Consumption Inequality in Canada, 1997-2009

Sam Norris and Krishna Pendakur

Inequality has rightly been called one of the major public policy challenges of the twenty-first century. In all member countries of the Organisation for Economic Co-operation and Development, including those in egalitarian Scandinavia, income inequality as measured by the Gini coefficient has risen since the early 1980s.[1] The breadth of this rise speaks to its importance for public policy. However, much public discourse on the subject has elided the difference between consumption inequality and income inequality, which turns out to be quite important in understanding the changing nature of economic inequality.

In this chapter, we provide a brief summary of Norris and Pendakur (forthcoming), where we examine in detail the evolution of household consumption inequality in Canada over the period from 1997 to 2009.

Changes in data collection and processing procedures in the Survey of Household Spending complicate comparisons of data before versus after 2006. However, we find that the Gini for consumption inequality rose sharply between 1997 and 2006, matching the increase in after-tax income inequality that emerged with the tax and transfer cuts of the late 1990s. Between 2006 and 2007, we see a decrease in measured consumption inequality, but this is coincident with a change in data processing procedures, so we are not confident that this is really a reduction in inequality. Over the period between 2007 and 2009, however, data processing procedures were again stable, and the consumption inequality measure changes very little, matching the relative stability of income inequality in the same period. Thus, the consumption inequality patterns support the overall conclusions from income data presented in this volume: inequality rose in the late 1990s and stabilized after the mid-2000s.

Income inequality and consumption inequality are best understood as two sides of the same coin. The goal in both cases is to measure the variation in resources available to different members of society. In a world with perfect data, we would like to compare the *lifetime income* — sometimes referred to as *permanent income* in the economics literature — of each household, which is equal to the household's total income over the lifetime, adjusted for when the household receives it.[2] This, of course, is not feasible: to calculate today's level of inequality based on this measure, we would have to wait for the death of everyone currently alive, observing their income in each year. Instead, proponents of income inequality indicators implicitly take the view that a good estimate of lifetime income is today's income, and they use a measure of the variability of income across the distribution such as the Gini coefficient. There are, however, a number of problems with this view. First, income typically changes dramatically over the life cycle — for instance, as a result of transitions from school to work and from work to retirement — so changes in the age structure of the population can make comparisons over time difficult. Second, income also fluctuates from year to year due to transitions between jobs, inheritances and bequests, and variable amounts of overtime worked. This variability could be overcome by averaging a household's income over several years, but the most commonly used sources of income data recruit a new sample of households for each survey, rather than following the same household over time. In practice, then, there is more variation in *annual* income across the population in any given year than there is in *lifetime* income, and thus measured inequality is likely to be higher when based on annual income than when based on lifetime income.

An alternative approach to measuring lifetime income inequality is to measure inequality in *consumption*. The rationale is that households make consumption decisions with the knowledge of both current savings and expected future income and costs, and that this reflects lifetime income better than income in a given year. A good proxy for lifetime income, then, is simply total household expenditure for the year. There are limits to how much consumption reflects future income, to the extent that households often cannot borrow against high future wages, but there is evidence that lifetime income and consumption are more closely correlated than lifetime income and income in a given year.

Measurements of consumption have the added advantage of better reflecting net government transfers (taxes, tax rebates and subsidized goods such
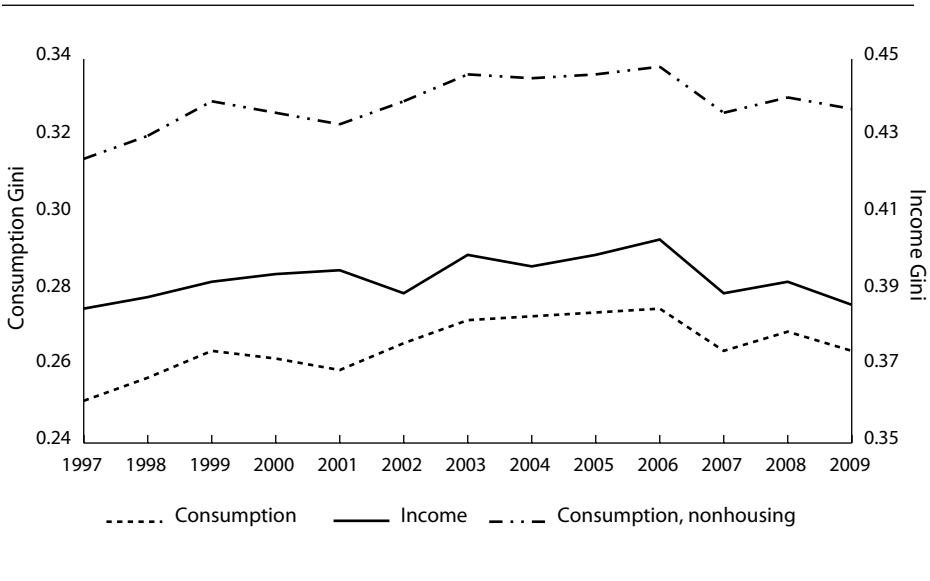
as housing) and income from illegal or informal sources. Since most income inequality measures are estimated from survey data, any sources of income that are not well understood by the respondent or are known to be illegal are unlikely to be reflected in total income. Consumption, however, is typically recorded by asking respondents how much they have spent on each of a number of categories of goods over the past month or year, and so is unlikely to be affected by the source of the income used to buy the goods.

In Norris and Pendakur (forthcoming), we define consumption as the sum of all expenses for the calendar year, excluding long-term "capital" expenses such as vehicle purchases and contributions to Registered Retirement Savings Plans and savings accounts.[3] Importantly, we exclude mortgage payments (both interest and principal), as these represent direct investment and investment servicing. Instead, we impute the consumption value of housing for homeowners from the rent paid by renters for similar units in the same city.[4] We define income as before-tax earnings from wages, investments and government transfers.

We use household-level data on consumption expenditures from Statistics Canada's Survey of Household Spending. We adjust for consumer prices at the province level and over time, so that we consider real consumption inequality. Figure 1 shows the path of income inequality and consumption inequality over the period from 1997 to 2009. Here, we see that household-level consumption inequality in Canada, as measured by the Gini coefficient, rose steadily from 1997 to 2006, may have fallen between 2006 and 2007, and was flat from 2007 to 2009. We suspect, however, based on the longer time trends in income inequality presented by Heisz, and Heisz and Murphy (both in this volume), that the rise in consumption inequality started a few years earlier.

We find that, over our study period from 1997 to 2009, the Gini coefficient of household consumption inequality increased from 0.251 to 0.264. There was a large run-up in inequality over 1997 to 2006, when the Gini coefficient increased by 0.024 points, leaving it at 0.275 in 2006. This increase is quite large when compared with both cross-country Gini differences and historical changes within Canada. For example, the consumption Gini in Canada is about 0.07 points lower than that in the United States and about 0.06 points higher than that in Scandinavia. Pendakur (2002), in his investigation of consumption inequality over the 1970s to the 1990s, found that that the Gini coefficient declined by 0.016 points from its peak in 1986 to 1997. In other words, the increase in the

Figure 1
Household consumption inequality and income inequality, Canada, 1997-2009

Source: Authors' calculations based on Statistics Canada, Survey of Household Spending, 1997-2009.
Note: Data on income and nonhousing consumption are nominal. Consumption data are deflated using the household-specific Stone Index.

Gini coefficient after 1997 was about 50 percent larger than the decrease in the previous decade, and represented more than one-third of the difference in the Gini between the US and Canada.

From its peak in 2006, we find that measured consumption inequality declined somewhat, with the Gini coefficient dropping by 0.011 between 2006 and 2007. There were important changes in Statistics Canada's surveying and data processing techniques implemented in 2007, however, which may have reduced measured inequality from 2006 to 2007 even if "true" consumption inequality was unchanged. In particular, Statistics Canada introduced computer assistance to its balance edit process, which reduced measurement error in many more records than did the manual procedures previously used. Less measurement error typically implies less measured inequality. Thus, we are not completely confident that this decrease in measured consumption inequality between 2006 and 2007 represents a true reduction in inequality, and conclude cautiously that consumption inequality may have decreased over these two years. However,

there were no further changes in Statistics Canada's methodology after 2007, and we find that between 2007 and 2009, measured consumption inequality was stable. Thus, we are confident that consumption inequality was flat (and thus not increasing) during this period.

These changes in inequality were driven primarily by changes in real consumption, rather than by changes in prices.[5] In particular, the increase in consumption inequality was not driven by increases in the prices of necessities, which hurt poor households more than rich households. Figure 1 also shows the path of nonhousing consumption inequality, defined as the Gini coefficient for all expenditures except housing. Despite the run-up in housing prices over the period, nonhousing consumption inequality increased slightly more rapidly than overall consumption inequality. In other words, buoyant housing prices in Vancouver, Toronto and other major cities do not appear to have contributed to increasing consumption inequality, at least in the years before 2010.

Before-tax household income inequality followed a similar pattern, with the Gini coefficient increasing from 0.385 in 1997 to 0.403 in 2006, before declining to 0.386 in 2009. The increase of 0.018 from 1997 to 2006 was smaller than that recorded for consumption inequality over the same period, while the overall increase of 0.001 over the whole 13-year period is statistically indistinguishable from zero.[6]

The latter result is surprising for two reasons: it is at odds with the popular impression of a large increase in inequality over this period, and it differs significantly from what we observed in the United States over the same period. In that country, consumption inequality followed a similar hump-shaped pattern, peaking in 2005 but falling to the 2000 level by 2011. Income inequality, however, grew steadily over the entire period, with only a brief pause in 2006 and 2007. Overall, consumption inequality grew less than income inequality in the United States over our study period.

As we explain in more detail in Norris and Pendakur (forthcoming), we believe there are three main reasons for the differences in inequality trends in the two countries. First, unemployment increased by much less in Canada (from 6 percent to 8 percent) than in the United States (from 4.5 percent to 10 percent) during the Great Recession, and as unemployment and income inequality are strongly positively correlated, this is likely part of the story.

Second, and in contrast to the first half of the 2000s, in Canada after 2005, wages, and particularly wages of women, increased more at the bottom of the
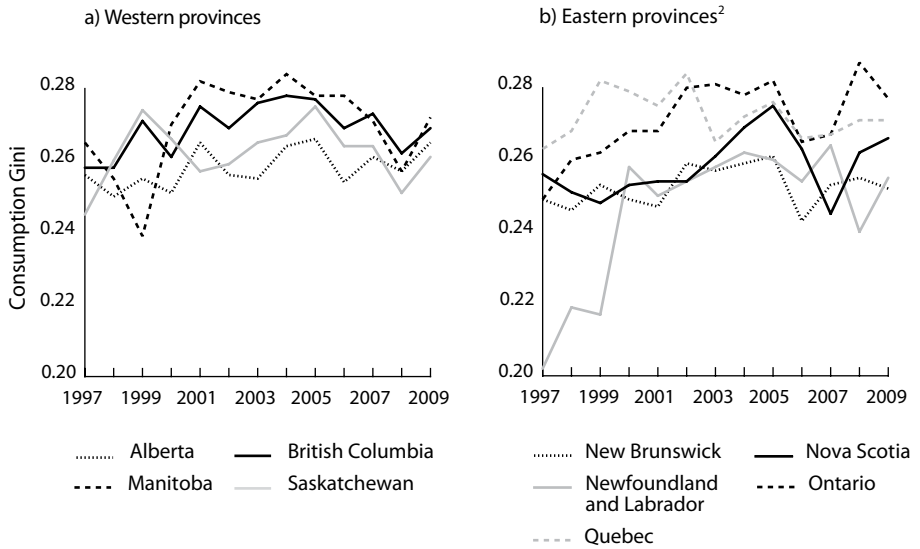
wage distribution than at the top. Since women tend to earn less than men, wage growth for low-income women decreased inequality even more than wage growth for low-income men. Fortin and Lemieux (forthcoming) find that most of this is due to increases in the minimum wage since the midpoint of the decade in all provinces except British Columbia, which increased its minimum wage in 2011 (see the summary in this volume).

Third, and more speculatively, that consumption inequality in Canada rose more than income inequality suggests some aspects of social insurance might be weakening. At an aggregate level, Heisz and Murphy (in this volume) show that the size of government transfers has declined since the mid-1990s, and that they mitigate income inequality less now than they did 20 years ago. We also know that household debt has increased significantly in the past 15 years, which suggests that households might be offsetting relative income declines with consumption from debt.

As far as differences in household consumption inequality by province over the study period are concerned (figure 2), there are several important points to note. First, inequality grew by an order of magnitude faster in Newfoundland and Labrador than in the rest of the country. The increase was concentrated in the late 1990s and corresponds with the beginning of the expansion of the oil and gas sector in the province in 1997. The effect of that sector's growth on reducing unemployment in the late 1990s, however, was probably not enough to explain an increase in inequality of this size: the unemployment rate fell from 15.3 percent in 1997 to 12.0 percent in 2000, the period during which inequality increased the most. Instead, it seems likely that the increase in consumption inequality came largely through income channels, as average pre-tax household income increased by 33 percent during those four years.

Second, rising consumption inequality is widespread across provinces until the mid-2000s, followed by a decline in inequality in some provinces and relative stability in others. This might be due partly to increases in the minimum wage in the mid-2000s, but the timing suggests that declining unemployment also played a role. Comparisons between provinces show that larger reductions in inequality since 2005 are correlated with lower unemployment. Ontario, which was perhaps hit hardest by the 2008 recession, was one of the few provinces where consumption inequality did not appreciably decline after 2005.

Figure 2
Household consumption inequality[1] by province, Canada, 1997-2009

a) Western provinces   b) Eastern provinces[2]

.... Alberta   British Columbia   .... New Brunswick   Nova Scotia
- - - - Manitoba   Saskatchewan   Newfoundland   - - - - Ontario
                                                                 and Labrador
                                                       - - - Quebec

Source: Authors' calculations based on Statistics Canada, Survey of Household Spending, 1997-2009.
[1] Consumption data are deflated using the household-specific Stone Index.
[2] Prince Edward Island is not included due to lack of data.

Finally, the provinces' ranking in terms of consumption inequality remained quite stable. The only exception is Ontario, which went from being the 6th most unequal to the most unequal of 9 (we exclude Prince Edward Island because of a lack of data). The other provinces all stayed within one or two positions of their 1997 ranking. For example, consumption inequality in British Columbia rose from 0.258 in 1997 to 0.269 in 2009, but its rank was 4th most unequal in both years. Most strikingly, despite the substantial and rapid increase in consumption inequality in Newfoundland and Labrador, the province moved only from being least unequal to 2nd least unequal.

In summary, in Norris and Pendakur (forthcoming) we present evidence that household consumption inequality increased sharply in Canada over the period from 1997 to 2006, may have declined between 2006 and 2007, and held steady between 2007 and 2009. We also find that the pattern of increase in consumption inequality was relatively consistent across provinces.

Both income inequality and consumption inequality increased significantly in the years to 2006, matching trends found by Heisz (in this volume) and others.

However, we observe a small decrease in consumption inequality from 2006 to 2007, which other researchers have not duplicated. We speculate that it may be due to changes in survey practices between the two years. We find inequality remained stable between 2007 and 2009. Our overall picture, then, is one of increasing consumption inequality over the late 1990s and early 2000s and flat (or possibly declining) consumption inequality in the late 2000s, resulting in a moderate increase in consumption inequality over the entire period.

The moderate increase in consumption inequality overall is likely related to relatively high wage growth among poorer households over the period and to increases in the minimum wage in many provinces after 2005. Given worldwide trends in within-country income inequality, however, it is hard to believe that the stability observed in more recent years signals the end of increasing consumption inequality. We hope that the evidence presented here will help spur policy action to reduce economic inequality in Canada over the next decade.

Notes

1. The Gini coefficient measures the distance between the observed distribution and complete equality; 0 corresponds to perfect equality, while 1 corresponds to all income (or consumption) belonging to one household.
2. This captures the intuition that income today is more valuable than income tomorrow.
3. We also exclude several small-share items for which we could not find adequate price data: household operations, union dues and gambling.
4. Mortgage and upkeep payments by homeowners typically do not reflect the value of the housing, because many homeowners have either paid off their mortgage or are using the house as a savings vehicle. We therefore estimate housing value from the rental price of similar rented houses, accounting for the difference in quality between rented and owned accommodation.
5. In our results, prices vary between provinces and over time for the 10 major components of household spending. We exclude Prince Edward Island from all analysis for data availability reasons, and deflate expenditures with a Stone price index. However, reasonable variations on these choices do not affect our results.
6. We note that other recent work has found rising income inequality in Canada over the same period. We take this finding as a valuable reminder that the precise type of income inequality being measured is important, and that these results apply strictly to before-tax household income inequality.

References

Fortin, N.M., and T. Lemieux. Forthcoming. "Changes in Wage Inequality in Canada: An Interprovincial Perspective." *Canadian Journal of Economics*.

Norris, S., and K. Pendakur. Forthcoming. "Consumption Inequality in Canada, 1997-2009." *Canadian Journal of Economics*.

Pendakur, K. 2002. "Taking Prices Seriously in the Measurement of Inequality." *Journal of Public Economics* 86 (1): 47-69.