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SOME OBSERVATIONS ON THE CONCEPT AND MEASUREMENT OF INCOME INEQUALITY

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SUMMARY

Income inequality and redistribution have become popular subjects in both public and policy circles in the wake of concerns over apparent concentration of wealth. However, a reasonable discussion of this subject is often hampered by a lack of a clear conceptual framework and relevant facts. First, income inequality is a relative concept that can only be measured relatively by statistical tools like the Gini coefficient; used alone, these do not provide context for the results. Second, there is no single agreed-upon goal for income redistribution; different approaches invariably involve value judgments based on ethical or political theories that can differ widely on the crucial questions of why and how much redistribution should be sought. Third, the importance of this issue requires that measurements of the scale and absolute amount of existing income redistribution be utilized to inform the discussion. This communiqué takes a sober look at facts relating to income inequality and redistribution in Canada and applies methodology to reveal that, while the scale of income redistribution has declined since 1994, growth in real income since then has done much to compensate in maintaining levels of absolute income redistribution that are high by historical standards.

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Over the last number of months there have been indications of an increase in interest in the subject of income inequality in Canada.[1] This may have been, to some extent, precipitated by recent studies showing an increase in measures of income inequality both in Canada and, more generally, around the world.[2]

Much of the interest in this subject, of course, has been masked in public discourse and the media by the very substantial and severe economic and fiscal problems currently facing many developed countries — particularly the sovereign debt crisis in Europe and debate over government finances and the economy in the United States. Nevertheless, the subject of income inequality can sometimes be closely related to these other issues, such as in the US, where the question of whether or not to increase income taxes on the rich has become entwined with the debate about government finances. We should, therefore, reasonably expect the subject of income inequality to continue to receive attention in public policy and political discussion, both because of the inherent interest it attracts and because of its relation to broader economic and fiscal issues of the day.

But what is this discussion of income inequality actually about? What is the import of recent measurements of income inequality? And what, if any, analytic basis can be used to inform the discussion in the consideration of the formulation of public policy?

The following brief discussion, while not attempting to plumb the depths of these difficult and complex questions, will offer some observations relating to the concept and measurement of income inequality, which are intended to contribute to formulation of a better analytical framework for ongoing public policy discussion and consideration of this issue.

FIRST OBSERVATION: Income inequality is inherently a relative concept, and attempted measures of income inequality in a given population show only relative relationships. The analysis of the quantum of income inequality among individuals or families in any particular population will show only the distribution of income — that is, the relative income-level differences of the individuals or families involved, while these measures themselves tell us nothing about the absolute level of income. This may seem a trivial point, but it is not. Ignoring or de-emphasizing the fact that the concept of economic and income inequality is about relative values often leads to confusion and obscurity in discussion and in policy consideration and development, because it tends to be detached from real economic conditions. For example, discussions of income inequality within richer countries with strong economies — where there is a larger pie to divide — should be of a quite different nature than discussions of income inequality within poorer countries with weak economies — where the pie is meagre to begin with. And then there is another, entirely different discussion about income distribution as among different countries.

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[1] See Conference Board of Canada (2011), *Hot topic: World Income Inequality*. Retrieved November 10, 2011, from http://www.conferenceboard.ca/hcp/hot-topics/worldInequality.aspx; and Conference Board of Canada (2011), *Hot topic: Canadian Income Inequality*. Retrieved November 10, 2011, from http://www.conferenceboard.ca/hcp/hot-topics/canInequality.aspx

[2] *Growing Unequal: Income Distribution and Poverty in OECD Countries* (Paris: OECD, 2008); and M. Frenette, D. A. Green and K. Milligan, "Taxes, Transfers, and Canadian Income Inequality," *Canadian Public Policy*, 35 No. 4 (2009), 389-411.

The relative nature of income inequality is represented in the types of measures which are commonly used to provide data regarding its extent and change over time within particular populations. A very commonly used measure of income inequality is the Gini coefficient, named after the Italian sociologist and statistician Corrado Gini. The Gini coefficient is a measure of statistical dispersion — that is, the evenness of a distribution of a particular variable over a population, with the coefficient 1 representing maximum uneven, or unequal, distribution, and the coefficient 0 representing completely even, or equal, distribution. Other values for the coefficient between 0 and 1 indicate the location of the particular distribution, in terms of inequality, between these extremes.[3]

Of course, what the Gini coefficient, or other measures of pure statistical distribution, cannot provide is any useful information as to the absolute value of the variable which is distributed. The measure uses absolute values of the variable as inputs in its computation, but remains indifferent to these except as to how they are distributed relatively. For example, a rich country producing a large amount of income could have a higher Gini coefficient for income distribution than a poor country producing a small amount of income, yet a large proportion of the individuals living in the poor country would improve their economic welfare if they could move from the poor country to the rich country.

SECOND OBSERVATION: Determination of a correct or appropriate level of income distribution, as a goal in itself, is based on normative judgement derived from an ethical or political framework. Though it is not possible to prove the correctness of the prescriptions of any particular ethical or political framework, and despite their changing attraction, competition and variation over time, various ethical and political theories have clearly exerted a powerful influence throughout recorded history for reduction of wealth and income inequality through legitimized instrumentalities, be that by means of donation, taxation, regulation or confiscation.[4]

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[3] Concerns have been expressed about the use of Gini coefficients for measurement of income inequality, as the results appear to be more sensitive where the distribution is most dense, usually the middle of the distribution, and less sensitive in the high- and low-end tails of the distribution. Frenette, Green and Milligan (see Note 2 above), referring to related earlier work in M. Frenette, D. A. Green and K. Milligan "The Tail of the Tails: Canadian Income Inequality in the 1980s and 1990s," *Canadian Journal of Economics*, 40 No.4 (2007), 734-764, and M. Frenette, D. A. Green and G. Picot "Rising Income Inequality in the 1990s: An Exploration of Three Data Sources," in *Dimensions of Inequality in Canada*, ed. D.A. Green and J.R. Kesselman (Vancouver: University of British Columbia Press, 2006), argue that the Survey of Consumer Finances/Survey of Labour Income Dynamics, upon which Gini coefficient calculations for income distribution are based, suffer from underrepresentation of families at very low and very high incomes, understating the degree of inequality. As an alternative, they used Canadian census data and imputed income taxes to measure income inequality, finding that inequality may be larger and may have increased more over time than the SCF/SLID data suggest, though the overall patterns they find over time appear to be similar. Nevertheless, the Gini coefficient remains a popular measure of income inequality. While the sensitivities of Gini coefficients may present a particular difficulty in discussions about specific issues relating to those with the lowest or the highest incomes, the overall pattern similarity in results provides some additional comfort in their use, particularly for the purposes of a discussion of general income distribution and redistribution trends, such as that undertaken below.

[4] There are other possible rationales that can be adduced for redressing income inequality through redistribution — for example, preventing social unrest, reducing crime, promoting the quality of the labour force, or public insurance of risks. However, these usually have a different underlying motivation, such as self-interest, with redistribution of income produced as a consequence. They also sometimes contain their own normative judgements.

Among some of the most important and influential theories and belief systems that have produced strong views on the need to redress wealth and income inequality are: (i) religions containing ethical prescriptions of assistance to those in need, such as in the Judaeo-Christian tradition,[5] and (ii) theories of political economy relating to the secular organization of society based on ideas such as a social covenant or contract,[6] utilitarianism,[7] distributive justice,[8] and socialism.[9] Of course, there are also theories of political economy (and perhaps religions) that view economic differences as natural, useful or desirable.[10]

By comparison, economic analysis can play an important role in shedding light on many important issues related to inequality of income distribution. However, it is limited in its ability to determine correct or appropriate levels of income distribution in a particular situation.[11] Traditional economics can help explain the existence of income inequality based on certain principles such as scarcity operating in a free market for exchange. Various economic actors have scarce and different labour knowledge, talent and skills that will be valued differently in the market and will produce differential economic rewards. Economic actors will also make different consumption and investment decisions over time that will result in differential accumulation of capital. They will, of course, also be affected differently by chance in a way that will increase or reduce their economic wellbeing.

Traditional economics can also help explain how actions that increase equality of distribution of income as otherwise determined through free market allocation will usually reduce economic efficiency and total economic production. This occurs as a result of funding of redistribution of income through taxation and through the utilization of subsidized goods and services, both of which have distortionary effects on the allocation of resources in the economy. That is not to say that there cannot be increases in equality of income distribution which are related to increases in economic efficiency, such as where an inefficient tax is replaced by a more efficient tax and the gains in overall economic efficiency are used, wholly or partly, to pay for an increase in redistributed income. There are also theories which hold that certain reductions in inequality can increase economic growth, for example by redistribution through public education, skills training or nutritional improvements.

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[5] Consider, for example, the general Christian practice of almsgiving, and the works of mercy, which include feeding the hungry and giving shelter to the homeless.

[6] See, for example, Thomas Hobbes, *Leviathan* (New York: Crowell-Collier Publishing Co., 1967), chapter 17, for the idea that individuals in a state of nature give up their liberty voluntarily by covenant to a greater power, the Commonwealth, in order to protect their lives and property.

[7] See Jeremy Bentham, *An Introduction to the Principles of Morals and Legislation* (New York: Hafner Publishing Company, 1948); and John Stuart Mill, *Utilitarianism* (New York: Liberal Arts Press, 1957).

[8] See John Rawls, *A Theory of Justice* (Cambridge, Mass.: Harvard Press, 1971).

[9] Further reference may be had to examples of some of the various strands of modern socialist thought, as follows: the utopian socialism of Robert Owen, the scientific socialism of Henri de Saint-Simon, the anarchist cooperativism of Pierre-Joseph Proudhon, and the communism of Karl Marx.

[10] Consider, for example, various forms of Libertarianism.

[11] In this regard, it is worth noting that certain approaches to optimal income tax theory attempt to balance efficiency and equity considerations to produce an optimal income tax schedule and income distribution. See, for example, Robin Boadway "Viewpoint: Innovations in the Theory and Practice of Redistribution Policy," *Canadian Journal of Economics*, 44 No. 4, 1138-1183. However, such analyses still require a key assumption relating to vertical equity or similar elements —such as assumption of a utilitarianism framework—, which is itself a normative judgement.

Thus, while there appears today to exist a widespread political and social acceptance, across political jurisdictions, of the need for *some* redress of income inequality through *some* policy of redistribution of income, there is little specific agreement on the amount or nature of redistribution to be targeted, or on a method of analysis that would determine this.

THIRD OBSERVATION: Measuring only the amount of income inequality for a given population has limited use in public policy discussion and consideration. Because this measurement involves only a relative value, and because the correctness or appropriateness of a given target value for income distribution is subject to extreme disagreement based on normative theories or belief systems, more information is required to properly inform public discourse on the subject.[12] In this regard, there are two important elements of additional information which should be incorporated: first, an examination of the scale on which income inequality is already being redressed in a particular population — that is, the scale of redistribution of income already being effected through various instrumentalities; and second, the absolute level of income forming a base for redistribution, and its growth over time.

While there are reasonably good measures of income and its growth available for this purpose, there are formidable challenges to developing useful data on the scale of income redistribution at a point in time and over time. This is mainly because there are several major instrumentalities by which governments (and private economic actors) effect income redistribution, and some of these do not easily lend themselves to effective measurement.

The main instrumentalities for redistribution of income in a modern state can be identified in the following categories:

- Broadly or universally provided public goods or services that are not funded by full and accurate user-pay cost recovery, such as public education and health care, and many municipal services and transportation services;
- Income-tested benefits and transfers provided directly to individuals or families, such as old age benefits, child benefits, and social assistance;
- Various other government transfers and subsidies;
- Progressive taxation and other benefit and transfer elements of the tax system;[13]
- Private voluntary donation of both money and time.[14]

While there are huge data and methodological challenges in providing an overall quantification of the scale of redistribution through some of the instrumentalities in these categories, for example provision of public goods and services, there is readily available data on one substantial element of redistribution in certain countries, in particular, Canada, — that is, redistribution through the tax and transfer system. There can, of course, be an interrelationship between redistribution through taxation and through other instrumentalities used by governments that are funded by tax revenues. Still, measuring redistribution through the tax and related transfer system can be taken as a significant indicator of the scale of redistribution of income being effected in a particular jurisdiction.

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[12] In addition, it is worth bearing in mind that some apparent inequality may be viewed as benign, for example, where it results from differences in family size or accepted age-related differences.

[13] Further complexity is added to the analysis by virtue of the fact that the economic incidence of taxes and transfers can differ from their legal incidence.

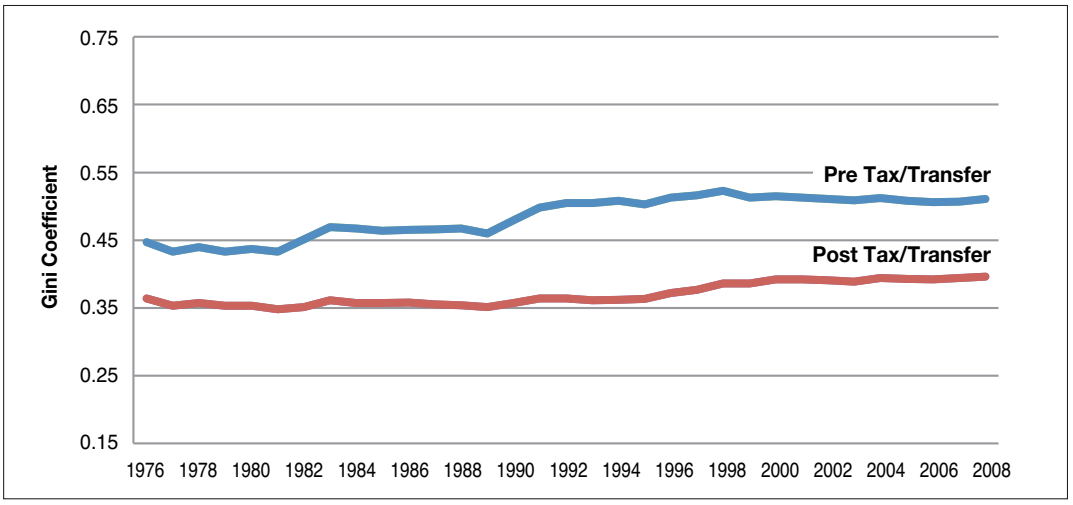
[14] There is some specific interaction here with the tax system, which subsidizes a large category of charitable donation, though much voluntary charitable transfer of time and resources occurs outside this system.

Accepting this approach as imperfect, but still one of the better available ways to measure what governments are actually doing in the way of income redistribution, what can we learn about the situation in Canada?

Recent presentations of Gini coefficient measurements of income inequality in Canada have indicated that such inequality is increasing in Canada.[15] The OECD publication *Growing Unequal: Income Distribution and Poverty in OECD Countries*[16] also uses Gini coefficients, and while the numbers that are calculated there are different than those produced by Statistics Canada, it is asserted that they indicate a similar general trend in OECD countries. It is worth noting in this regard that the OECD Gini coefficient for income inequality in Canada is only slightly above the average coefficient for OECD countries.[17]

Data from Statistics Canada represented in Figure 1 (and set out in detail in Table 1 in the Appendix) shows this trend using Gini coefficients for income distribution from 1976 to 2008, both before the effects of taxation and transfers, and after those effects.[18]

FIGURE 1: GINI COEFFICIENTS FOR INCOME DISTRIBUTION IN CANADA (ALL FAMILIES) 1976-2008



Source: Statistics Canada, CANSIM, Table 202-0705, based on data from SCF and SLID.

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[15] See Note 1 above.

[16] See Note 2 above.

[17] A coefficient of 0.32 for Canada in 2005 compared to the OECD average of 0.31, from the OECD publication referred to in Note 2 above, Table 1.A2.2, p.51.

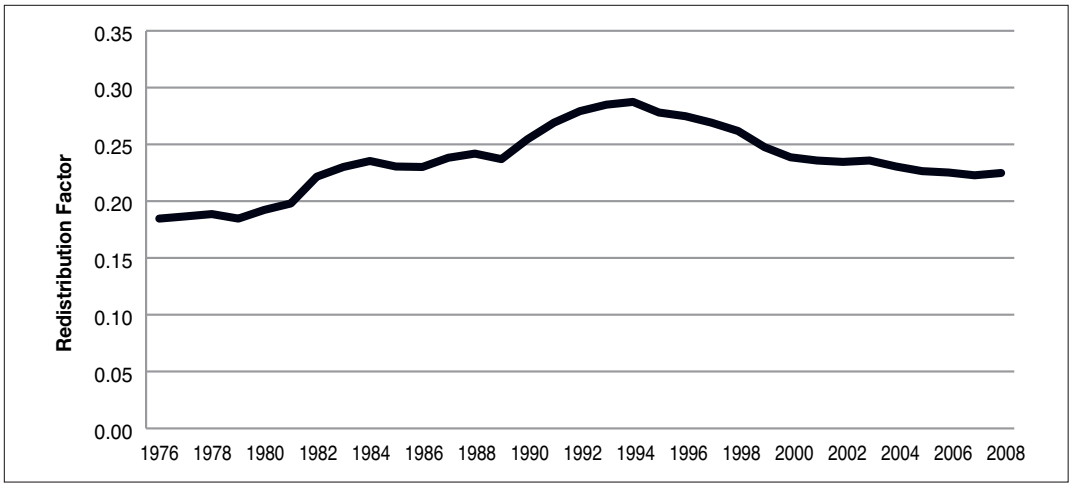
[18] The data used for Figure 1, as set out in Table 1 in the Appendix is for "all families," though similar data is available from StatsCan for "economic families." "All families" includes both "economic families" and unattached individuals. An "economic family" is a group of two or more persons who live in the same dwelling and are related by blood, marriage, common-law, or adoption. An unattached individual is a person living either alone or with others to whom he or she is unrelated, such as roommates or a lodger. The individuals in an "economic family" are weighted by the number of individuals in the family. The rationale for this is that individuals who live together require fewer resources to maintain their standard of living than if they lived in separate dwellings, as they can share resources and share costs. The current weighting scheme of Statistics Canada uses the square-root principle, whereby the weight of an economic family is the square root of the number of individuals in a household. Table 2 in the Appendix sets out Gini coefficients for "economic families."

The discussion below is based on the Gini coefficients in Table 1 for "all families," though the Gini coefficients in Table 2 for "economic families" present a picture that is broadly consistent with that presented by the "all families" data, particularly as to changes over the time frames in question. The main difference between the two sets of data is that the "economic family" data shows a generally lower level of Gini coefficients.

These data present a mixed picture in terms of the growth of income inequality, as measured by Gini coefficients, in Canada over time. They show that there has been an increase in after-tax and transfer Gini coefficients for income inequality over the entire period from 1976 to 2008 of 8.8 percent (13.8 percent from the low point in 1981). However, the increase over the most recently measured period of 10 years (at 2.6 percent) has been somewhat below the longer term trend. Moreover, the after-tax and transfer Gini coefficients do not directly include the effects of instrumentalities of redistribution such as free public services, which further reduce economic inequality.

Still, instead of trying to draw conclusions from this trend alone, this data from Statistics Canada can be utilized to reveal additional information that would be useful for analysis of the issue; in particular, it allows for calculation of a measurement of the scale of income redistribution effected through the tax and transfer system during this same period of time. This can be done by looking at the difference between the pre-tax and transfer inequality measurements and the after-tax and transfer inequality measurements, which represent income redistribution. The results of this calculation are represented in Figure 2 (and set out in detail in Table 1 in the Appendix).[19]

FIGURE 2: REDISTRIBUTION FACTOR R FOR CANADA 1976-2008



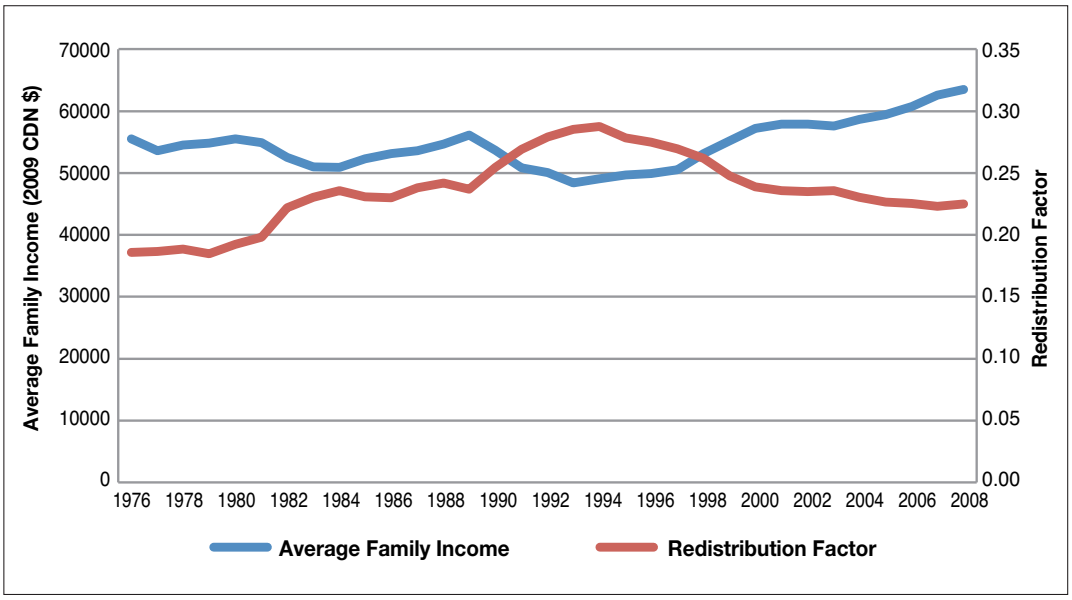
* *The R-factor is calculated using the Gini coefficients used for Figure 1 as set out in Table 1 of the Appendix, and is equal to: (Pre-tax/transfer Gini coefficient minus post-tax/transfer Gini coefficient) divided by pre-tax/transfer Gini coefficient.*

This calculation indicates that, from 1976 to 2008, while income distribution, as measured by Gini coefficients, has been trending to be modestly more unequal, the scale of redistribution of income by government through taxation and transfers has actually increased significantly. Income redistribution in Canada as measured by the R- factor increased from 0.186 in 1976 to 0.225 in 2008 — about 21 percent. This increase represents part of an even larger increase that occurred in the period prior to the mid-1990s; the high-water mark for redistribution scale as measured by the R-factor was, in 1994, at 0.287, after which a decline occurred. The period leading up to 1994-1995 had seen substantially increased government spending, which was increasingly funded by an unsustainable growth in government borrowing. Beginning around 1994-1995, this spending trend was cut back to avoid a government debt crisis. As noted above, this data does not directly include the effects of instrumentalities of redistribution such as free public services.

[19] Table 2 of the Appendix includes calculations of the Redistribution Factor R based on the Gini coefficients set out in that Table — that is, based on the data for "economic families." The results of this calculation present a picture that is broadly consistent with that presented by the R Factor calculations in Table 1 of the Appendix.

This analysis can be further amplified by bringing into consideration another set of empirical data, which shows the level of and change in average per-family income[20] over the time period in question. Figure 3 shows the level and growth of pre-tax and transfer family income in Canada, on a constant dollar basis over the period of measurement, of income inequality and redistribution, from 1976 to 2008, (details of which are set out in Table 3 in the Appendix). This data is broadly indicative of the absolute amount of income that is available for and subject to redistribution.

FIGURE 3: AVERAGE FAMILY INCOME AND REDISTRIBUTION FACTOR 1976-2008



Sources: Average family income in 2009 constant dollars from Statistics Canada, CANSIM, Table 202-0202, based on data from SCF and SLID; Redistribution Factor from Figure 2 above.

While experts in statistics and econometrics may have recourse to, or be able to develop, better and more precise tools for quantifying absolute income redistribution levels, it does not seem unreasonable to make some basic inferences about growth in the absolute amount of income redistribution by governments in Canada through this period by combining the effect of the change in the scale of redistribution each year, as indicated by the redistribution factor R, with the effect of the change in the average family income base before tax and transfers in the year. This can be accomplished by multiplying these two elements in each year, and calibrating the results to a starting index level of 1.00 for 1976.[21]

[20] The following discussion is based on data for "all families," as set out in Tables 1 and 3 of the Appendix.

[21] Table 3 in the Appendix sets out Redistribution Index numbers for the entire period, which are calculated according to the formula set out in the Note following the Table.

This approach indicates that the absolute level of income redistribution in Canada, on a per-family basis, grew fairly consistently from the mid-1970s through to the mid-1990s (when the index level went from 1.00 in 1976 to 1.365 in 1994). This appears to have occurred solely as a result of the increasing scale of redistribution, as the base measured by real income actually declined during this period. While there was then some falloff in the level of absolute per-family redistribution indicated beginning around 1995 (due to the reduction in scale of redistribution discussed above), this falloff was muted as a result of a compensating increase in the real per-family income base from 1995 onward. The absolute level of redistribution appears never to have dropped below that achieved in 1989 (index of 1.288); and strong family real income gains in the last few years of the measured period have brought the level for the absolute income redistribution index in 2008 to 1.384, in the same range as its peak in 1994.

These trends in redistribution appear to be, in broad terms, consistent with the analysis of Frenette, Green and Milligan.[22] They used their own methodology based on census data and imputation of taxes to analyze income inequality and redistribution in the 1980s and 1990s. From this, they concluded that the Canadian tax and transfer systems after 1990 were "substantially more redistributive" than those in the 1980s. While the 2000 system represented reduced redistribution as compared to the high point in 1995 for those systems they analyzed, it was much more redistributive than the system of 1980 and possibly more redistributive than the system of 1990.[23]

Concluding Observation

While there are normative ethical or political frameworks that can attempt to justify further redress of income inequality through increased redistribution in almost any situation, analysis of the measureable trends in income inequality and redistribution in Canada discussed above does not necessarily lend support to such an approach for Canada at this time. While it is the case that after-tax and transfer inequality has increased in Canada over the long term, from 1976 to 2008, including a smaller increase in the most recently measured 10-year period, the scale of redistribution over the same period increased at a much faster rate. And even with the scale of redistribution having decreased since 1994, the absolute growth in real income after that date appears to have compensated significantly for this effect, maintaining the absolute amount of redistribution above the level at the end of the 1980s, and recently increasing it to the range of the high point of absolute redistribution in 1994.

Consequently, consideration of any changes to current public policies in this area ought to proceed with great caution.

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[22] Reference in Note 2 above; also see Note 3 above.

[23] Note in this regard that they did not analyze tax and transfer systems more recent than the year 2000. They also go on to conclude that the decline in redistribution in the tax and transfer systems after 1995 was mostly due to provincial actions, such as reductions in social assistance.

APPENDIX

TABLE 1: INCOME DISTRIBUTION (ALL FAMILIES) AND REDISTRIBUTION IN CANADA, 1976-2008

Year	Gini Pre- tax/transfer	Gini After- tax/transfer	R Redistribution Factor
1976	0.447	0.364	0.186
1977	0.434	0.353	0.187
1978	0.440	0.357	0.189
1979	0.433	0.353	0.185
1980	0.437	0.353	0.192
1981	0.434	0.348	0.198
1982	0.451	0.351	0.222
1983	0.469	0.361	0.230
1984	0.467	0.357	0.236
1985	0.464	0.357	0.231
1986	0.465	0.358	0.230
1987	0.466	0.355	0.238
1988	0.467	0.354	0.242
1989	0.460	0.351	0.237
1990	0.479	0.357	0.255
1991	0.498	0.364	0.269
1992	0.505	0.364	0.279
1993	0.505	0.361	0.285
1994	0.508	0.362	0.287
1995	0.503	0.363	0.278
1996	0.513	0.372	0.275
1997	0.516	0.377	0.269
1998	0.523	0.386	0.262
1999	0.513	0.386	0.248
2000	0.515	0.392	0.239
2001	0.513	0.392	0.236
2002	0.511	0.391	0.235
2003	0.509	0.389	0.236
2004	0.512	0.394	0.230
2005	0.508	0.393	0.226
2006	0.506	0.392	0.225
2007	0.507	0.394	0.223
2008	0.511	0.396	0.225

TABLE 2: INCOME DISTRIBUTION (ECONOMIC FAMILIES) AND REDISTRIBUTION IN CANADA, 1976-2008

Year	Gini Pre- tax/transfer	Gini After- tax/transfer	R Redistribution Factor
1976	0.387	0.306	0.209
1977	0.368	0.290	0.212
1978	0.374	0.293	0.217
1979	0.367	0.292	0.204
1980	0.371	0.291	0.216
1981	0.370	0.290	0.216
1982	0.390	0.294	0.246
1983	0.403	0.301	0.253
1984	0.404	0.300	0.257
1985	0.399	0.297	0.256
1986	0.400	0.298	0.255
1987	0.399	0.296	0.258
1988	0.396	0.290	0.268
1989	0.393	0.290	0.262
1990	0.410	0.296	0.278
1991	0.428	0.301	0.297
1992	0.435	0.300	0.310
1993	0.435	0.300	0.310
1994	0.435	0.299	0.313
1995	0.435	0.300	0.310
1996	0.443	0.310	0.300
1997	0.444	0.314	0.293
1998	0.452	0.322	0.288
1999	0.439	0.317	0.278
2000	0.444	0.327	0.264
2001	0.445	0.327	0.265
2002	0.445	0.329	0.261
2003	0.441	0.324	0.265
2004	0.445	0.329	0.261
2005	0.439	0.325	0.260
2006	0.437	0.323	0.261
2007	0.437	0.324	0.259
2008	0.447	0.331	0.260

TABLE 3: INCOME (ALL FAMILIES) AND REDISTRIBUTION IN CANADA, 1976-2008

Year	Average per Family Pre-Tax and Transfer Income (2009 dollars)	Redistribution Index
1976	55500	1.000
1977	53600	0.971
1978	54500	0.998
1979	54800	0.982
1980	55500	1.032
1981	54900	1.053
1982	52500	1.129
1983	51000	1.136
1984	50900	1.164
1985	52300	1.170
1986	53100	1.183
1987	53600	1.236
1988	54700	1.282
1989	56100	1.288
1990	53700	1.327
1991	50800	1.324
1992	50100	1.354
1993	48400	1.336
1994	49100	1.365
1995	49700	1.338
1996	49900	1.329
1997	50500	1.316
1998	53100	1.348
1999	55200	1.326
2000	57200	1.324
2001	57900	1.324
2002	57900	1.318
2003	57600	1.317
2004	58700	1.308
2005	59400	1.300
2006	60700	1.323
2007	62600	1.352
2008	63500	1.384

Data Sources and Calculations

Gini coefficients: Statistics Canada. 2011. *Gini Coefficients of Market, Total and After-Tax Income, by Economic Family Type, Annually (Number)* (CANSIM Table 202-0705). Ottawa: Statistics Canada;

Average family income (all families): Statistics Canada 2011. *Average Market Income, by Economic Family Type*, 2009 Constant Dollar, Annually CANSIM Table 202-0202. Ottawa: Statistics Canada.

Redistribution Factor R for a year is calculated to equal: (pre-tax and transfer Gini coefficient for the year minus after-tax and transfer Gini coefficient for the year) divided by pre-tax and transfer Gini coefficient for the year.

Redistribution Index for a year is calculated to equal: (R Factor for the year multiplied by the all families average pre-tax and transfer income for the year) divided by (1976 R Factor multiplied by the 1976 all families pre-tax and transfer average income).

About the Author

Stephen R. Richardson recently retired as Associate Deputy Minister, Department of Finance, Government of Canada, following a long career in public service and private practice.

He is an Executive Fellow at the School of Public Policy, University of Calgary.

Prior to his appointment as Associate Deputy Minister in 2007, Mr. Richardson was Director and Chief Executive Officer of the Canadian Tax Foundation, an independent tax research organization that provides the public and the Government of Canada with expert impartial tax research on current issues of taxation and government finance.

From 2001 to 2003, Mr. Richardson served as Senior Assistant Deputy Minister, Tax Policy, at the Department of Finance, Canada.

From 1975 to 2001, Mr. Richardson was engaged in the practice of tax and corporate law with Torys LLP (from 1981 as a partner) in Toronto, where he focused on the taxation aspects of corporate finance, mergers and acquisitions and other corporate transactions, with emphasis on international transactions.

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