Technical Annex to the Viewpoint

"Does Economic Growth Benefit the Poor?"
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1. The share of the population with low income and the persistence of low income

In order to analyze the link between the persistence and the prevalence of low income with GDP per capita, we used data from Statistics Canada.

To analyze the portion of the population with low income, we used the rate of people with low income after tax.[1]

To analyze the persistence of poverty, we used data from Statistics Canada longitudinal studies on low income following declarers over periods of 8 years and counting periods passed in low income situations.[2] By persistence, we mean a taxfiler who spent between 5 and 8 years in a situation of low income during the 8-year period.

We then crossed these data with per capita GDP by looking at the provinces. For GDP, we used the gross domestic product at market prices expressed in constant 2007 dollars. The growth rates measure the change between the average level for the period for the first cohort and the average level for the period for the last cohort.

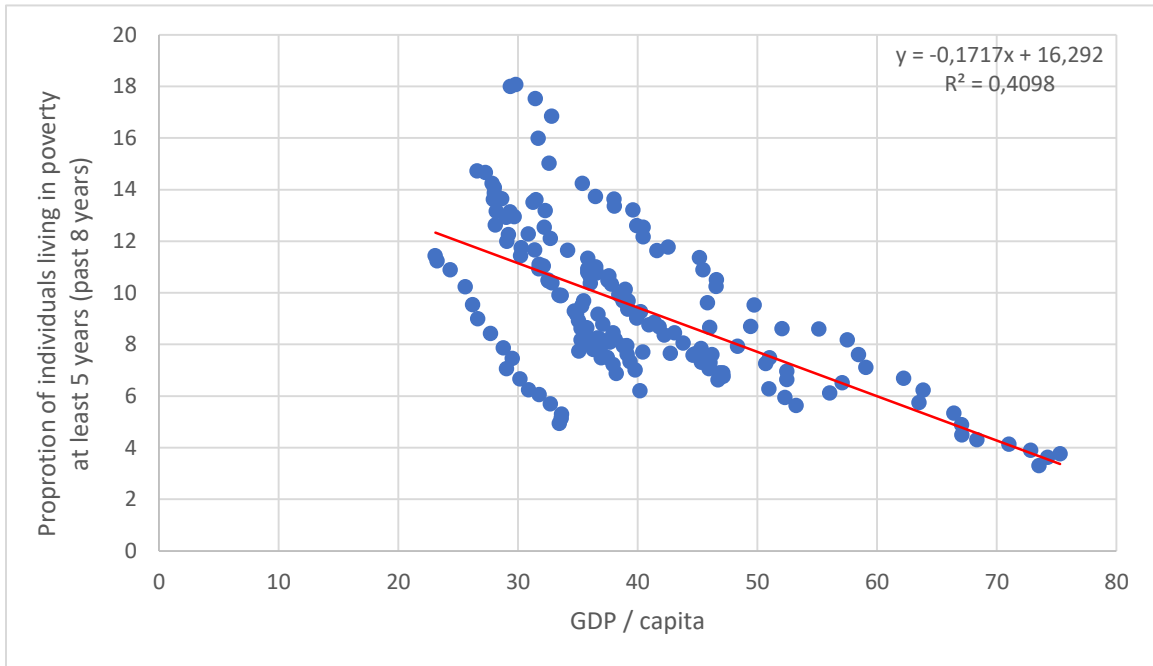### 2. A statistical link established between per capita GDP and poverty

As shown in Figure A-1, the link is very strong, and negative, between per capita GDP and the persistence of low income as we measure it. The relation seems causal since we used the level of per capita GDP (in thousands of dollars) for the start of the 8-year period during which the taxfilers' incomes are tracked. The general economic context thus plays a major role in explaining individual trajectories related to poverty. In other words, when the general economic situation is good, the circumstances of people at the bottom of the ladder improves. The coefficient of the curve in Figure A-1 is -0.18, which indicates that for the period from 1999 to 2015, an increase of $1,000 in the per capita GDP of the Canadian provinces entails on average a drop of 0.17 percentage points in

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[1] Statistics Canada, CANSIM Table 206-0041: Low income statistics by age, sex and economic family type, Canada, provinces and selected census metropolitan areas (CMAs), Low income cut-offs after tax, 1992 base, 1991-1995 to 2011-2015.

[2] Statistics Canada, CANSIM Table 204-0102: Low income persistence of taxfilers in Canada, provinces, census metropolitan areas (CMA), Low income measure fixed in 2002, 1992-1999 to 2008-2015.

the proportion of individuals in a low income situation for 5 years or more. The GDP level explains 41% of the annual variation in the level of persistence of poverty (R^2 = 0.41).
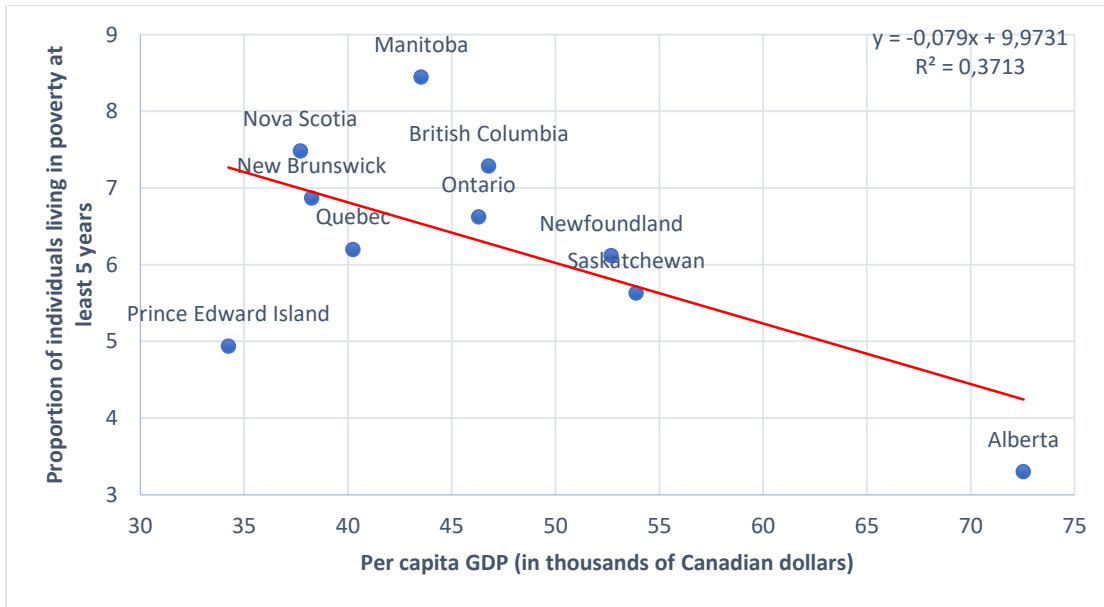
Figure A-1: Link between per capita GDP and the proportion of individuals lived in poverty for between 5 and 8 years, 1992-1999 to 2008-2015

Source: Statistics Canada, CANSIM Table 204-0102: Low income persistence of taxfilers in Canada, provinces, census metropolitan areas (CMA), Low income measure fixed in 2002, 1992-1999 to 2008-2015; Statistics Canada, CANSIM Table 384-0038: Gross domestic product, expenditure-based, provincial and territorial, in constant 2007 dollars, 1992-2015; Statistics Canada, CANSIM Table 051-0001: Estimates of population, by age group and sex for July 1, Canada, provinces and territories, 1992-2015.

Figure A-2 presents just one period of tracked individual incomes (2008-2015) and compares the situation across provinces. We observe that the richer the province is, the smaller the proportion of individuals in lasting low-income situations.

Figure A-2: Relation between per capita GDP and the persistence of poverty (5 years or more), 2008-2015

Tables A-1 and A-2 provide an overview of the long-term evolution of the two indicators that we used to measure poverty (with the same sources). They both show that the circumstances of low-income people in each province is strongly linked to the growth of per capita GDP.

Table 1: Evolution of per capita GDP and the persistence of low income, 1999-2015 (average over 8 years)

Provinces	Per capita GDP	Between 5 and 8 years of low income
Newfoundland and Labrador	+ 61.37%	- 66.00%
Prince Edward Island	+ 33.27%	- 56.83%
New Brunswick	+ 32.51%	- 53.35%
Saskatchewan	+ 31.56%	- 59.01%
Manitoba	+ 30.84%	- 37.90%
Nova Scotia	+ 30.39%	- 46.01%
British Columbia	+ 29.13%	- 24.77%
Quebec	+ 26.60%	- 52.81%
Alberta	+ 23.01%	- 61.60%
Ontario	+ 21.58%	- 14.44%

Table 2: Evolution of per capita GDP and low income rate, 1985-2015 (annual data)

Provinces	Per capita GDP	Low income rate
Newfoundland and Labrador	+ 98.1%	- 64.3%
Saskatchewan	+ 75.0%	- 56.4%
Prince Edward Island	+ 69.8%	- 25.9%
New Brunswick	+ 57.6%	- 38.8%
British Columbia	+ 49.1%	- 22.5%
Manitoba	+ 46.2%	- 27.5%
Alberta	+ 45.9%	- 51.2%
Quebec	+ 44.1%	- 35.7%
Nova Scotia	+ 43.2%	- 37.6%
Ontario	+ 35.0%	- 10.6%