econometric studies. But, while taxing corporations

may be popular, our economic research indicates that if the goal is to create greater economic opportunities for Canadians, the provincial governments should lower provincial corporate tax rates and replaced any losses of revenue with higher sales taxes. As politically contentious as it may be, the provincial budgets in 2016 should lower the tax burden on corporations and replace those revenues with higher sales taxes.

**FIGURE 1 LAFFER CURVES FOR THE PROVINCIAL CORPORATE INCOME TAX IN 2013**





## REFERENCES

Dahlby, B. and E. Ferede “The Effects of Tax Rate Changes on Tax Bases and the Marginal Cost of Public Funds for Canadian Provincial Governments” *International Tax and Public Finance* (2012) 19: 844–883.

Ferede, E. and B. Dahlby “The Costliest Tax of All: Raising Revenue through Corporate Tax Hikes can be Counter-Productive for the Provinces” School of Public Policy Research Paper, vol 9 no 11, 2016.



# THE SCHOOL OF PUBLIC POLICY

## About the Authors

**Ergete Ferede** is currently an associate professor of Economics at Grant MacEwan University and Fellow of the Institute of Public Economics at the 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 the *National Tax Journal*, *International Tax and Public Finance*, *Small Business Economics*, etc. He previously taught a wide range of courses at Addis Ababa University, the University of Alberta and the University of Windsor. He was a winner of the University of Windsor Teaching Score Award for the academic year 2005/6.

**Bev Dahlby**, 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 and Mexico. 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 on Canada's Ecofiscal Commission.