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ALLOCATING TAXABLE INCOME FOR PROVINCIAL CORPORATE INCOME TAXATION IN CANADA, 2015-2017: PRACTICE AND ANALYSIS

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SUMMARY

Canada has used the same two-factor formula with a 50-50 weighting for the allocation of taxable income between provinces for 61 years. The intra-country formula allocation (FA) was developed when natural resource extraction and manufacturing were more important in economic activity than now. The FA thus may need to be updated to reflect a changing 21st century economy.

Canadian provinces set their own tax rates, while most use the Canada Revenue Agency (CRA) to collect corporate income tax (CIT). This paper examines the differences in the provinces' CIT rates for some recent years, and what might happen if the formula were changed, particularly when companies operating in more than one jurisdiction pay taxes according to varying provincial rates.

Businesses operating in more than one jurisdiction accounted for an average share of total revenue of 42 per cent in 2014-2016. In 2011, there were 23,810 such businesses in Canada, making up 2.3 per cent of the total number of businesses and 43.4 per cent of all employees. If a business operates in several provinces, then provincial governments split the taxable corporate income using the FA mechanism. There are 10 rules for the mechanism, depending on specific business sectors.

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A new formula could be based on one of three that U.S. states use. These include: a 100 per cent sales formula; a three-factor equal-weights formula; or a three-factor formula with double-weighted sales.

Modelling all three American formulas shows that the largest change is associated with the equal-weights three-factor version with a change of 12.8 percentage points. The smallest change is associated with the version that is based on 100 per cent sales. The three-factor formula with a double weight for sales yields a change of 7.5 percentage points.

The best formula should yield a distribution similar to that which would prevail if profits of multi-jurisdictional firms were observable at the provincial level. The lack of data, however, has created a situation in which the ideal is known but not observable.

The U.S. allows individual states to set their own FAs. However, a single formula agreed upon by all 10 provinces is more advantageous. It reduces the opportunity for provinces to engage in tax-competition behaviour because it removes one tool they could use. It reduces the burden of compliance costs on businesses. It also facilitates the computation of equalization entitlements.

Adopting an American-style FA system offers Canada no benefits and most likely greater costs. Adding a third factor into the computation requires more data than using one or two factors and thus increases compliance costs.

Nor would changing the FA rules address the regulation of digital businesses with staff or freelancers all over the world. Another issue is that the rules apply only at the affiliate level within groups of related companies. A business can avoid FA by incorporating a separate affiliate in any province in which it does business. Interprovincial flows of good and services then become transactions between separate entities. This requires establishing transfer prices, again increasing compliance costs, but it would be worthwhile for a sufficiently large reduction in taxes paid.

FA also interacts with equalization as provinces use it to set taxable income rates. Moving taxable income around has no major effect on provinces that receive equalization, since gains and losses will be largely offset by changes in equalization payments. However, it will matter for provinces that don't receive equalization, and it could well increase the federal government's burden of equalization.

Any change to the FA will require careful study and a lot of compromise to establish a model as close to the ideal as possible.

INTRODUCTION

Canadian provinces (and territories) have a large degree of autonomy when compared to most other federations in taxing corporate profits. In particular, they have set their own rates, with most of them using the Canada Revenue Agency's (CRA) services to collect the corporate income tax (CIT). Consequently, corporate taxable income of multi-jurisdictional taxpayers must be allocated between them; this is done with a formula put in place in 1947.[1] This brief paper first presents evidence on the importance of multi-jurisdictional activity and differences in provincial CIT rates in Canada for recent years. It then presents the formula apportionment (FA) rules, including the 10 sets of allocators and the evidence on the allocation of taxable income across provinces for the general rule and fragmentary information for some specific formulas. We then examine the outcomes associated with three possible changes in FA parameters and finally conclude with a discussion of policy implications.

IMPORTANCE OF MULTI-JURISDICTIONAL ACTIVITY AND DIFFERENCES IN PROVINCIAL CIT RATES IN CANADA

The need for FA increases with the importance of multi-jurisdiction enterprises (MJEs) and of differences in provincial CIT rates. We examine each issue in turn.

IMPORTANCE OF MJES

Rollin (2014) finds that in 2011, the 23,810 multi-provincial businesses active in Canada account for 2.3 per cent of the number of businesses and 43.4 per cent of all employees. Using taxation statistics for the period 2014-2016, we find that MJEs account for an average share of total revenue of 42 per cent and of net income (loss) of 34 per cent (CRA 2019a). Net income of MJEs is $189 billion in 2016 while $394 billion is associated with single-jurisdiction enterprises. Thus, one can see that MJEs matter in Canada with respect to the CIT base.

DIFFERENCES IN PROVINCIAL CIT RATES

Table 1 shows general CIT rates for three recent years. It shows some differences between provincial general CIT rates but with a drop in differences over time. In 2018, the highest rate of 16 per cent is 40 per cent higher than the lowest rate of 11.5 per cent. Thus, the CIT paid by MJEs will vary according to where profits are taxable and the FA rules presented next may matter.

1 For more on the history of this formula in Canada, see part 2 of Smart and Vaillancourt (2020).

TABLE 1: GENERAL CORPORATE INCOME TAX RATE (%) BY PROVINCES, CANADA, 2010, 2016 AND 2018

	2010	2016	2018
NFL	14	15	15
PEI	16	16	16
NS	16	16	16
NB	11	14	14
QC	11.9	11.9	11.7
ON	14	11.5	11.5
MB	12	12	12
SK	12	12	12
AB	10	12	12
BC	10.5	11	12
Range (maximum rate minus minimum rate)	5.5	5	4.5

Sources: 2010: Department of Finance, Canada, Interprovincial Tax Planning by Corporate Groups in Canada: A Review of the Evidence, in Tax Expenditures and Evaluations 2014 2015, t71, 88, Table A1, 88 (2015); 2016: Accessed August 6, 2019. https://www.taxtips.ca/smallbusiness/corporatetax/corporate-tax-rates-2016.htm; 2018: BDO, 2018 Corporate Income Tax Rates (June 21, 2018).

FORMULA APPORTIONMENT RULES

The formula is specified in section 400 of the Income Tax Regulations, entitled "Taxable Income Earned in a Province by a Corporation." It relies on the presence of a permanent establishment to identify provinces entitled or not to levy a tax on a share of taxable income. More precisely:

> 402 (1) Where, in a taxation year, a corporation had a permanent establishment in a particular province and had no permanent establishment outside that province, the whole of its taxable income for the year shall be deemed to have been earned therein.
>
> 402 (2) Where, in a taxation year, a corporation had no permanent establishment in a particular province, no part of its taxable income for the year shall be deemed to have been earned therein.

The presence of a permanent establishment relies on factors set out in section 400(2), such as the presence of "substantial machinery" or the ownership of land in a particular jurisdiction. How is the income allocated between eligible provinces? Table 2 summarizes one general rule and nine sectoral rules.The weight of each item is indicated next to it in the table.

TABLE 2: FORMULA APPORTIONMENT RULES, CANADA, 2019, GENERAL AND SECTORAL

Sector	Item 1	Item 2
General	Wages and salaries -50%	Gross income (sales)-50%
Insurance corporations	Net premiums-100%	--
Chartered banks	Wages and salaries-1/3	Loans and deposits-2/3
Trusts and loans	Gross income-100%	--
Railways	Equated track miles-50%	Gross-tonne miles loaded-50%
Airlines	Capital cost of all fixed assets except aircraft-25%	Revenue plane-miles flown in each province-75%
Grain elevators	Wages and salaries -50%	Number of bushels received-50%
Bus and truck operators	Wages and salaries -50%	Kilometres driven-50%
Ship operators	Port-call-tonnage for allocable income: 100%; wages and salaries for excess income:100%	
Pipeline operators	Pipeline miles-50%	Wages and salaries -50%

Source: *Income Tax Act*, regulations Part IV: "Taxable Income Earned in a Province by a Corporation," paragraphs 402-411. Accessed September 9, 2019. https://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._945/index.html.

Note: The sectoral rules are presented as ordered in the regulations.

FORMULA APPORTIONMENT: ALLOCATORS FOR 2015-2017

How economically important are each of the 10 rules presented in Table 2? Data for 2015, 2016 and 2017 provided by the CRA (2019b) show that the general rule applies to 88 per cent of the total revenue of FA users for the 2015-2017 period. The second largest sector is banking, with six per cent of revenue. Thus, focusing on the general formula is appropriate but also necessary given that confidentiality constraints make it difficult to examine most sectoral allocators. We thus present the distribution of wages and salaries and total revenues between territorial entities (TEs) for the general formula in appendix Table A-1 by year and as an average of the three years in columns 1-3 of Table 3. Columns 1 and 2 are the building blocks for column 3, which is used to allocate taxable income between provinces. Columns 4 and 5 show the distribution of profits and of GDP between the provinces.

TABLE 3: FORMULA APPORTIONMENT, CANADA, 2015-2017 AVERAGE VALUES, GENERAL FORMULA

	Wages and salaries	Gross Revenues	% used to assign taxable income to provinces	GDP	Gross operating surplus
	%	%			
	(1)	(2)	(3)	(4)	(5)
Newfoundland and Labrador	1.16%	1.24%	1.20%	1.56%	1.94%
PEI	0.26%	0.23%	0.24%	0.31%	0.28%
Nova Scotia	1.86%	1.95%	1.91%	2.05%	1.58%
New Brunswick	1.28%	1.56%	1.42%	1.69%	1.59%
Quebec	15.26%	17.58%	16.42%	19.71%	18.47%
Ontario	40.36%	39.89%	40.13%	39.04%	37.63%
Manitoba	3.21%	3.17%	3.19%	3.32%	3.17%
Saskatchewan	3.35%	4.24%	3.79%	3.74%	5.23%
Alberta	20.47%	18.94%	19.71%	15.02%	18.01%
British Columbia	12.05%	10.35%	11.20%	13.03%	11.51%
Territories+Outside Canada	0.57%	0.86%	0.71%		

Source: Calculations by authors.

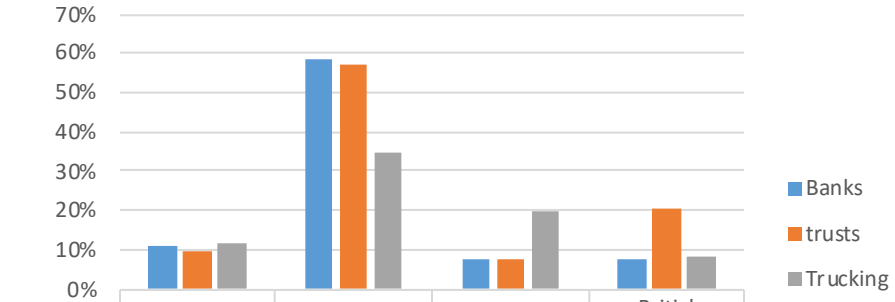
Columns 1, 2 3: Special tabulation, Canada Revenue Agency, received August 9, 2019

Columns 4, 5: Statistics Canada, Table 36-10-0221-01, 2016 “Gross Domestic Product, Income-Based, Provincial and Territorial, Annual (x 1,000,000).” Updated numbers accessed January 21, 2021.

Notes: The general formula is governed by regulation 402. Newfoundland and Labrador and Nova Scotia include the offshore amounts. The three territories are merged with the outside Canada category. We averaged the three annual dollar figures to calculate these percentages. When a figure was missing, we used the average of the two other years to replace it in our calculations.

Fragmentary data for specific sectors[2] allow us to produce Figure 1 and to note the following points:

FIGURE 1: ALLOCATION OF PROFITS, THREE SECTORS/FOUR PROVINCES, 2015-2017 AVERAGE



	Quebec	Ontario	Alberta	British Columbia
Banks	11%	59%	8%	8%
trusts	9.4%	57.3%	7.3%	20.1%
Trucking	11.5%	34.9%	19.8%	8.4%

Source: Calculations by the authors using CRA data as in Table 1.

- The high concentration of trust and banking activities in Ontario, explained in part by the concentration of financial head offices in that province and by the importance of credit unions (Desjardins) in the Quebec financial sector;
- The importance of trucking in Alberta and trusts in B.C.

FORMULA APPORTIONMENT USING AMERICAN FORMULAS

The choice of a two-factor formula with a 50-50 weighting goes back to 1947; it was first adopted by seven provinces out of nine, but by 1960 had been adopted by all 10 provinces (Smith 1976). Whether this is the proper formula in terms of the number of components, the choice of the components used and the weights given to them has not been studied in depth in Canada. Thirsk (1980) addressed the issue of FA, noting that the formula used does not find its roots in either the ability to pay principle or the benefits principle of taxation but rather aims to minimize conflicts between provinces and to ensure simplicity in administration. And the Mintz committee suggested that "the corporate allocation formula should be updated to reflect new business practices, with particular attention to investment income, investment companies and services" (Department of Finance 1997).

The American experience is one possible source of a different FA system for Canada. In 2019, 25 states use only sales in their FA while 17 use a triple-factor formula (payroll, property and sales) with 10 double-weighting sales and seven

2 Mainly due to confidentiality issues, given that in some sectors a few large firms dominate.

applying equal weights to all three factors. The remainder have no CIT or use another formula (Lohman 2012; Federation of Tax Administrators 2019). Another possible source is the European Commission's ongoing work, which also uses a three-factor formula with a two-part indicator for labour — half payroll and half number of employees. The European parliament endorsed a three-factor formula but with weights of 45 per cent for each of assets and labour and 10 per cent for sales (Weiner 2020).

Table 4 thus compares the outcomes of moving from the two-factor equal-weights formula to three formulas inspired by the American approach. These are:

- A 100 per cent sales formula;
- A three-factor equal-weights formula;
- A three-factor formula with double-weighted sales.

We focus on the American formulas for two reasons. First, they are currently in use while the European formulas will perhaps be used in the future. Second, Canada and the U.S. are both long-lived federal countries with highly autonomous provinces and states. Smart and Vaillancourt (2020) report results of simulating the European formulas.

To produce columns 2-4 of Table 4, we use not only MJEs' data from CRA but all firm data from Statistics Canada since the relevant MJE data are not available. This leads to approximations of the true outcome. The assets data are for non-residential, non-governmental gross assets averaged over 2015 to 2017. We compare in columns 5-7 — in terms of differences in shares of tax base — the three possible formulas to the existing one (column 1).We can assess the importance of the changes between the existing distribution and the three others by summing the absolute value of changes. We find that the largest change is associated with the equal-weights three-factor formula (2) with a change of 12.8 percentage points and the smallest change with the 100 per cent sales (4)-3,7 percentage points. The three-factor formula with a double weight for sales (4) yields a change of 7.5 percentage points. Overall, adding assets to the formula is an important driver of change. The main winner from such a change would be Alberta and the main loser Ontario.

TABLE 4: SIMULATION OF VARIOUS ALLOCATION FORMULAS, CORPORATE PROFITS, ALL FIRMS, CANADA, 10 PROVINCES, 2015-2017

Allocators\ provinces	Current formula 1	Three factors weights equal 2	Three factors doubled sales weight 3	One factor 100% Sales 4	2)-1) 5	3)-1) 6	4)-1) 7
NFL	1.20%	1.69%	1.51%	1.24%	0.49%	0.31%	0.04%
PEI	0.24%	0.22%	0.22%	0.23%	-0.02%	-0.02%	-0.02%
NS	1.91%	1.83%	1.88%	1.95%	-0.07%	-0.03%	0.05%
NB	1.42%	1.40%	1.47%	1.56%	-0.02%	0.04%	0.14%
QC	16.42%	15.58%	16.38%	17.58%	-0.84%	-0.04%	1.16%
ON	40.13%	34.70%	36.77%	39.89%	-5.43%	-3.35%	-0.23%
MB	3.19%	3.10%	3.13%	3.17%	-0.08%	-0.06%	-0.02%
SK	3.79%	4.65%	4.48%	4.24%	0.85%	0.69%	0.44%
AB	19.71%	24.62%	22.35%	18.94%	4.91%	2.64%	-0.76%
BC	11.20%	11.25%	10.89%	10.35%	0.05%	-0.31%	-0.85%

Source: Calculations by the authors using data from tables 3 and A-2. Columns may not sum to 100 per cent due to rounding and omission of territories.

POLICY IMPLICATIONS AND CONCLUSION

The results presented in Table 4 indicate that different FA formulas can yield different distributions of taxable profits. Which is preferable or ideal? The answer is the one that most correctly allocates profits between provinces; that is, the one that yields a distribution similar to the one that would prevail if profits of MJES were indeed observable at the provincial level. We have no data that allow us to compare the true distribution and those generated by one or the other formula. Thus, while the ideal is known, it is currently unobservable; perhaps big data analytics could be used to yield some relevant information but this is uncertain. Or the federal government could develop a set of rules to be used by MJEs in calculating profits for each establishment and add them up by province. This would add to the compliance burden associated with the corporate income tax in Canada.

One could ask: Why not move to a multi-FA approach where each state chooses its FA rules? However, using a single FA formula agreed to by the 10 provinces:

1. Reduces the possibility for provinces to engage in tax competition behaviour by taking away one tool they could use;
2. Reduces the compliance cost burden on MJEs;
3. Facilitates the computation of equalization entitlements.

There are thus no benefits and most likely costs to going the American way. But can one say if one of the various formulas is preferable to attain the three

results listed above? The answer is no, except that adding a third factor in the computation requires more data than using one or two factors and thus increases compliance costs.

Having raised the issue of the components of the FA, one should note that changing this would not address other issues associated with the use of FA. A first issue upon which the entire logic rests is that of permanent establishment; FA applies to MJEs that are so defined because they have a permanent establishment in more than one relevant tax jurisdiction. But while this applies reasonably well to items listed in the regulations (an office, a branch, a mine, an oil well, a farm, a timberland, a factory, a workshop or a warehouse), what is a permanent establishment for a provider of internet services that hires freelancers all over the world, with said freelancers working from their homes? Perhaps one needs to rethink the reliance of FA on this concept along the line of ongoing work with respect to inter-country allocation of profits. Indeed, should new international rules adopted by Canada apply as well to interprovincial allocation of profits? Currently, it is not clear that policy-makers have jointly addressed these two issues.[3]

A second issue not addressed by changing the components of the FA is the fact that formulary apportionment applies to multi-province taxpayers since there is no group consolidation in the Canadian corporate tax system; thus, these rules apply only at the affiliate level within groups of related companies. Consequently, a taxpayer may avoid FA by incorporating a separate affiliate in any province in which it does business. Interprovincial flows of goods and services then become transactions between separate entities. This requires establishing transfer prices, which increases compliance costs but would be worthwhile for a sufficiently large reduction in taxes paid. Taxpayers can thus choose between a larger number of corporate entities or the application of FA.

Third, as McLure (2000) notes, allocation formulas convert FAs based on sales and payrolls effectively into provincial sales and payroll taxes (subsidies) for firms if a province has a higher (lower) corporate tax rate than other provinces in which it has permanent establishments. Thus, the choice of factors for an FA should be made taking this into account.

Fourth, FA interacts with equalization as provinces use it to set taxable income. Moving taxable income around is of little consequence to equalization-receiving provinces since gains and losses will be pretty much offset by changes in equalization payments. But for provinces that don't receive equalization, this will matter, and it may well increase the federal government's burden of equalization.

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3 This may require changes to the rules (Section 402.4) as to how foreign sales are allocated to provinces. Presently, it is a combination of the location of the seller (if the person negotiating the sale may reasonably be regarded as being attached to the permanent establishment in the particular province or country) and shares of wages (Justice Laws Website n.d.).

The use of a formula allocation to share tax bases is an under-studied dimension of fiscal federalism in Canada, since the 10 provinces settled on the existing formula in 1960. This paper presents simulations which show that including assets could change the interprovincial distribution of CIT revenues for MJEs. Further work is needed to examine if such a change improves the tax regime in Canada, or not, either as a stand-alone analysis or as part of a comprehensive re-examination of tax policy in Canada.

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APPENDIX TABLES

TABLE A-1: ANNUAL DATA, GENERAL FORMULA TWO ALLOCATORS, MJES' PROFITS, CANADA 2015, 2016, 2017

	Total Salaries and Wages (W&S) %			Total Revenue (Rev) %		
	2015	2016	2017	2015	2016	2017
	(1)	(2)	(3)	(4)	(5)	(6)
Newfoundland and Labrador	1.15	1.08	1.07	1.08	1.08	0.99
Newfoundland and Labrador Offshore	0.08	0.05	0.05	-	0.22	0.16
- Prince Edward Island	0.24	0.26	0.27	0.22	0.24	0.22
Nova Scotia	1.84	1.81	1.92	1.91	2.01	1.89
Nova Scotia Offshore	-	-	-	-	0.02	0.00
New Brunswick	1.34	1.27	1.24	1.72	1.57	1.40
Quebec	14.68	16.00	15.08	17.73	17.25	17.76
Ontario	39.08	40.69	41.17	39.47	41.26	38.97
Manitoba	3.05	3.22	3.35	3.07	3.24	3.18
-Saskatchewan	3.49	3.23	3.35	4.17	4.13	4.41
- Alberta	22.75	20.00	18.92	19.25	17.90	19.66
- British Columbia	11.52	11.66	12.88	10.23	10.31	10.50
Yukon	-	-	-	0.06	0.06	0.06
Northwest Territories	0.16	0.18	0.15	0.13	0.11	0.16
Nunavut	-	-	-	-	0.05	0.07
Outside Canada	0.46	0.39	0.36	0.71	0.52	0.59
- Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: Special tabulation, Canada Revenue Agency, received August 9, 2019.

TABLE A-2. ASSETS (2015-2017) PROVINCIAL SHARES, CANADA

Province	Assets
NFL	2.68%
PEI	0.18%
NS	1.69%
NB	1.37%
QC	13.89%
ON	23.84%
MB	2.94%
SK	6.36%
AB	34.43%
BC	11.36%

Source: Calculations by the authors : Assets: Table 36-10-0096-01, "Flows and Stocks of Fixed Non-Residential Capital, by Industry and Type of Asset, Canada, Provinces and Territories (x 1,000,000); Employment Table 36-10-0489-01. Labour statistics consistent with the System of National Accounts (SNA), by job category and industry.

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