INCOME INEQUALITY IN CANADA FROM 1882 TO 2021: EVIDENCE FROM DISTRIBUTIONAL NATIONAL ACCOUNTS

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Dans l'article, nous estimons la distribution de l'ensemble du revenu national net au Canada de 1982 à 2021. Nous appliquons la méthodologie de décomposition des comptes nationaux pour tabuler les données de la Banque de données administratives longitudinales, en combinaison avec les comptes nationaux et des données d'enquête. Nos résultats descriptifs contribuent à une meilleure compréhension de l'inégalité des revenus au Canada au cours des 40 dernières années. Nous notons que les plus importantes parts du revenu publiées par Statistique Canada tendent à être sous-estimées comparativement aux plus importantes parts du revenu calculées par décomposition des comptes nationaux, parce que cette dernière méthode tient compte des personnes qui ne produisent pas de déclaration des revenus, ainsi que des revenus du capital non répartis par les entreprises. Comme l'ont noté de précédents travaux de recherche, l'inégalité des revenus au Canada a augmenté de façon significative de 1982 jusqu'au milieu des années 2000. Même si le revenu du travail a mené à une croissance initiale dans les plus importantes parts du revenu, c'est le revenu du capital qui a le plus contribué à cette croissance vers la fin de la période. Les plus importantes parts, selon les données d'imposition, ont été particulièrement sous-estimées au cours de la période, puisque les bénéfices non répartis avaient atteint un sommet. Depuis le milieu des années 2000, les plus importantes parts ont légèrement diminué et la part du revenu du 50 % inférieur a augmenté, sans toutefois atteindre de nouveau les niveaux observés au début des années 1980. Au cours de la pandémie, l'inégalité de revenus

après impôt a diminué en raison de l'importance des programmes de transfert temporaires mis en place. Cependant, l'inégalité du revenu avant impôt a augmenté en 2020, et encore plus en 2021, lorsque de nouveaux records ont été atteints en matière de bénéfices des entreprises.

Mots clés : inégalité de revenu, distribution, comptes nationales, travail, capitale, parts de revenus au sommet

In this article, we estimate the distribution of all net national income in Canada from 1982 to 2021. We apply distributional national accounts (DINA) methodology to tabulated data from the Longitudinal Administrative Databank, combined with national accounts and survey data. Our descriptive results contribute to a more thorough understanding of income inequality in Canada over the past 40 years. We find that top income shares published by Statistics Canada tend to be underestimated relative to top income shares calculated using DINA, because DINA account for people who do not file taxes and for undistributed capital income that is retained in corporations. In line with previous research, income inequality in Canada increased significantly from 1982 until the mid-2000s. Although labour income drove initial growth in top shares, toward the end of this period capital income contributed most to growth in top shares. Top shares based on tax data were especially underestimated during this period because retained earnings were at their highest. Since the mid-2000s, top shares have decreased slightly and the income share of the bottom 50 percent has increased, although they have not returned to the levels observed in the early 1980s. During the pandemic, post-tax income inequality fell because of the large temporary transfer programs that were introduced. However, pre-tax income inequality increased in 2020, and even more so in 2021 when record levels of corporate profits were reached.

Keywords: income inequality, distribution, national accounts, labour, capital, top shares

Introduction

Over the past decade, especially since publication of Piketty's (2014) *Capital in the Twenty-First Century*, there has been an explosion of research on income inequality. A topic previously left at the wayside by academic economists and policy-makers in North America has returned to the forefront of public attention. To have an informed public debate on this topic, one of the first prerequisites is to have reliable data to assess the extent of inequality. This need led researchers at the World Inequality Lab to develop distributional national accounts (DINA; Blanchet et al. 2021), a framework for producing reliable internationally comparable statistics about income distribution.

Conventional measures of income inequality, such as those publicly produced by Statistics Canada, rely on income concepts available in tax data. These have two major pitfalls that DINA address (e.g., Garbinti, Goupille-Lebret, and Piketty 2018; Piketty, Saez, and Zucman 2018). First, because the types of income reported in tax data are not aligned across countries, these statistics are difficult to compare internationally. Second, not all national income is reported in tax data. Most significantly, profits retained in corporations are not observed in personal income tax data, although they are included in national income. This income disproportionately accrues to high income earners, meaning traditional estimates of income inequality underestimate incomes at the top of the distribution. Furthermore, 10–12 percent of adults in Canada do not file tax returns at all (Robson and Schwartz 2020), and so their income is missing from traditional estimates.[1]

DINA rectify these problems by distributing all of net national income to individuals. This method requires making certain assumptions about unobserved income but ensures that the definition of income is comparable across countries and that untaxed forms of income and in-kind benefits are accounted for.

This article is a first attempt at developing internationally comparable DINA for Canada;[2] it discusses what insights DINA can provide as to the evolution of income inequality in Canada over the past 40 years. By necessity, we make significant assumptions and simplifications that we hope can be improved on in the future. After previewing our results, we discuss how our work builds on previous income inequality research in Canada. Then, we describe the methods used to develop DINA in Canada. Finally, we present our results and describe their contribution to the understanding of trends in inequality in Canada from 1982 to 2021.

Estimates of top income shares are slightly higher using DINA than using traditional measures of income. The underestimation is largest in the mid-2000s when the capital income share was at its peak, driven by increases in corporate retained earnings. Both pre-tax and post-tax income inequality increased significantly in Canada from

1982 through the mid-2000s. Since 2006, pre-tax top income shares have fallen and post-tax top income shares have fallen even further, reflecting increasing government redistribution. Despite this slight reversal, income inequality remains significantly higher than it was in the early 1980s. Average pre-tax income has increased by 20 percent for the bottom 50 percent since 1982, whereas it has quadrupled for the top 0.01 percent.

Measurement of Income Inequality in Canada

DINA aim to improve our understanding of who benefits from economic activity. Existing national accounts are taken as the benchmark, not because they are a perfect reflection of economic activity, but because they are the most systematic, consistent approach to its estimation that currently exists. Net national income is taken as a benchmark because it measures all the net resources generated by the residents of a country in a given time period. We distribute all net national income to residents to understand who has control over the resources generated in Canada.

Because the primary aim is to understand the control over resources rather than to measure the distribution of consumption, income is distributed to adult residents aged older than 20 years (the same population used by Saez and Veall 2005). The benchmark unit of observation is couples—income earned by spouses is summed and split equally among both spouses, although we also estimate the distribution for individuals. This facilitates international comparability because the definition of household varies significantly across countries.

Results are presented in the form of income shares. Unlike single-number summary measures of income inequality, income shares allow us to observe precisely where in the income distribution changes are occurring. We believe changes at the top of the distribution are especially important. The Gini coefficient, the most popular single-number summary of income inequality, is especially insensitive to changes at the very top of the distribution (Chu and Wang 2021; Osberg 2017).

Many studies have used income tax data to estimate income shares in Canada (e.g., Saez and Veall 2005; Veall 2012), and Statistics Canada now publishes income shares based on income tax data. However, only one article we are aware of (Wolfson et al. 2016) has attempted to assess how income not found on personal tax returns affects the income distribution. Wolfson et al. (2016) estimated the impact of allocating income earned by Canadian-controlled private corporations (CCPCs) to their owners on top income shares from 2001 to 2011. They found that the top 1 percent after-tax income share was 3.3 percentage points higher in 2011 when CCPC income was accounted for. DINA estimate the impact of allocating income retained not only by CCPCs but also by other private and publicly traded corporations to their owners. Given that retained earnings vary more from year to year than personal taxable income, the additional income distributed by DINA can change trends in top shares across years.

Income Inequality Trends in Canada

Similar to the trends observed in the United States, a significant body of evidence shows that Canada's income inequality, whether measured by top income shares or the Gini coefficient, increased greatly during the 1980s and 1990s (Fortin et al. 2012; Lajoie and Delorme 2023; Lemieux and Riddell 2015; Saez and Veall 2005; Veall 2012). However, although inequality continued increasing during the mid-2000s and fell during the financial crisis in both countries, traditional estimates show that inequality has remained relatively stable, or even decreased slightly, in Canada since 2009 (Lajoie and Delorme 2023), whereas it has continued increasing in the United States.

There are many competing explanations for the rise in inequality observed in the 1980s and 1990s, although less attention has been paid to the more recent observed decline in inequality since the financial crisis. Explanations for the increase in inequality in Canada have largely fallen into three groups: (a) educational and technological change, (b) policies and institutions, and (c) competition with the United States.

Skill-biased technological change was a popular explanation for rising inequality in Global North countries during the 1990s (e.g., Berman, Bound, and Machin 1998) but has since fallen out of favour because of its inability to explain differences in inequality trends across Global North countries and the extreme concentration of wage increases within the top 1 percent. Recent research suggests that although technological change has contributed to increasing the earnings of those with advanced degrees in Canada relative to those without a degree, this explains only a small proportion of the rise in inequality (Lemieux and Riddell 2015).

Instead, Fortin et al. (2012) emphasized the role of changes in institutions such as declining real minimum wages and unionization rates in contributing to rising inequality. Real minimum wages increased in most provinces during the 1980s and early 1990s but stagnated or declined between the mid-1990s and mid-2000s, when peak levels of inequality were reached. Real minimum wages have since increased again as inequality has declined (Galarneau and Fecteau 2014). Card, Lemieux, and Riddell (2004) found that declining unionization was correlated with increasing wage inequality in Canada, the United States, and the United Kingdom during the 1980s and 1990s.

Saez and Veall (2005) attributed a significant portion of the rise in inequality to the effects of the American labour market on the Canadian labour market. They showed that the rise in top incomes in Canada mirrored the rise in top incomes in the United States and that top earners were largely those with high labour incomes rather than those with high capital incomes. Although a complete assessment of the forces contributing to changes in inequality is beyond the scope of this article, our updated results shed new light on the contributions of labour and capital income to the growth in income inequality in Canada and its subsequent fall since the mid-2000s.

Methodology

In this section, we describe the methods used to estimate DINA for Canada. We develop estimates of the distribution of three different income concepts: pre-tax national income, post-tax national income, and post-tax disposable income. All incomes are in real 2022 dollars.

The main data source for all our estimates is the Longitudinal Administrative Databank (LAD), which contains a 20 percent sample of tax microdata for every year from 1982 to 2021. We obtained custom tabulations of the LAD from Statistics Canada that provide average incomes for several types of income for each percentile (plus the top 0.1 percent and top 0.01 percent) of the national equal-split[3] income distribution (we also compute DINA for individuals). The sorting variable is the LAD-defined market income plus Employment Insurance (EI) and Quebec/Canada Pension Plan (Q/CPP) income minus EI and Q/CPP contributions, designed to closely align with the DINA concept of pre-tax post-replacement fiscal income. Within each percentile, we observe several types of income, including employment income, several government transfers, capital gains, dividends, and self-employment income, as well as payroll and income taxes paid.

Summary statistics of income inequality based on the LAD (using individuals as the unit instead of equal-split adults) are directly available from Statistics Canada (2024a). The first step in transforming these data into DINA is to adjust the population to include all Canadian residents aged 20 years and older.[4] The LAD includes people of all ages who filed their taxes plus a small number of non-filers who have a social insurance number and some link to the tax system. Thus, we first remove tax filers aged younger than 20 years from the database. We observe the location in the income distribution of tax filers aged younger than 25. Because 33.1 percent of these tax filers are aged younger than 20 years (Robson and Schwartz 2020), we remove 33.1 percent of the tax filers aged younger than 25 years from the database.

Next, we need to add all those aged older than 20 years not visible in the LAD so that all residents older than age 20 are represented in the data. We compare the number of tax filers in the data with population estimates from Statistics Canada. The proportion of people aged 20 years and older observed in the LAD rose during the 1980s and early 1990s. This likely reflects an increase in tax filing as tax credits based on tax filing were introduced and the increased length of time the LAD has been available, making the observation of current-year non-filers more likely. In 1982, 87.5 percent of the population aged 20 years and older are observed, with the percentage increasing to 96.1 in 1994. This proportion has remained relatively stable ever since, ranging from 95 percent to 97.3 percent each year, until a small dip during the COVID-19 pandemic. In 2021, 94.8 percent of residents aged 20 years and older are observed.

We impute non-filers to the distribution on the basis of the income distribution of non-filers obtained by Robson and Schwartz (2020) through a comparison of 2015 tax and survey data. This distribution implies that about 13.5 percent of non-filers are in the bottom decile of the distribution, with a relatively uniform distribution throughout the middle deciles and only about 5 percent in the top decile. We assume that there are no non-filers in the top centile of the distribution. Before 1994, when the proportion of unobserved adults is higher, we increase the share imputed at the bottom of the distribution, assuming that low-income individuals were less likely to file taxes when they had less of an incentive to do so.[5] Note that the removal of those aged younger than 20 years and imputation of non-filers are used to align estimates with DINA methodology but have a negligible effect on distributional estimates.

Pre-Tax National Income

Next, we obtain estimates of aggregate values for a range of macroeconomic and fiscal variables from Canada's national accounts and distribute all the net national income not observed in the tax data among all adults aged 20 and older.[6] The income observable in the LAD corresponds closely to the concept of fiscal income in DINA (which is roughly income that is observable in tax data; Blanchet et al. 2021). We calculate measures of fiscal labour, capital, and mixed income. Then, we compare total fiscal labour, capital, and mixed income with totals from national accounts. We adjust labour incomes so that the sum of all labour income matches total compensation of employees from national accounts (on average, a 1.5 percent adjustment).

However, only 36.5 percent of net corporate operating surplus is observed in the tax data. Missing net corporate operating surplus includes retained corporate earnings,

corporate income taxes, investment income accruing to pension funds and non-profits, and net foreign capital income. Aggregates for these variables are obtained from national accounts.[7] Retained earnings (except those accruing to pension funds) should be distributed according to the distribution of equity wealth.[8] Because we do not directly observe equity wealth, we distribute retained earnings according to the average of the distributions of dividends and smoothed capital gains, a simplified version of Piketty et al.'s (2018, 2024) method used in the United States.[9] Corporate income taxes are distributed in the same way, an assumption similar to that used by Piketty et al. (2018), who allocate them according to the distribution of capital excluding real estate wealth.[10] We assume that individuals hold pensions proportional to their labour income, so investment income accruing to pensions is distributed according to the fiscal labour income distribution.

Of net mixed income, 35.3 percent is observed annually in the LAD in the form of self-employment, partnership, and rental income. Most unobserved mixed income is imputed rents, which we distribute according to the distribution of homeownership by pre-tax income from the Survey of Financial Security (SFS) public use microdata files (PUMFs).[11] We interpolate years between SFS observations linearly and extrapolate back from 1999 and forward from 2019. The remaining unobserved mixed income (10 percent) is distributed according to the observed distribution of mixed income (which includes self-employment, partnership, and rental income). This is a simplifying assumption that could be improved with additional information about unobserved mixed income.

To construct the pre-tax national income distribution (and corresponding estimates of capital and labour income), we follow convention and treat mixed income as 70 percent labour income and 30 percent capital income. Taxes less subsidies on products, production, and imports are also treated as 70 percent labour income and 30 percent capital income and distributed so as not to affect the distributions of either. Figure 1 displays the resulting composition of pre-tax capital income.

Post-Tax Disposable Income

Starting from our estimates of the pre-tax national income distribution, we distribute all taxes and government transfers to individuals to obtain the post-tax disposable income distribution. Taxes fall into four main categories: personal income taxes, corporate income taxes, sales and other direct taxes, and property taxes. Personal income taxes are observed in the LAD, and thus we deduct observed personal income taxes paid from pre-tax national income, scaling total personal in-

come taxes to match total personal income taxes collected according to national accounts (about 95 percent of personal income taxes is observed). Corporate income taxes are subtracted where they were added for pre-tax national income (according to the distribution of dividends and capital gains).

Property taxes are distributed in the same way as imputed rents, according to the distribution of real estate wealth by pre-tax income in the SFS PUMFs. Sales and other direct taxes are distributed according to the distribution of disposable income (pre-tax income plus transfers less taxes and saving).[12]

Government transfers to individuals are observed in the LAD. Specifically, we add the following observed transfers to pre-tax national income less taxes paid to obtain the post-tax disposable income distribution: Old Age Security, Guaranteed Income Supplement, family benefits, Goods and Services Tax and Harmonized Sales Tax credits, child tax benefits, Working Income Tax Benefit, social assistance, workers' compensation, other federal tax credits, and provincial transfers. The addition of these transfers and the subtraction of the four types of taxes listed earlier provides the post-tax disposable income distribution.

Post-Tax National Income

Because taxes raised are larger than spending on transfers to individuals, total post-tax disposable income is less than national income. To obtain the post-tax national income distribution, which allows income levels to be compared across countries, we distribute the rest of government spending to individuals as in-kind transfers. It is very difficult to know who benefits from government consumption expenditure, and so this distribution requires making significant assumptions. We follow the DINA guidelines (Blanchet et al. 2021) and Piketty et al. (2018) in making these assumptions.

Government consumption expenditure can be broken down into collective and individual government consumption expenditures. Individual government consumption expenditure includes health and education spending, and collective government consumption expenditure includes all other government spending, including spending on administration and defense. Given that Canada has relatively equal access to public health care services and primary and secondary education, we allocate government spending on these categories equally to all individuals. Because access to tertiary education in Canada is related to family income level, an equal lump-sum allocation does not make sense for this form of individual consumption expenditure. We allocate spending on tertiary education to the distribution of post-secondary enrolment by income quintile (Frenette 2017). Collective consumption expenditure is distributed
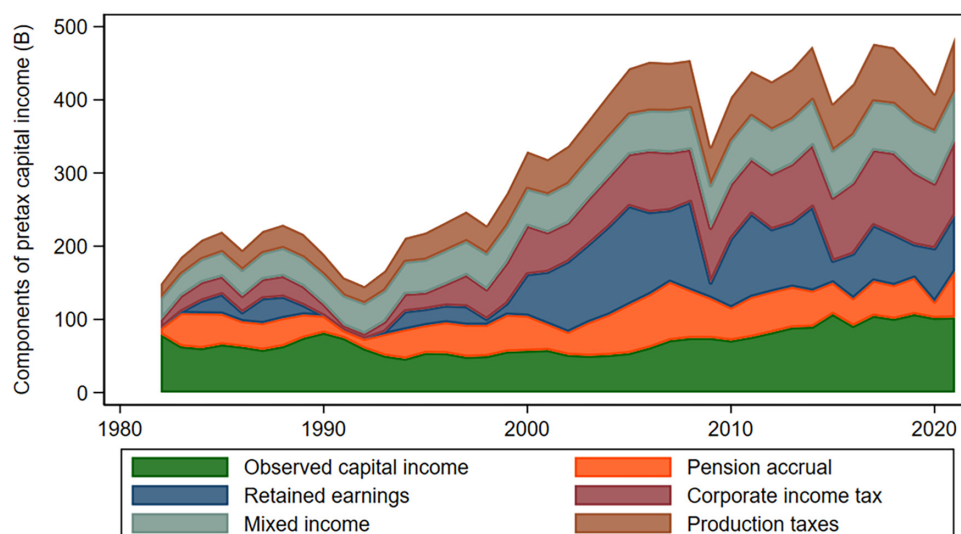
Figure 1: Composition of Net Pre-Tax Capital Income, 1982–2021

Note: Mixed income is the capital share of total mixed income (30 percent) and includes observed mixed income and imputed rents. Retained earnings exclude those that accrue to pensions.

Source: Authors' calculations.

according to the post-tax disposable income distribution, following Piketty et al. (2018), so that including these expenditures is neutral to the income distribution.

Re-Ranking

Because we are working from tabulated data rather than raw microdata files, there is the possibility for re-ranking to occur as we move from the pre-tax national income distribution to the post-tax income distributions. For example, an individual who is in the top 0.01 percent of the pre-tax national income distribution who has a particularly high tax bill in a certain year may not be in the top 0.01 percent of the post-tax national income distribution. To estimate whether this re-ranking is a problem, we compute the ratio of the average after-tax income to the average market income for each income group in Statistics Canada (2024a), where the after-tax income distribution is sorted by after-tax income, and compare that with the ratio we observe in our tabulations, where after-tax incomes are sorted by pre-tax fiscal income. We found that there was a small but consistent underestimation of average after-tax incomes in the top decile and so applied an adjustment to the post-tax income distribution proportionate to this observed underestimation.

Results

In this section, we present estimates of top income shares in Canada over the period 1982–2021 developed using the DINA methodology. We begin by showing top shares at different stages in the construction of DINA estimates and comparing DINA estimates with other estimates of

income shares. Then we present a range of findings on income inequality in Canada over the past 40 years and describe how DINA can improve our understanding of income inequality in Canada.

Impact of DINA on Estimates of Top Shares

Figure 2 presents top 1 percent pre-tax income shares at different steps in the development of the benchmark DINA series. We begin with the top 1 percent share using individuals as the unit and the definition of market income used in the LAD. Then, we show the top 1 percent share using equal-split adults as the unit but the same definition of income. Shifting the unit of analysis from the individual to equal-split adults reduces top income shares by 1–2 percentage points. The drop in top shares when shifting from individuals to equal-split adults is partially the result of gender inequality—most people in the top 1 percent of individual earners are men (in 2020, 74.4 percent were men), and so when their income is split equally with their spouse, their incomes are greatly reduced.

Then, people aged younger than 20 years are removed, and non-filers older than age 20 years are imputed so that every individual aged older than 20 is represented in the data. This has a negligible effect on top shares. Finally, we move from the LAD definition of market income to the DINA concept of pre-tax national income. This increases estimates of top 1 percent shares by 0.5–2 percentage points, reflecting that a disproportionate share of unobserved income accrues to the wealthiest groups.

How do DINA estimates of top shares compare with other published estimates? Figure 3 presents compar-
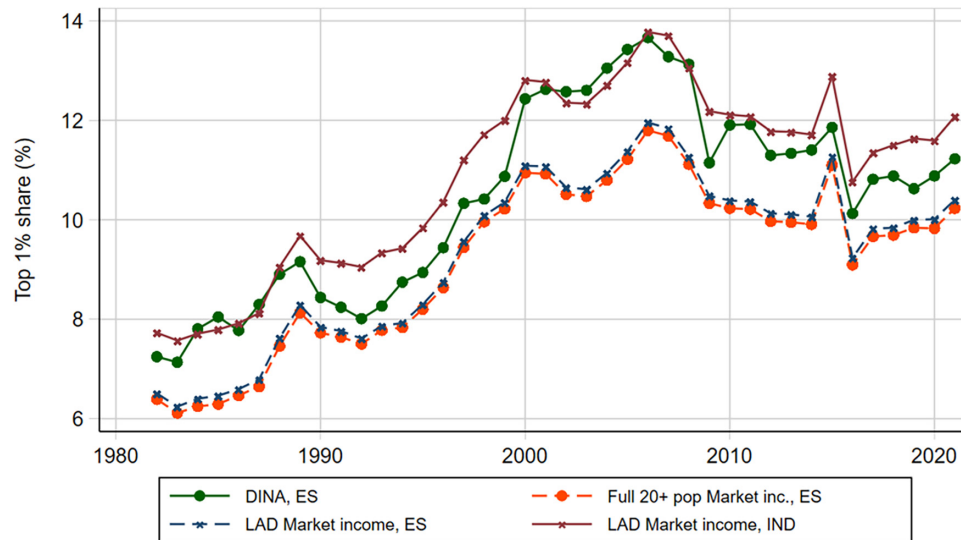
Figure 2: Top 1 Percent Income Shares at Different Steps of the Construction of the DINA ES Series, 1982–2021

Note: The full population series of those aged 20 years and older has removed those aged younger than 20 years from the database and imputed missing individuals aged older than 20 years. ES = equal split; IND = individuals.

Source: The Longitudinal Administrative Databank market income series come from a Statistics Canada custom tabulation; remaining series are authors' calculations.
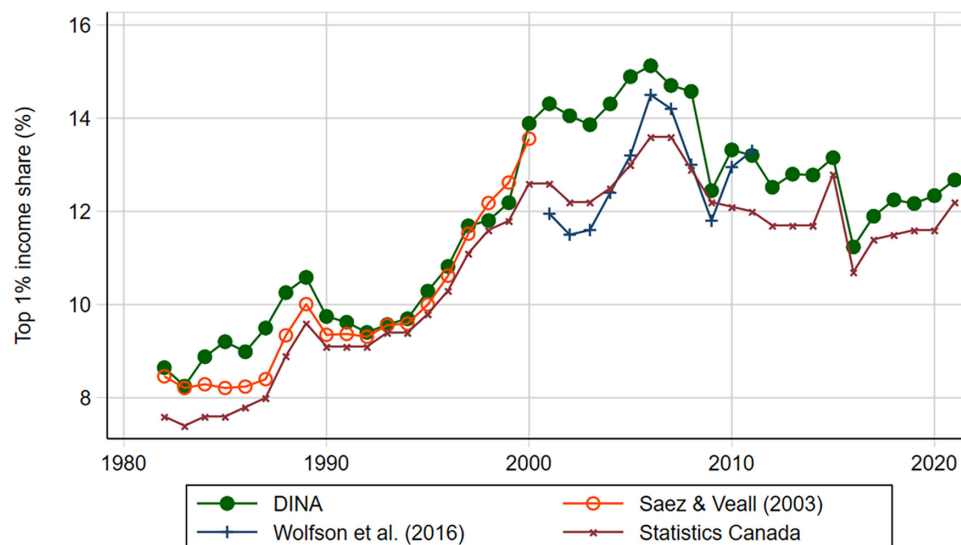
Figure 3: Comparison of DINA Top 1 Percent Pre-Tax Income Shares for Individuals with Other Estimates

Source: Saez and Veall (2003), Statistics Canada (2024a), Wolfson et al. (2016), and authors' calculations.

isons with three series that bear different similarities to the DINA definitions: top 1 percent market income series published by Statistics Canada (2024a) and estimates from Saez and Veall (2003) and from Wolfson et al. (2016).[13] For these comparisons, we use the individual-level DINA series, because this definition of unit is most similar to that of units in other series.

The estimated top 1 percent share using DINA is, on average, 1 percentage point higher than the Statistics Canada estimate. The gap varies from about 0.2 percentage points in the mid-1990s to 1.9 percentage points in the mid-2000s. The two series vary in numerous ways, which were described in the "Methodology" section. However, the gap is primarily driven by the fact that the DINA series include retained earnings. From the early 1990s to the mid-2000s, the magnitude of retained earnings increased significantly, meaning the underestimation of top shares using conventional income tax data increased as well.

We present the Saez and Veall (2003) series even though it only extends to 2000 because it uses the same population definition—adults aged 20 years and older—and is also primarily based on the LAD. Importantly, however, their series only includes income observed on tax returns. Nonetheless, despite the differences in income concepts, the two series are very similar.

As mentioned previously, Wolfson et al. (2016) is the only article we are aware of that has previously attempted to link retained corporate earnings to owners to estimate income shares. Their series, however, is based on after-tax income instead of pre-tax income. Despite being based on after-tax income, their series is higher than the Statistics Canada (2024a) series based on market income in 2006 and 2007, highlighting the importance of retained corporate earnings at the top of the income distribution. Given the shrinking gap between DINA and the Wolfson et al. (2016) after-tax series in the mid-2000s, it is possible that DINA underestimate the proportion of retained corporate earnings that accrued to the top 1 percent during the peak of the business cycle in the mid-2000s.

Overall, it is clear that throughout the 1982–2021 period, top income shares published by Statistics Canada underestimate income inequality relative to top income shares calculated using DINA. This is primarily because DINA accounts for undistributed capital income that is retained in corporations. It should be kept in mind that estimates of top income shares presented in this article using equal-split adults would be higher if they were based on individuals as the unit of analysis.

DINA Across the Distribution

In Figure 4, we present more detailed results for the 1982–2021 period using the equal-split series. We divide pre-tax national income and post-tax disposable income divided into three broad groups: the top 10 percent of income earners, the middle 40 percent of income earners, and the bottom 50 percent of income earners. Consistent with previous research, we observe an increase in the top 10 percent share from the early 1980s until the mid-2000s followed by a slight decline. The top 10 percent share of pre-tax national income increased from 28.8 percent in 1982 to 37.4 percent in 2006 and fell to 34.8 percent in 2019 before rebounding to 35.5 percent in 2021. From 1982 to 1997, most of this increase stemmed from a decline in the bottom 50 percent share, from 22.1 percent to 17.4 percent. After 1995, the increase in the pre-tax top 10 percent share mostly stemmed from a decline in the middle 40 percent share, from 49.0 percent in 1997 to 45.6 percent in 2006. Since 1995, the bottom 50 percent pre-tax income share has remained relatively stable, sitting at 17.7 percent in 2021. The middle 40 percent pre-tax income share has

rebounded slightly from a low of 45.6 percent in 2006 to 46.8 percent in 2021.
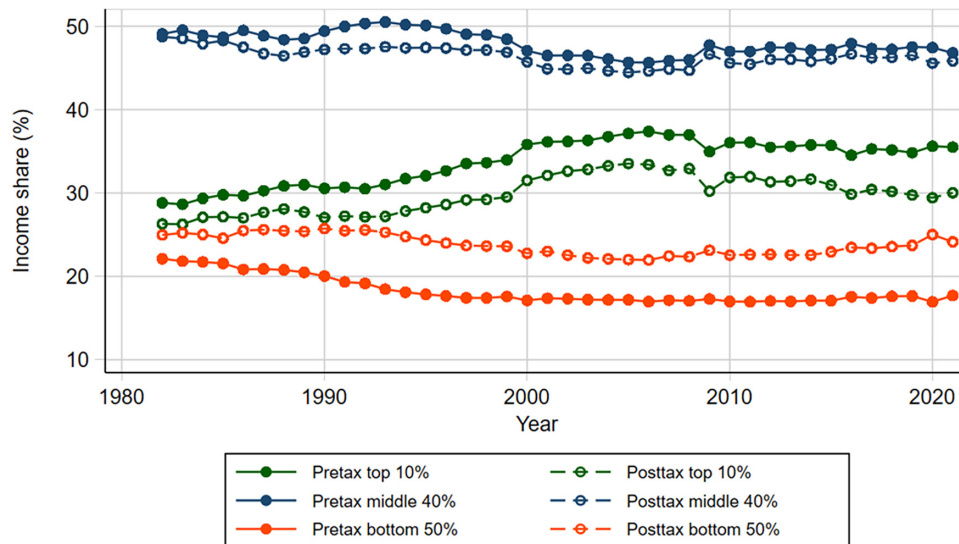
Trends in post-tax disposable income shares are similar to those in pre-tax national income except in 2020. In 2020, although the pre-tax income share of the bottom 50 percent fell, the post-tax disposable income share increased because of the unprecedented federal pandemic transfers. Typically, the top 10 percent and middle 40 percent pre-tax income shares are about 3–5 and 1–2 percentage points higher, respectively, than the top 10 percent and middle 40 percent post-tax disposable income shares. The bottom 50 percent income share increased by 4–6 percentage points because of the operation of the tax-and-transfer system. Since reaching a low of 22.0 percent in 2006, the bottom 50 percent post-tax disposable income share increased by 2.1 percentage points by 2021, whereas the bottom 50 percent pre-tax national income share has increased by only 0.7 percentage point, suggesting that the tax-and-transfer system has become increasingly redistributive.

Over the whole period, then, the pre-tax income share of the top 10 percent has increased significantly, largely at the expense of the bottom 50 percent of income earners. Increasing redistribution through the tax-and-transfer system has partially, but not entirely, offset this effect on the post-tax distribution.

Next, we focus on estimates of the income share of the top 1 percent. Figure 5 displays the income share for three groups within the top 1 percent: the top 0.01 percent, the next 0.09 percent (the 99.9th percentile to the 99.99th percentile), and the next 0.9 percent (the 99th to the 99.9th percentile). The income shares of all three groups increased from 1982 to 2006. The pre-tax national income share of the top 0.01 percent increased from 0.5 percent in 1982 to 1.7 percent in 2006 before falling to 1.3 percent in 2019. Over the same period, the post-tax disposable income share increased from 0.4 percent to 1.4 percent and then fell to 0.9 percent. In 2021, the pre-tax share rebounded to 1.4 percent and the post-tax share increased to 1.1 percent. All three income groups within the top 1 percent experienced increases in their pre-tax and post-tax income shares in 2021, a topic we revisit later in the "COVID-19 and Canada's Response" section.

The significant fall in income shares of each group in the top 1 percent in 2016 has been attributed to high-income Canadians bringing forward income to 2015 to avoid anticipated tax increases by the new Liberal government (Osberg 2020).

Increasing inequality in Canada has stemmed from vastly unequal growth—in other words, as Canada's economy grew from the 1980s through the mid-2000s, this new wealth did not trickle down. Instead, this new income was entirely captured by the top half of the income distribution.

Figure 4: Top 10 Percent, Middle 40 Percent, and Bottom 50 Percent Pre-Tax National Income and Post-Tax Disposable Income Shares, 1982–2021
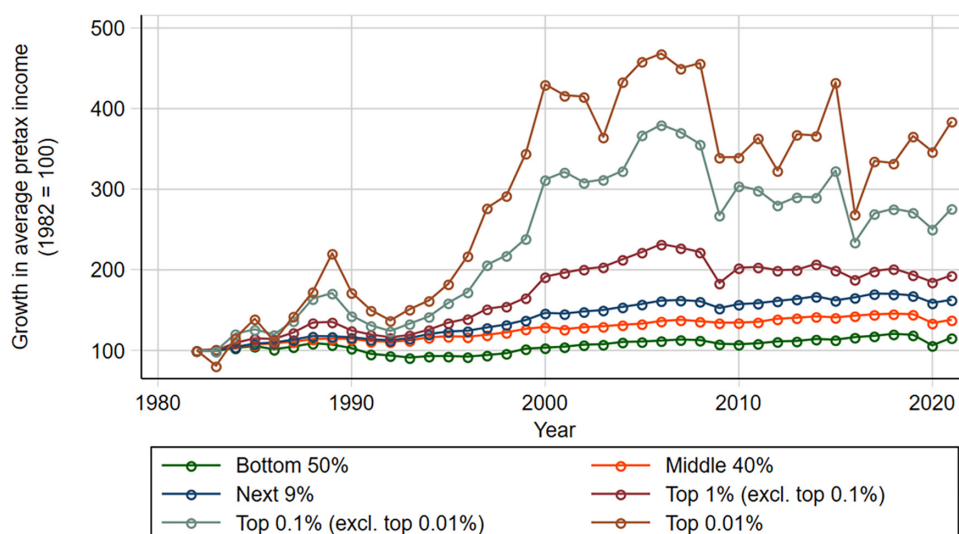
Source: Authors' calculations.
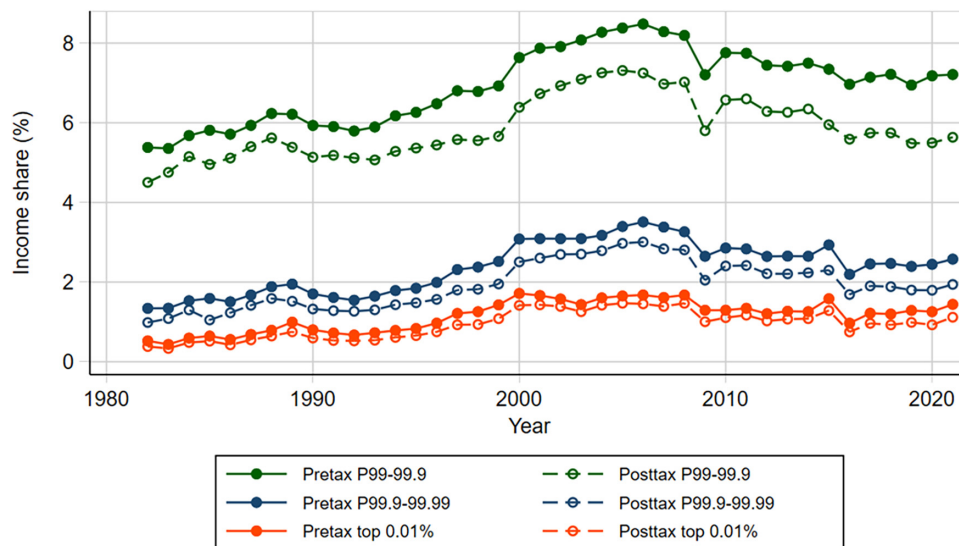
Figure 5: Pre-Tax and Post-Tax Income Shares for Groups in the Top 1 Percent of Income Earners, 1982–2021

Source: Authors' calculations.

Figure 6 shows growth incidence curves for six income groups. From 1982 to 2000, the incomes of those in the bottom half of the income distribution were stagnant, growing by only 4 percent over the whole period. However, the incomes of the top 0.1 percent (excluding the top 0.01 percent) grew by 209.5 percent and the incomes of the top 0.01 percent grew by 340.3 percent. The higher one's income, the more it grew during this period.

Since 2000, this trend has reversed, with the incomes of the bottom 50 percent growing more than any other group through 2021 (11.0 percent). However, the gains of the bottom 50 percent and the middle 40 percent have been seriously eroded since 2019. From 2019 to 2021, average pre-tax incomes of the bottom 50 percent fell by 3.2 percent and those of the middle 40 percent fell by 5.0 percent. At the same time, incomes of the top 0.1 percent have increased by 3.9 percent and incomes of the top 0.01 percent have increased 8.0 percent. Furthermore, the gains of the bottom earners since 2000 have been incredibly small compared with the im-

Figure 6: Growth Incidence Curve by Income Group, 1982–2021

Source: Authors' calculations.

mense gains made by top earners in the preceding decades.

As a result, from 1982 to 2021, the average income of the bottom 50 percent has increased by 15.8 percent, compared with 37.9 percent for the middle 40 percent, 62.8 percent for the next 9 percent, 93.8 percent for the next 0.9 percent, 177.8 percent for the top 0.1 percent (excluding the top 0.01 percent), and 297.3 percent for the top 0.01 percent.

Labour and Capital Income

Next, we explore what DINA indicate about trends in labour and capital incomes for different income groups. These can help shed light on why pre-tax top shares increased so significantly from the 1980s through the mid-2000s and have since declined.

Figure 7 displays the composition of the top 1 percent and top 0.01 percent pre-tax income shares from 1982 to 2021, alongside the capital income share.[14] During the 1980s and early 1990s, it was increases in labour income that drove growth in top incomes, and the capital income share was flat or falling. From 1982 to 1998, the top 1 percent share of pre-tax income that was labour income increased from 4.3 percent to 7.2 percent. This increased to only 7.7 percent in 2006, whereas the top 1 percent share of pre-tax income that was capital income increased from 3.2 percent to 5.9 percent from 1998 to 2006, driving the peak in the top 1 percent share.

This is in line with the Saez and Veall (2005) argument regarding labour market competition for top executives driving increases in top income shares through 1998. However, increasing top shares after 1998 were driven by an increase in the capital income share and increasing

capital income concentration. The capital share of income increased from a low of 16.6 percent in 1998 to 24.7 percent in 2006 (the second highest capital share throughout the whole period, behind 25.1 percent in 2005).

During the period of increasing inequality, and especially in 1998–2006, capital income became increasingly concentrated. The top 1 percent earned only 14–17 percent of capital income during the early 1980s. By 1998, this had increased to 19.5 percent, and it increased further to 24.1 percent by 2006. This increase in concentration of capital income has come almost entirely at the expense of the bottom 50 percent of earners—their capital income share declined from 21–22 percent during the 1980s to only 17.0 percent by 2006. These trends are relatively consistent across provinces, indicating that they have been driven by federal policies and factors.

These changes in capital income were likely driven by a combination of changing bargaining power between workers and owners, as well as the unique global market forces that led to large profits in finance and insurance and the oil and gas industries during the early to mid-2000s. In particular, the increasing capital income share in the early 2000s was driven by Alberta, where the capital share reached 36 percent in 2006.

Since 2006, declines in both capital and labour incomes have contributed to falling top income shares. The top 1 percent share of pre-tax income that was labour income has declined by 1.2 percentage points, and the share that was capital income declined by 1.2 percentage points between 2006 and 2021. This has coincided with the capital income share falling back to 19–22 percent, in line with levels observed in the 1980s.

In the bottom half of the distribution, where capital income is much less important, the decline in pre-tax

Figure 7: Capital Income Share and Income Composition of the Top 1 Percent and Top 0.01 Percent Pre-Tax Income Share, 1982–2021

Source: Authors' calculations.
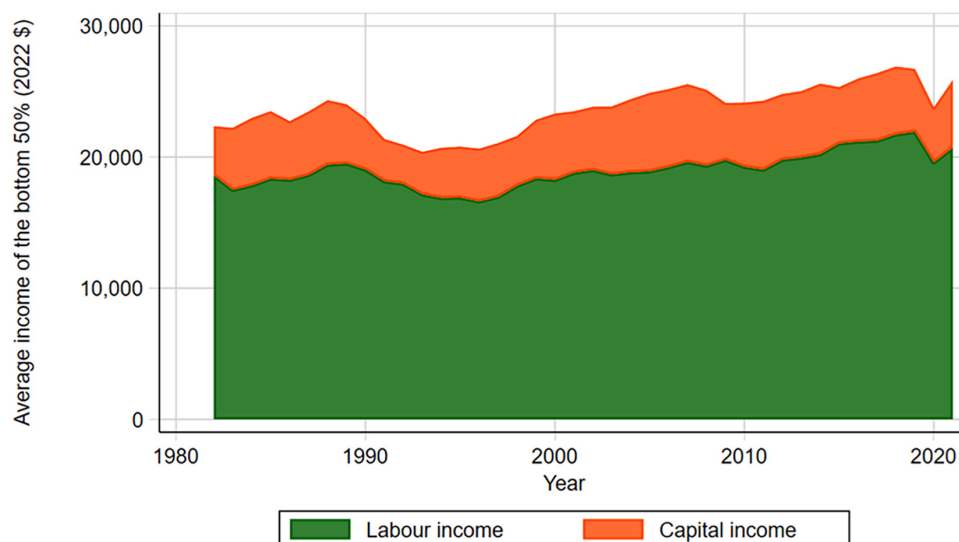
Figure 8: Average Labour and Capital Income of the Bottom 50 Percent, 1982–2021

Source: Authors' calculations.

income shares through the mid-2000s was driven by stagnant or, during the early 1990s, declining (in real terms) labour incomes (see Figure 8). Average capital income increased for the bottom 50 percent from 1982 to 2006, whereas average labour income was unchanged. From 2006 until the pandemic, labour incomes grew for the bottom 50 percent, resulting in a slight increase in the pre-tax income share.

COVID-19 and Canada's Response

To this point, we have mainly examined trends in inequality throughout the past 40 years, distinguishing

between the increase up until the mid-2000s and the subsequent smaller decline. In this section, we focus on 2020 and 2021 in particular to assess the impact of the COVID-19 pandemic, and the government programs implemented in response to it, on income inequality in Canada.

The year 2020 was particularly unique in that it is the only year on record with a significant divergence in trends in pre-tax and post-tax income shares. Average pre-tax incomes declined across the income distribution in 2020 as workers were laid off or had their hours reduced in response to the COVID-19 pandemic. Low-income workers were most strongly affected: the average

pre-tax income of the bottom 50 percent fell by 11 percent in 2020. This contributed to a decline in the bottom 50 percent share coupled with an increase in the top 1 percent share.

In response to the pandemic and associated lockdowns, the federal government implemented large temporary social programs, including the Canada Emergency Response Benefit, to support workers (and businesses) affected by the pandemic. These programs provided up to $2,000 per month to workers whose employment was affected by the pandemic, which was in some cases more than workers were earning before the pandemic. As a result, post-tax disposable incomes increased for all income groups in 2020, with the largest increase accruing to the bottom 50 percent. Thus, although pre-tax inequality increased in 2020, post-tax inequality decreased because of the significant increase in government transfers.

Both of these trends were reversed in 2021. During 2021, many government support programs were rolled back, contributing to a decline in the bottom 50 percent post-tax income share of 0.9 percentage points even though the pre-tax share rebounded as employment recovered. Canada's official poverty rate, which fell from 10.3 percent to 6.4 percent in 2020, rebounded to 7.4 percent in 2021 and then to 9.9 percent in 2022 (Statistics Canada 2024b).

At the other end of the income distribution, pre-tax and post-tax incomes of the top 1 percent recovered entirely in 2021. The pre-tax income share of the top 1 percent increased from 10.6 percent in 2019 to 11.2 percent in 2021, and the post-tax income share increased from 8.3 percent to 8.7 percent. The increasing top 1 percent share was not due to increasing concentration of labour or capital income, but from the increase in the capital income share. This was driven by record levels of corporate profits in 2021 (which have since been surpassed by 2022). Research has also demonstrated that these record profits contributed to the high level of inflation in 2021, which disproportionately affected low-income Canadians (Stanford 2022).

The experience of the COVID-19 pandemic demonstrates the power that federal policy has to affect income distribution—post-tax income inequality fell in 2020 because of transfer programs implemented by the federal government; however, because these measures were temporary, the drop in inequality that Canada experienced in 2020 was also temporary.

Canadian Inequality in International Context

One significant benefit of the DINA approach to estimating income inequality is that, by using a common definition of income, it produces statistics that are more comparable across countries than those based on fiscal income. In Figures 9 and 10, we display the top 1 percent and top 10 percent shares, respectively, of Canada, the United States, France, Great Britain, and Australia.

These are all countries for which the World Inequality Database contains relatively high-quality estimates based on tax data and national accounts. Our updated estimates of inequality place Canada in the middle of these comparable countries. The United States has much higher top shares than Canada, which has top shares similar to those of Great Britain. France and Australia both have lower top shares than Canada.

Conclusion

DINA methodology provides new insights into the evolution of income inequality in Canada since 1982. In particular, top income shares are higher than those calculated solely on the basis of tax data because tax data exclude non-filers and do not account for corporate retained earnings. Traditional estimates especially underestimated top income shares during the mid-2000s when the capital income share peaked and retained earnings were especially high, meaning less of net national income was observable in tax data.

Overall, results confirm previous research showing that income inequality increased drastically from 1982 until the mid-2000s and has fallen since the financial crisis. The increase in the pre-tax income share of the top 10 percent since 1982 has largely come at the expense of the bottom 50 percent, although this effect is smaller for the post-tax distribution because the tax-and-transfer system has become more redistributive.

During the 1980s and 1990s, rising top shares were driven by increasing top labour incomes, which could be explained by increased labour market competition for top executives from the United States, outsourcing of middle-class jobs, and falling unionization rates. However, the increase in national top shares between 1998 and 2006 was driven by an increasing capital income share and increasing concentration of capital income. This was led by residents of Alberta as oil and gas profits soared. This period of increasing inequality cannot be explained by the same reasons as the 1980s and early 1990s.

The year 2020 was an outlier for income inequality in Canada, with increased pre-tax income inequality coinciding with decreased post-tax income inequality. In 2021, these trends were reversed as record corporate profits increased top incomes. The experience of 2020 demonstrates the power of fiscal policy to reduce post-tax income inequality. However, achieving a just distribution of income will require permanent measures that address pre-tax inequality as well.
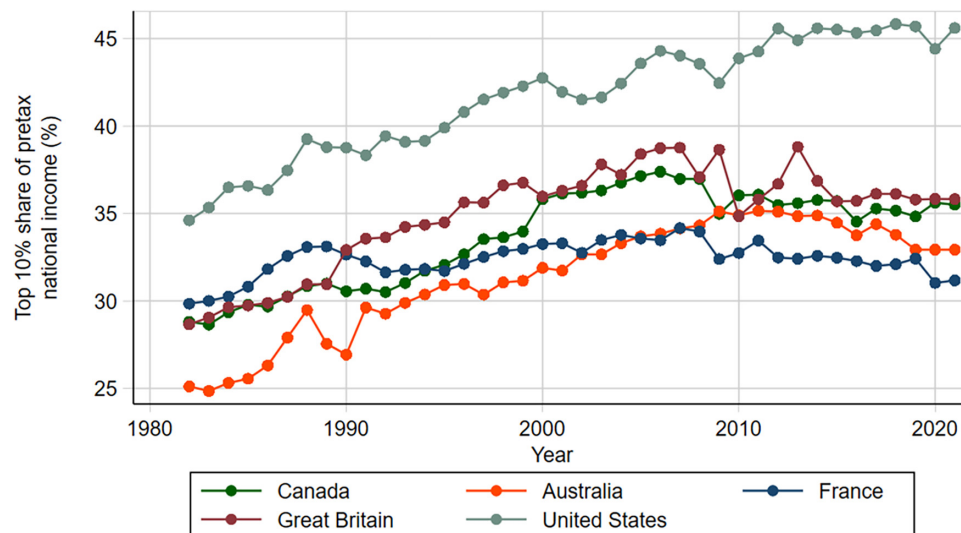
Acknowledgements
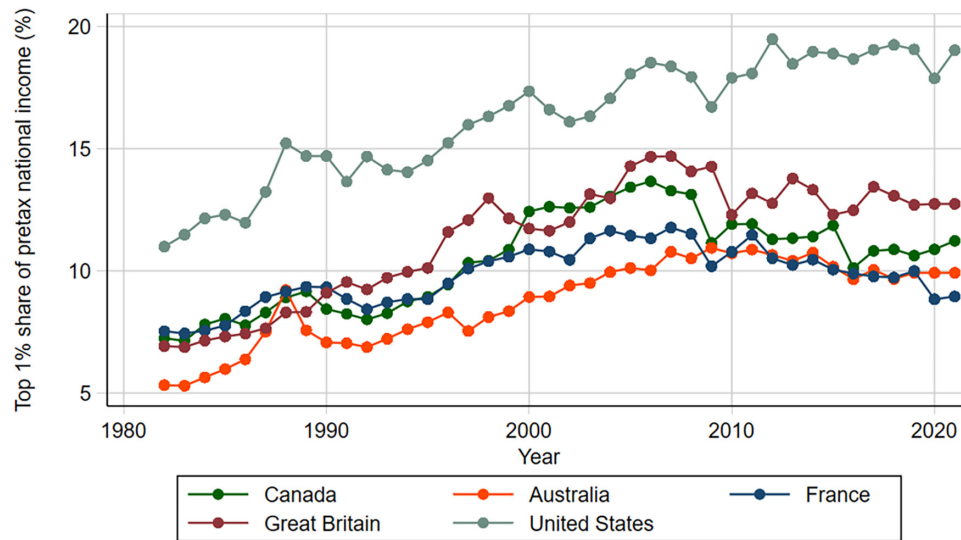
Figure 9: Top 1 Percent National Pre-Tax Income Shares in Canada and Comparable Countries

Source: Authors' calculations.

Figure 10: Top 10 Percent National Pre-Tax Income Shares in Canada and Comparable Countries

Source: Authors' calculations.

Notes

1 Relative to other countries, Canada has high rates of tax filing and a high proportion of net national income observable in tax returns. Nonetheless, we show that one-third of net national income is not observed in traditional inequality statistics.

2 The Luxembourg Income Study is an existing internationally comparable source for income inequality estimates. However, it relies on survey data rather than administrative tax data, which often underestimate top incomes (see, e.g., Flachaire, Lustig, and Vigorito 2023).

3 *Equal-split* means that incomes of spouses are summed and then divided equally between the two spouses. This is the benchmark population unit used for DINA based on tax microdata that accounts

for the fact that low-earning individuals with high-earning spouses have greater access to resources than unmarried low earners. However, this may be an overly optimistic view of income sharing within couples.

4 DINA is primarily concerned with the distribution of earnings, not the distribution of consumption. Because adults are the primary earners of income, DINA distributes all of national income to adults rather than to the full population, including children.

5 The introduction of several refundable tax credits, which require a tax return to be filed before those eligible for them can receive them, has increased the proportion of tax filers over time, essentially adding taxpayers with low, non-taxable incomes (Saez and Veall 2005).

6 We do not attempt to distribute income earned in the underground economy, which is not included in national accounts. Statistics Canada (2023) has estimated this to be about 2.7 percent of gross domestic product.

7 We do not separate investment income accruing to non-profits from other forms of unobserved capital income. However, it is typically less than 1 percent of net corporate operating surplus (Statistics Canada 2022), so an alternative distribution would have a negligible effect on our estimates.

8 Net foreign capital income is negative in most years, meaning that it reduces the magnitude of retained earnings and corporate income taxes that are distributed. We assume that net foreign capital income follows the same distribution as retained earnings.

9 Auten and Splinter (2024) use alternative assumptions to distribute unobserved capital income. They include unfunded pension wealth in their distribution of pension investment income and allocate retained earnings proportionally to 75 percent dividends and 25 percent capital gains. We estimated top shares under these alternative assumptions, and both slightly increase the growth in top shares over time, making our assumptions relatively conservative.

10 Because we aim to understand the distribution of control over economic resources, rather than the impact of the introduction of a new tax, we do not shift corporate taxes from one factor of production to another (Saez and Zucman 2023).

11 For the equal-split distribution, we use the distribution from the SFS based on economic families. Although these units are not identical, they are a reasonable approximation because fewer than 11 percent of economic families have more than two earners in the SFS data. For the individual distribution, we split market income and real estate property values equally among earners in each economic family.

12 This implicitly assumes that sales taxes are borne by those who pay them, a traditional approach in the DINA (e.g., Piketty, Saez, and Zucman 2018) and Canadian income inequality literature (Vermaeten, Gillespie, and Vermaeten 1994). Savings rates by income quintile are obtained from Statistics Canada (2025). Savings rates for the top g-percentiles are adjusted on the basis of savings rates reported for the United States in Saez and Zucman (2016).

13 Estimates from Veall (2012) are very close to those that are now published by Statistics Canada.

14 Note that this is calculated as net pre-tax capital income divided by net national income. Because we use net capital income instead of gross capital income, the capital income share is lower than in most publicly available estimates.

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