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SIMULATING THE GROWTH EFFECTS OF THE CORPORATE INCOME TAX RATE CUTS IN ALBERTA

Bev Dahlby and Ergete Ferede

SUMMARY

Shortly after its election in May 2019, the new Alberta government began fulfilling its promise to reduce the provincial corporate income tax (CIT) rate. The rate cut began in July 2019, when the government dropped the CIT rate from 12 to 11 per cent. The rate is scheduled to decline to 10 per cent on Jan. 1, 2020, followed by further one-percentage-point reductions in 2021 and 2022, bring the Alberta CIT rate down to eight per cent in 2022

This communiqué uses the authors' research into the long term impacts of the provincial CIT reductions to project the impact of the tax rate cuts on the Alberta economy. The authors' econometric model indicates that the series of rate cuts will boost the Alberta economy's growth rate, and real per capita GDP will be 2.5 per cent higher in 2022 and 6.5 per cent in 2029, with an increase in employment totalling approximately 58,000 in 2022 and 172,000 by 2029.

These results are consistent with the projections from a 2012 study by the same authors that also found a CIT rate cut would increase provincial growth rates. That study used a different data set, time period and different methodology, but its findings are consistent with the outcome of the latest research model.

Skeptics may point out that a four-percentage-point reduction in the CIT will cause a drop in annual total tax revenues. However, the resulting expansion of the province's economy and corporate tax base will offset to some degree the decline in the tax rate. In the long-run, the drop in revenue is actually small when considered in the context of the province's 2018-2019 deficit of $6.7 billion. Cutting the CIT is a smart move that will prove highly beneficial to Alberta's economy, including employment prospects, over the next decade.
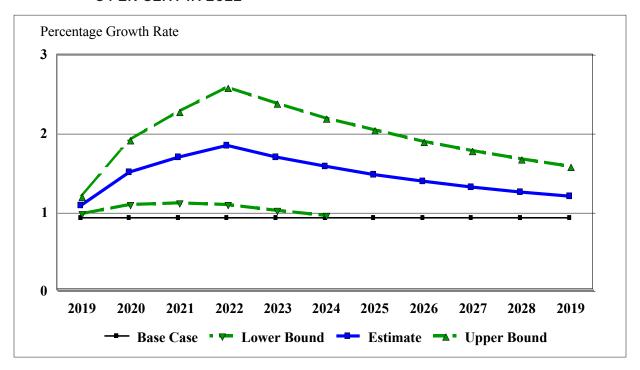
INTRODUCTION

In this communiqué, we use the results from the econometric model in Ferede and Dahlby (2019) to simulate the growth effects of the recently announced reduction in the corporate income tax (CIT) rate in Alberta. In May 2019, the newly elected government of Alberta announced that it would fulfil its election platform commitment of reducing the provincial general statutory CIT rate from 12 per cent to 11 per cent on July 1, 2019, and then to 10 per cent on Jan. 1, 2020, followed by further one-percentage-point reductions in 2021 and 2022. Thus, we model the impact of a sequence of provincial CIT rate reductions from 12 per cent in 2018 to eight per cent in 2022, holding the federal CIT rate constant at 15 per cent. Our simulation results indicate that the growth rate of real per capita GDP in Alberta would increase by 0.92 percentage points in 2022 and by 0.28 percentage points in 2029. This would translate into increases in real per capita GDP of 2.5 per cent in 2022 and 6.5 per cent in 2029 with employment increases of approximately 58,000 in 2022 and 172,000 by 2029.

The simulation exercise is conducted using the coefficient estimates reported by Ferede and Dahlby (2019) in column (5) of Table 2. The base case real per capita GDP growth rate is 0.925 per cent, the average projected growth rate of per capita real GDP from 2021 to 2024 in the government of Alberta's 2018-2019 third quarter fiscal update. It is assumed that the CIT rate cut in 2019 has only a small impact on the 2019 growth rate because the tax cut is in effect for only half the year and many investment plans for 2019 would have been made in advance of the announcement of the tax cut.

In Figure 1, the blue solid line is the simulated growth rates from 2019 to 2029 with the sequence of tax cuts. The model indicates that the growth rate of real per capita GDP would increase by 0.92 percentage points, compared to the base case, peak at 1.84 per cent in 2022, and then decline over time to a base case growth rate of 0.95 per cent. We have used the variances and covariance of the parameter estimates to approximate the 95 per cent confidence interval for the simulated growth rates. The dashed lines show the upper and lower bounds for the 95 per cent confidence interval for the simulated growth rates with the tax cuts. Although bounds of the 95 per cent confidence interval are wide, ranging from 2.59 per cent to 1.10 per cent in 2022, the confidence interval indicates that the tax cut will increase Alberta's growth rate with a high degree of probability.

Our previous study (Ferede and Dahlby 2012), published in the *National Tax Journal* (NTJ), also found that a CIT rate cut would increase provincial growth rates. That study used a different data set, a different time period and alternative empirical methodology. It is therefore interesting to compare the simulation results using the NTJ 2012 model results with the simulation results using the parameter estimates in Ferede and Dahlby (2019). This comparison will indicate whether the simulation results of the adverse effects of the corporate income tax rate on economic growth are robust to alternative data set, time period and empirical methodology.

Figure 2 shows that the two models produce very similar simulations of the growth rates with the CIT rate cuts, with the Ferede and Dahlby (2019) model yielding slightly higher growth rates in the 2019 to 2023 period than the NTJ 2012 model, but with a steeper decline in the growth rate. Note that both models have the property that the growth rates return to the base case growth rate over time as the economy adjusts itself to its long-run equilibrium.

FIGURE 2   SIMULATIONS OF REAL PER CAPITA GDP GROWTH RATES WITH A RE-DUCTION IN THE CIT RATE TO 8 PER CENT IN 2022
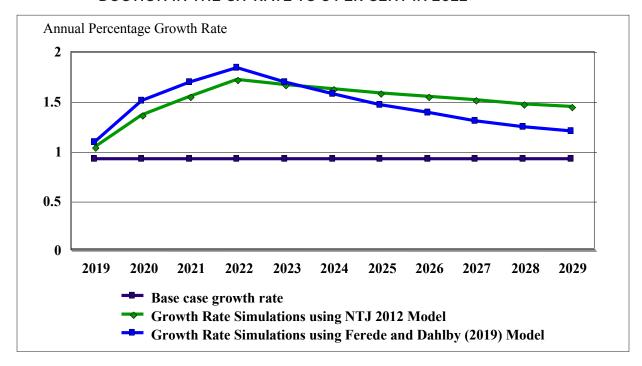
Annual Percentage Growth Rate

- Base case growth rate
- Growth Rate Simulations using NTJ 2012 Model
- Growth Rate Simulations using Ferede and Dahlby (2019) Model

FIGURE 3   INDICES OF REAL PER CAPITA GDP WITH A REDUCTION IN THE CIT RATE TO 8 PER CENT IN 2022 (2018 = 100)

- Base Case
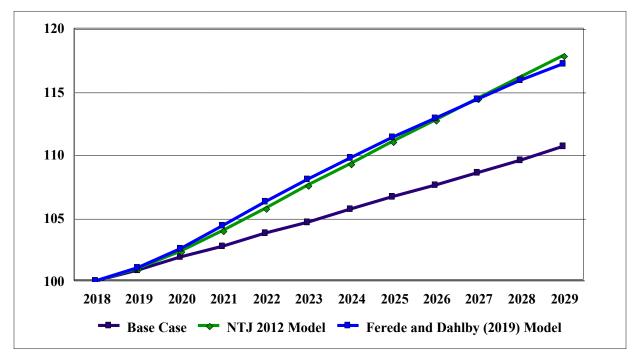- NTJ 2012 Model
- Ferede and Dahlby (2019) Model

Figure 3 shows the simulated increase in real per capita GDP in the years after the tax cuts and in the baseline case. The Ferede and Dahlby (2019) model and the NTJ 2012 model produced similar results, with real per capita GDP 6.5 and 7.2 per cent higher than in the

base case by 2029. Therefore, both models predict a significant increase in the per capita output of the Alberta economy as a result of the corporate income tax reductions.

While the stimulated increase in real GDP per capita from the CIT rate cuts is a measure of the improvement in the economic well-being of Albertans, public attention is focused on the potential increase in employment. Ferede and Dahlby (2019) did not estimate a regression model of the effect of CIT on employment. However, the increase in total employment in Alberta from the CIT rate cuts can be approximated by using the average number of employees per million dollars of GDP, measured in 2007 prices, in Alberta, over the period 2001 to 2016 and medium growth rate population projects from Statistics Canada Table 17-10-0057-01. That calculation puts the increase in employment at 58,000 (a 2.4-per-cent increase) in 2022 and 172,000 (a 5.9-per-cent increase) in 2029. These calculations of the implied employment increases are an alternative measure of the substantive economic impact of the CIT rate reductions the Alberta government announced in 2019.

Concern has been expressed about the wisdom of cutting the CIT rate, with the consequent reduction in tax revenues, in light of Alberta's large fiscal deficit. However, two points should be made concerning the impact of the CIT tax cuts on the deficit. The first is that estimates of the reduction in tax revenues should take into account the impact of the tax cuts on the increase in economic activity in the province, the consequent growth of the CIT base, and the additional tax revenues the increase of the CIT base will generate. In Dahlby and Ferede (2018), we have estimated the responsiveness of the corporate and personal income tax bases in the province to changes in the CIT rate. Using the estimated semi-elasticities of these tax bases with respect to the CIT rate, the four-percentage-point reduction is estimated to reduce total tax revenues by about $350 million per year in the long run. This reduction in long-run total revenues is only 25 per cent of the so-called "mechanical effect", which is the revenue loss calculated from multiplying the tax rate reduction by the average CIT revenue per tax point. Thus, the expansion of the economy and the corporate tax base substantially offsets the loss of tax revenue in the long run from the CIT rate cut. While a $350-million reduction in revenues is significant, it is small in the context of the $6.7 billion 2018-2019 deficit. Furthermore, the corporate income tax revenues are "high cost" sources of revenue because they reduce the income-generating opportunities for Albertans by reducing corporate investment and employment. Cutting the corporate tax rate, even though there is an urgent need to reduce the provincial fiscal deficit, is justified in our view because of the positive impact on economic growth and employment opportunities for Albertans.

REFERENCES

Dahlby, B., and E. Ferede. 2018. "The Marginal Cost of Public Funds and the Laffer Curve: Evidence from the Canadian Provinces." *Public Finance Analysis (FinanzArchiv)*, 74(2): 173-199.

Ferede, E., and B. Dahlby. 2012. "The Impact of Tax Cuts on Economic Growth: Evidence from the Canadian Provinces." *National Tax Journal*, 65(3), 563-594.

Ferede, E., and B. Dahlby. 2019. "The Effect of Corporate Income Tax on the Economic Growth Rates of the Canadian Provinces." *SPP Technical Paper.*

Government of Alberta. 2019. 2018-19 Third Quarter Fiscal Update and Economic Statement. Available at: https://open.alberta.ca/dataset/9c81a5a7-cdf1-49ad-a923-d1ecb42944e4/resource/a0f104f4-75a6-4d7e-8e52-dbad812c3941/download/2018-19-3rd-quarter-report-fiscal-update.pdf.

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Bev Dahlby, Distinguished Fellow at the University of Calgary's School of Public Policy, attended St. Peter's College, the University of Saskatchewan, Queen's University and the London School of Economics. He is also the Research Director as well as the Director of the Tax and Economic Growth program at The School. Dr. Dahlby has published extensively on tax policy and fiscal federalism.

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