Income Inequality in Canada: Trends in the Census 1980-2005

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May, 2013

The focus of this paper:

- Analysis of income inequality trends in Canada; taking taxes seriously.
  - Most existing work has focused on pre-tax ‘market’ income
  - How much of the inequality growth is ‘undone’ by the tax system.

- Use the Long-Form Census data instead of tax admin data.

- Provide a comprehensive view of trends—top, middle, bottom.

- Tax simulations give hints about where policy has mattered.

How to measure wellbeing

Lots of ways to measure wellbeing:

- Wealth? Lifetime earnings? Permanent income? Consumption? Happiness? Annual income?

Fundamental difference is that annual income contains short-run income deviations. Do these short-run deviations matter?

- If families can smooth out these temporary fluctuations, then consumption will reflect permanent income or lifetime earnings. →Period income inequality unimportant.

- If smoothing not there, families may suffer periods of low consumption when they have low income. →Period income inequality matters.

Tax Data vs. Census

Recent high-incomes literature has focused on tax data, which some take as gold standard.

Advantages of tax data:

- Long time series
- More accurate reporting: e.g. T4 info reported directly from employer
- Large samples

Disadvantages

- Missing complete family information: don't know living arrangements.
- Less accurate reporting: incentive to under-report
- Will miss non-filers; more likely at bottom of distribution.
- Over-emphasizes taxable income. Non-taxable income buys groceries too.

Census shares some advantages; overcomes many of the disadvantages.

How I prepared the data

I use the 20 percent Census Long-Form files now available at Research Data Centres: 1981 to 2006.

- Sample sizes in 5 to 6 million range each year; 6 different years.
- Aim for broadest possible coverage. Only exclusion from individual data is Hutterites. For families I exclude all collective households.
- Calculate taxes and refundable credits using CTaCS tax calculator
    - Census family units: includes spouses; children.
- Formed economic families for wellbeing analysis.

Income measures

Census income definition not the same as taxable income. Notable missing component: Capital gains.

I form four different income measures for use here, not all Statcan regulars

1. Individual market income. Comprises earnings, RPP pension, and investment income.

2. Individual pre-fisc total income. Forms a measure of total income based on line 150 of the tax form.

3. Individual after-tax income. Output of CTaCS calculator.

4. Family adjusted after-tax income. Aggregates to economic family; adjusts for family size using square root.

(Also did household after-tax income to calculate one of the low-income measures…)

Inequality measures

Going to show you three sets of results:

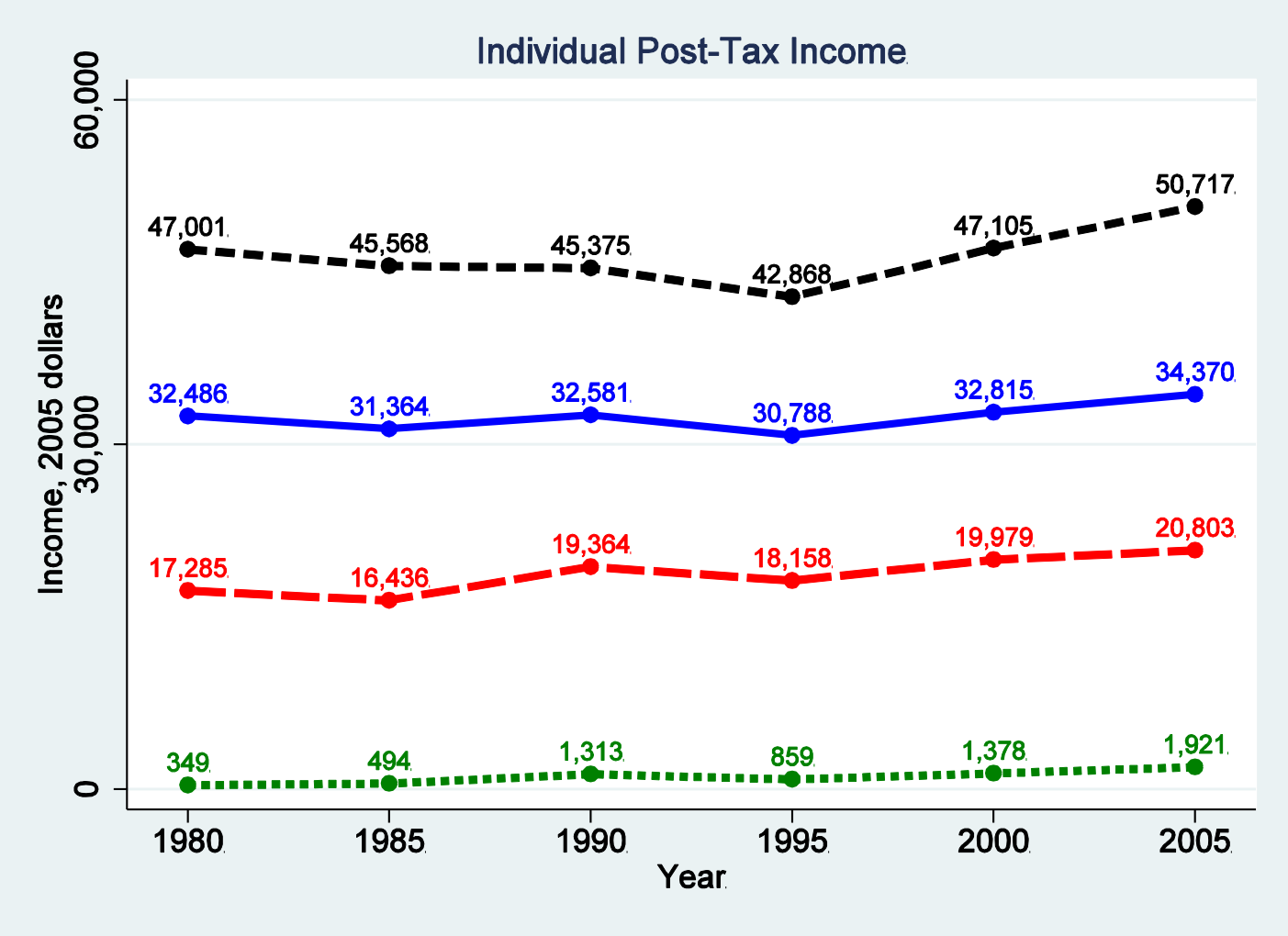
1. Overall distribution:
- Percentiles: 10^{th}, 50^{th}, 75^{th}, 90^{th}
- Log ratio of percentiles.
- Gini coefficients

2. At the bottom:

- Low Income Cut Off (LICO): Headcount under fixed threshold from 1992.
- Low Income Measure (LIM): Headcount under relative threshold. (50 percent of adjusted household median income)

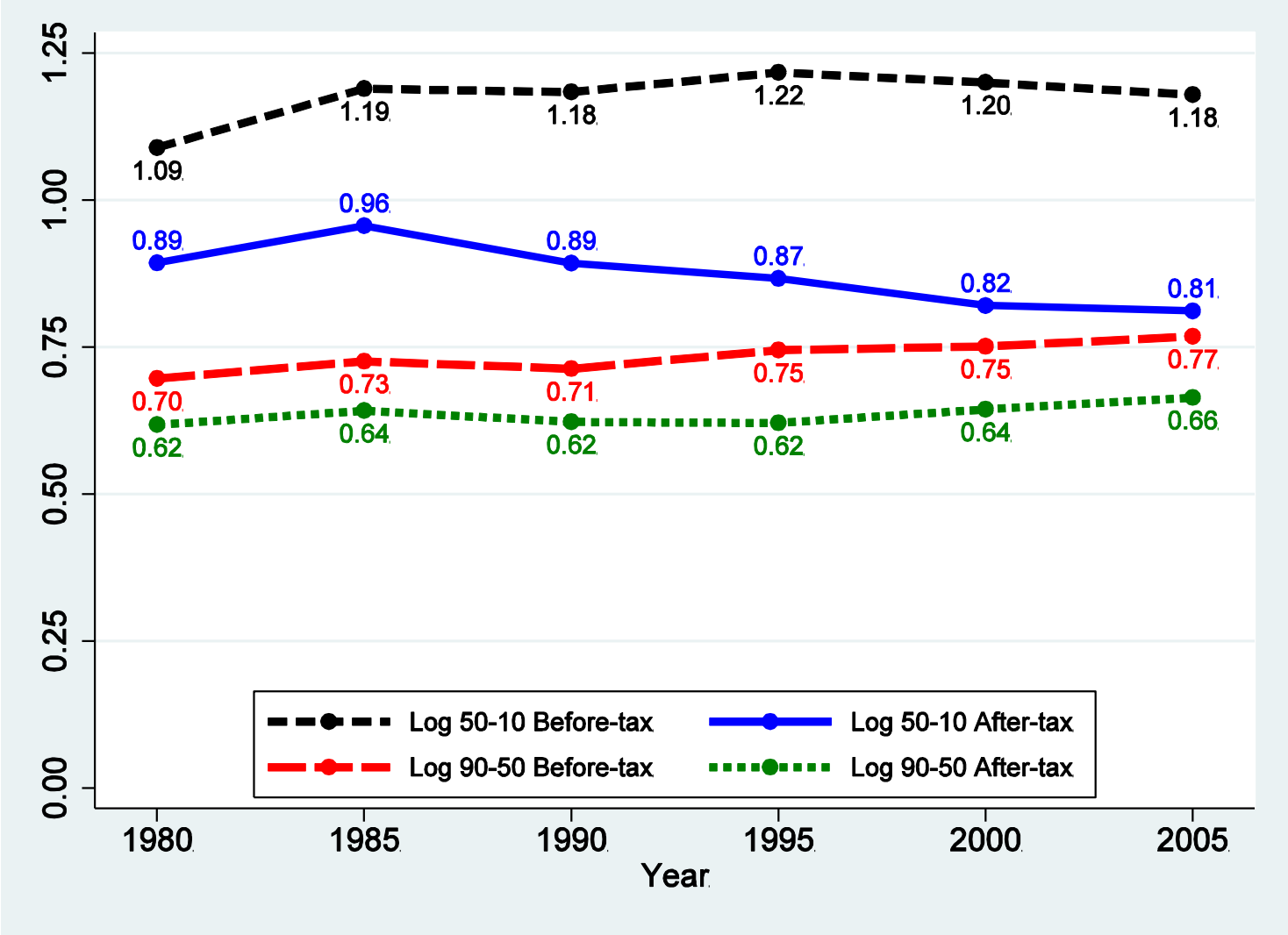
3. At top:
- Thresholds and shared of income earned by top 1%, 0.1%. (0.01% coming soon…)

Figure 1: Distribution of Income, 10th, 50th, 75th, and 90th percentiles



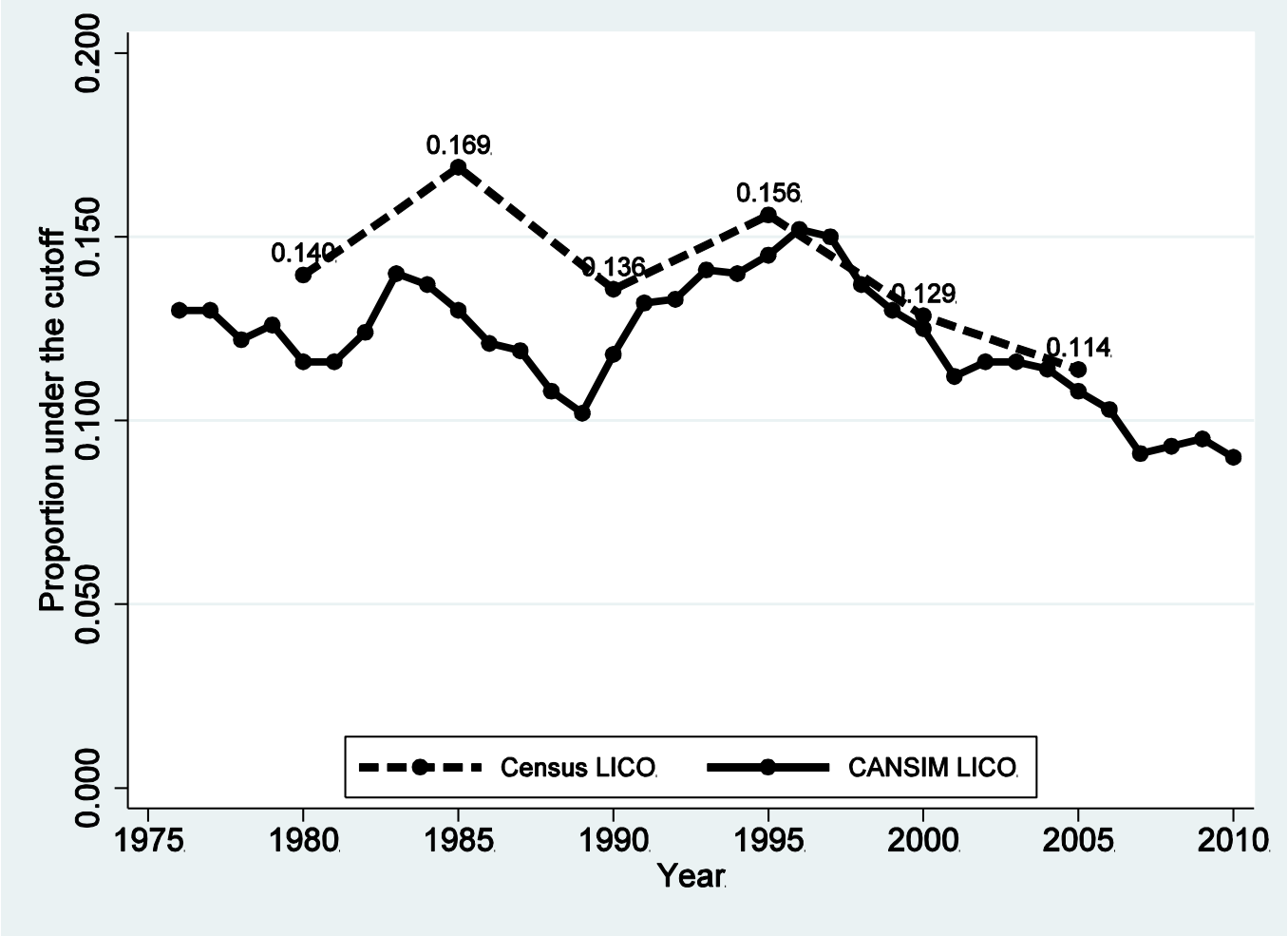
Note: Author's calculations from 1981 to 2006 master files of the Canadian census. All dollars adjusted to 2005 using CPI.

Figure 5: Log of 90th, 50th, and 10th Percentiles, Before and After Tax Adjusted Family Income



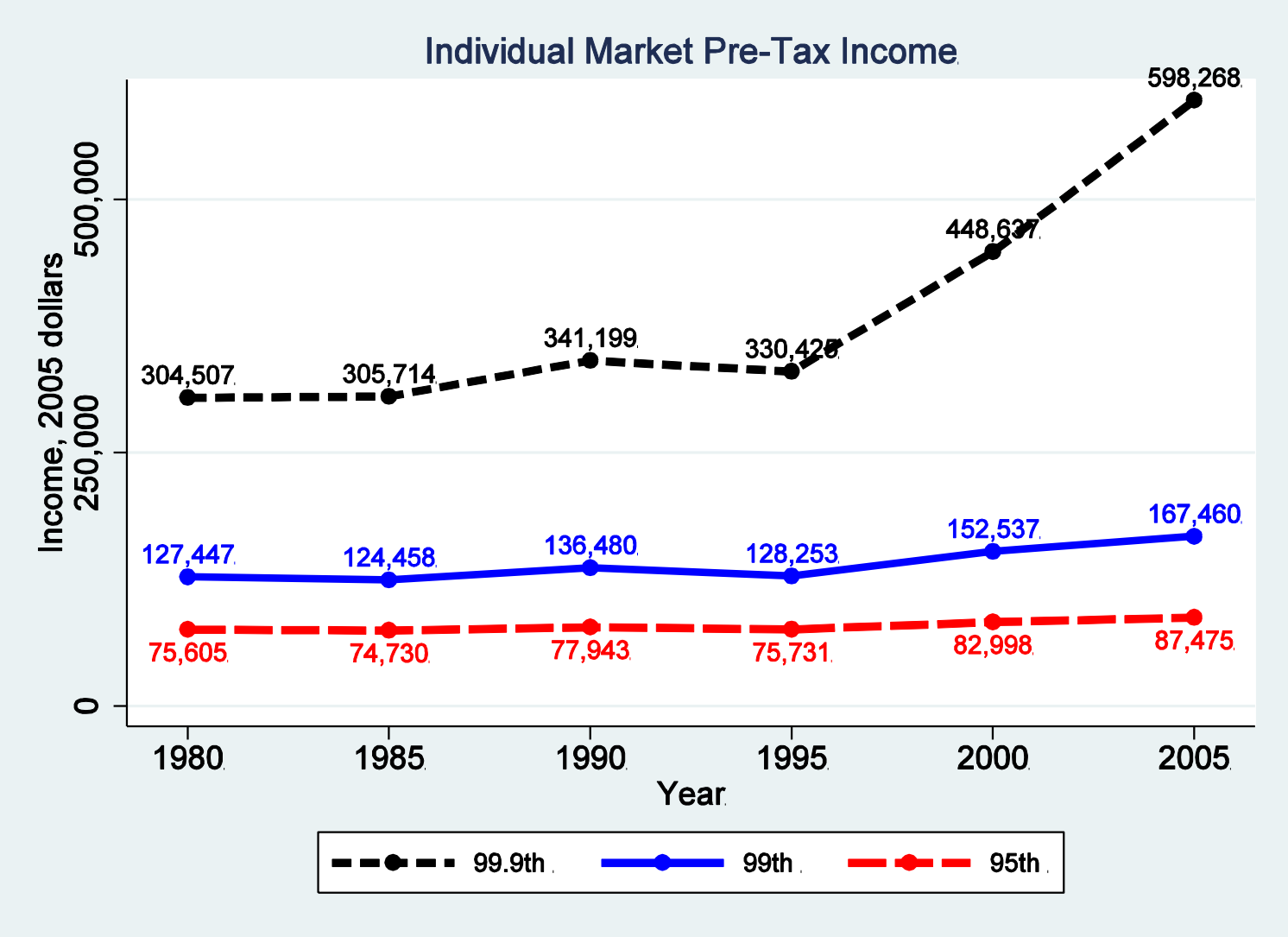
Note: Author's calculations from 1981 to 2006 master files of the Canadian census.

Figure 6: Proportion Under the Low Income Cut-off



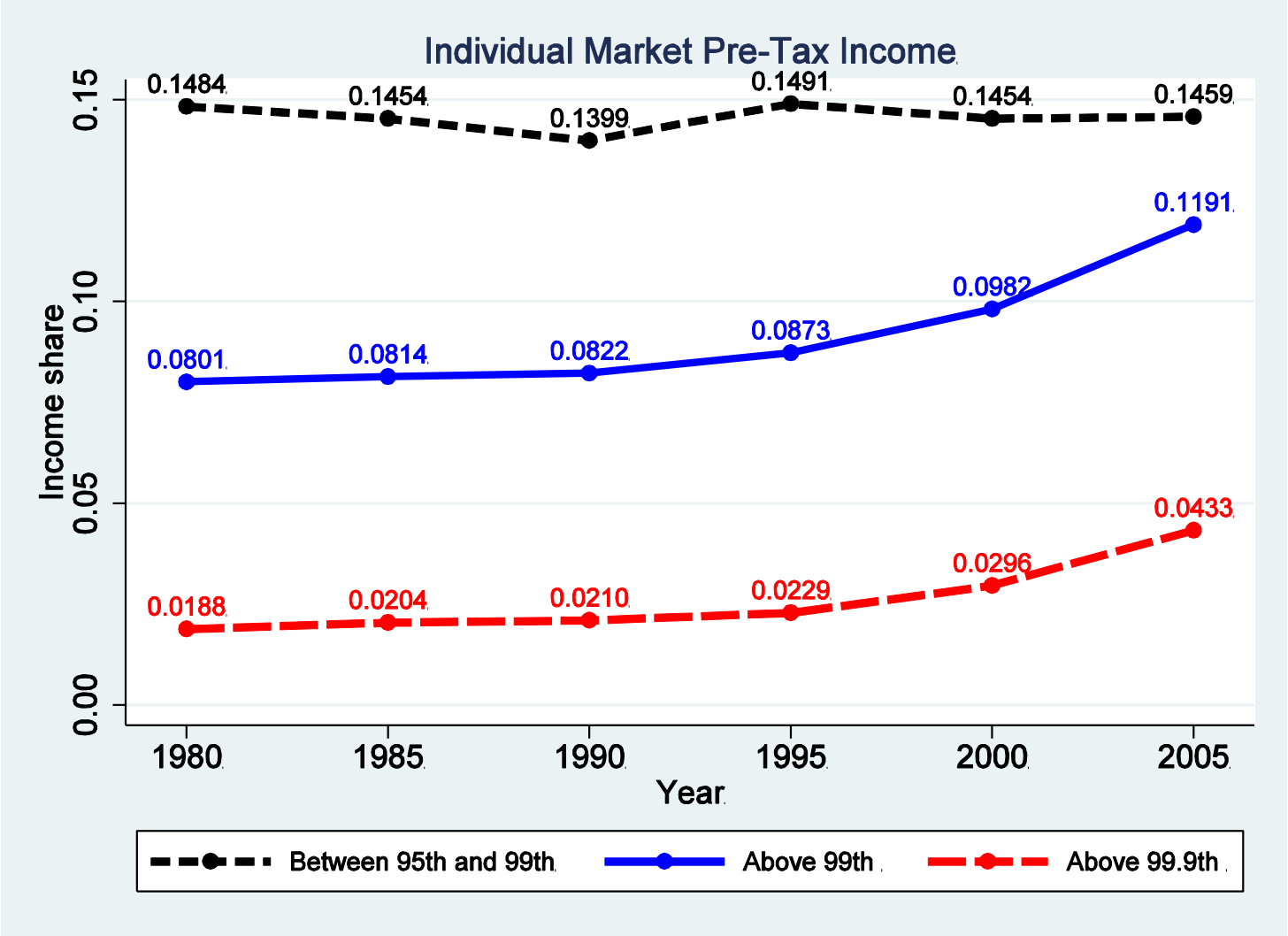
Notes: Author's calculations from 1981 to 2006 Canadian Census, and CANSIM Table 202-0283.

Figure 8: Percentile Income Cutoffs Near the Top



Notes: Author's calculations from 1981 to 2006 Canadian Census. Incomes in 2005 dollars

Figure 10: Top Income Shares



Notes: Author's calculations from 1981 to 2006 Canadian Census.

Figure 11: Top Income Shares

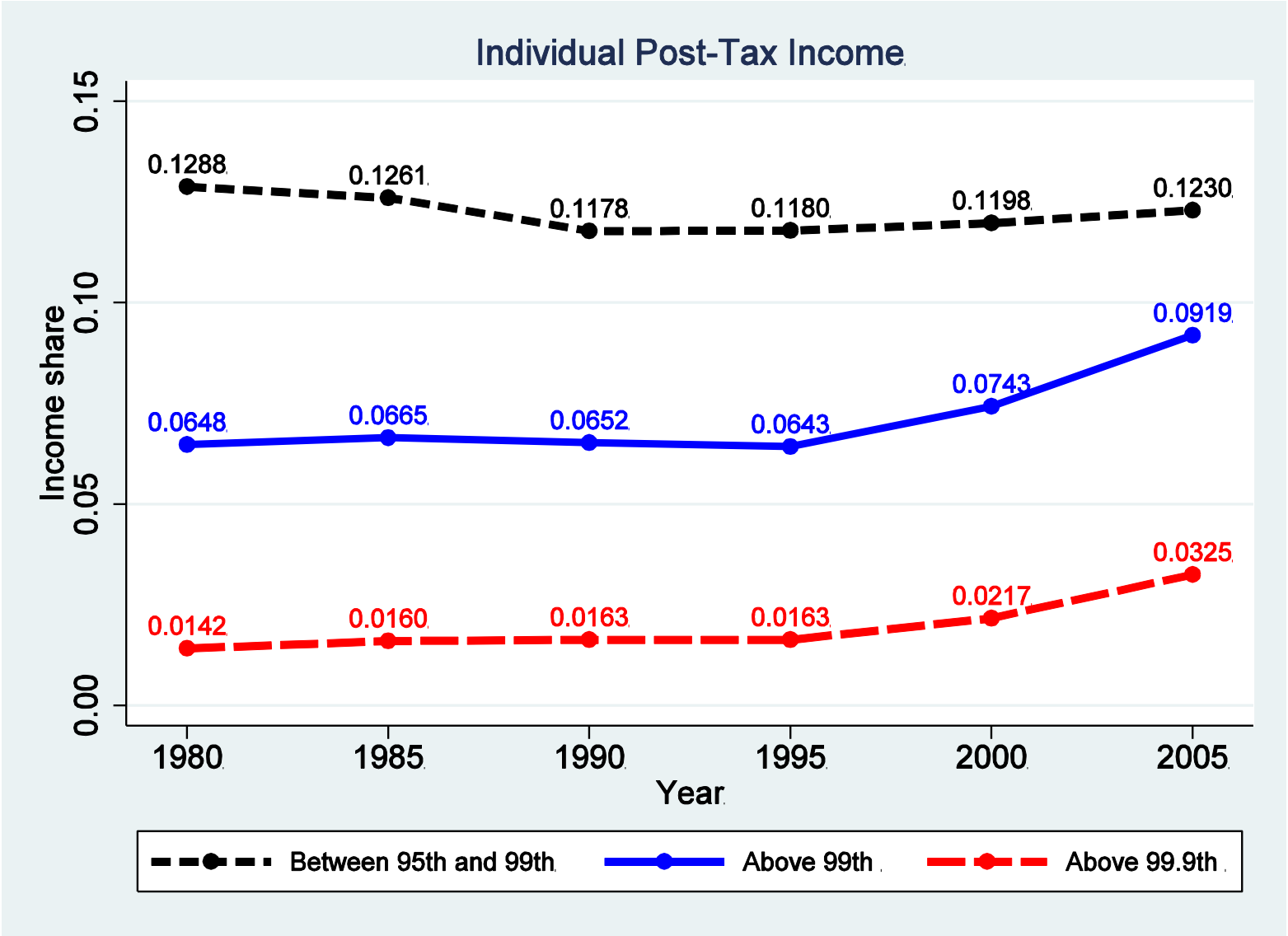
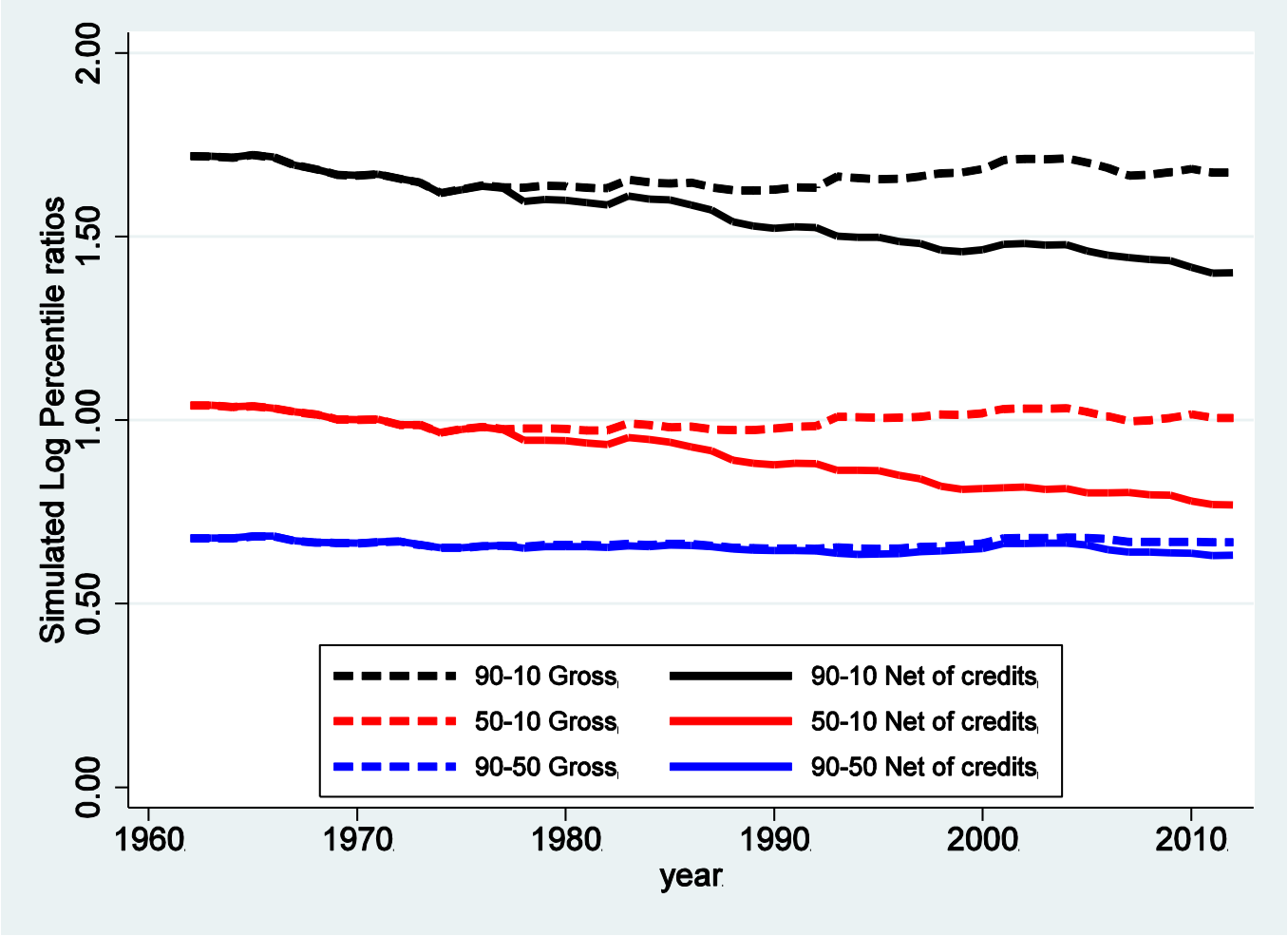


Table 2: Change 1980 to 2005 and Impact of Tax System

	Pretax	Posttax	Pretax	Posttax	Pretax	Posttax	
	1980		2005		Change		% Undone
Top 1% share	0.079	0.065	0.110	0.092	0.0309	0.0271	12.2%
Top .1% share	0.019	0.014	0.040	0.032	0.0211	0.0183	13.1%
	1980		1995		Change		% Undone
Top 1% share	0.079	0.065	0.078	0.064	-0.0011	-0.0005	53.1%
Top .1% share	0.019	0.014	0.021	0.016	0.0016	0.0022	-38.0%
	1995		2005		Change		% Undone
Top 1% share	0.078	0.064	0.110	0.092	0.0320	0.0277	13.6%
Top .1% share	0.021	0.016	0.040	0.032	0.0195	0.0162	17.2%

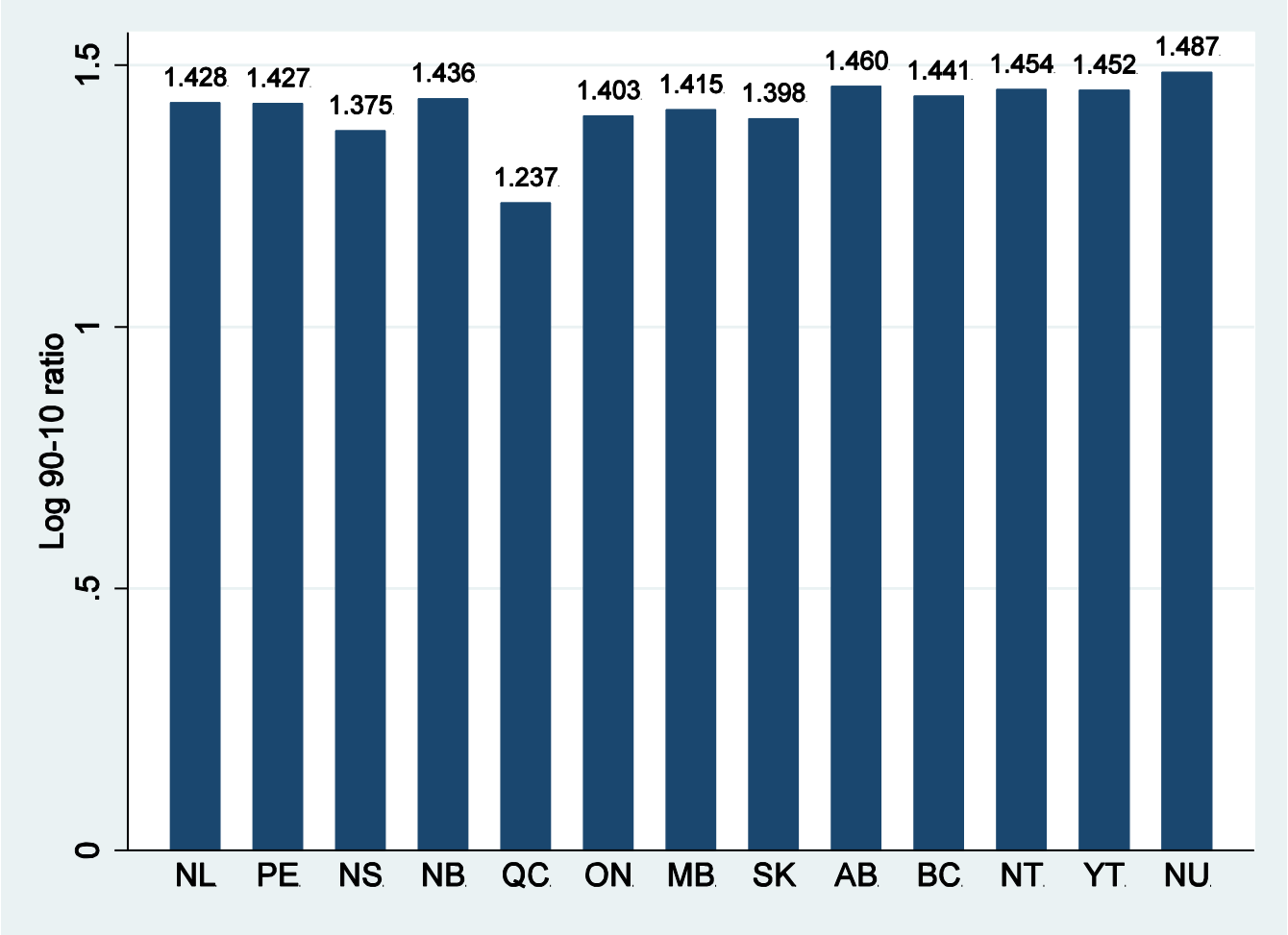
Notes: Each row shows the value of an inequality measure in 1980 and 2005 and the change between those dates. The last column shows how much of the pre-tax change was 'undone' by the tax system, calculated as one minus the post-tax change divided by the pre-tax change.

Figure 13: Log Percentile Ratios Using Simulated After-Tax Adjusted Family Incomes, 1962-2012



Notes: Author's calculations using the CTaCS simulator and income distribution from 2006 census. The 'Gross' series do not subtract refundable credits; the 'Net' series do.

Figure 15: Log 90-10 Ratios, Simulated Provincial After-Tax Adjusted Family Income



Notes: Author's calculations using the CTaCS simulator and income distribution from 2006 census and tax parameters from the 2012 tax year.

Summary

Four facts to take away:

1. High income concentration is happening. Census accords with tax data.
2. Tax system is not undoing high-income concentration.
3. Under-LICO is at lowest point since at least 1976.
4. Refundable tax credits doing a lot of work at the bottom.
5. Provincial policies have scope to affect inequality—at least at bottom.

Discussion

- Is inequality a “problem” to be “solved”?
- How much revenue would be raised by higher taxes on high earners?
- Canada has sharply less progressivity than US for the top 1% of earners. Why?

US tax system not directly comparable, but still interesting to observe:

US Federal Tax Brackets, single filer, 2013

$0 to $8,925*:	10%
$8,925* to $36,250:	15%
$36,250 to $87,850:	25%
$87,850 to $183,250:	28%
$183,250 to $398,350:	33%
$398,350 to $400,000:	35%
$400,000+:	39.6%