Wealth inequality by province

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Income is a major indicator of the economic well-being of families. But income measures only short-term inflows that affect current consumption and saving. Wealth, on the other hand, measures the surplus accumulated by families and thus provides a better indicator of long-term well-being. Wealth may be targeted toward long-term goals such as retirement, but it can also help families cope with income interruptions or handle unexpected expenditures.

Income is widely available from survey and administrative sources. Wealth, on the other hand, is much harder to measure and, as such, has been the focus of only infrequent surveys (see *Data source and definitions*).

Wealth has many components, some of which are measured more easily than others. The main division is between marketable components, which can be sold or transferred, and non-marketable assets, which have value only for those who hold them. Some marketable assets such as savings accounts, tax-deferred savings plans, stocks, bonds and mutual funds are readily measured. Others such as real estate, durable goods or business equity are seldom traded, and so their value must be estimated. The principal non-marketable asset is an employer pension plan. Employees or their survivors may draw benefits according to the plan, but its present value is not a tradable commodity and is complicated to estimate. After all assets are valued and summed, debt must be subtracted to arrive at a final measure of wealth.

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This article explores the levels and components of wealth inequality in Canada. Many studies have detailed the effects of regional diversity on the distribution of income (Alasia 2003; Finnie 1998; Melvin 1987; Wilkinson et al. 2003; Beach 1996), so the main focus here is provincial variation in the distribution of wealth. Although wealth inequality is undoubtedly related to differing income patterns across the country, it also reflects patterns in the components of wealth: high residential property values in British Columbia, high rates of farm assets on the Prairies, greater pension assets in Ontario, and so on. As such, a multilevel decomposition technique is used to untangle the different effects. This technique highlights some aspects of wealth distribution that are relatively consistent across the country and others that are more specific to certain provinces and family characteristics.

Two in 10 families have virtually no wealth

Since income and wealth are strongly associated, one would expect families with higher incomes to have more wealth.[1] Indeed, several similarities in the provincial distribution of family wealth by pre-tax income deciles are apparent (Table 1).[2] First, families in the lowest decile had negative wealth. These families had more debts than assets, as in the case of younger or older families with small incomes, or families with businesses with negative net income.[3] Families in the lowest two deciles held virtually no wealth.

Second, as expected, the share of wealth held by families rose as they moved up the income ladder. Those in the third and fourth deciles together held between 2% and 4% of all wealth; those in the top decile held the most, ranging from 42% in Nova Scotia to 52% in Alberta.

In seven provinces, families in the top income decile had mean wealth of more than one million dollars (the highest being $1.5 million in British Columbia). The gap in mean wealth between the top and bottom deciles was largest in British Columbia ($1.6 million), about 2.5 times that in Newfoundland and Labrador.

Table 1: Family wealth by income decile

	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
						%					
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Lowest	-0.3	-1.2	-0.3	-0.2	-0.4	-0.3	-0.2	-0.2	-0.3	-0.2	-0.2
Second	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.1
Third	0.8	1.5	0.8	1.3	1.1	0.7	0.9	1.1	1.2	0.9	0.5
Fourth	2.0	2.9	1.9	2.8	2.4	1.8	2.1	2.4	2.5	2.1	1.5
Fifth	3.4	4.3	3.5	4.5	3.9	3.2	3.8	4.0	4.4	3.6	3.1
Sixth	5.5	6.0	5.3	6.6	5.6	5.1	5.8	6.3	6.5	5.4	5.5
Seventh	8.1	8.5	7.9	9.3	7.9	7.9	8.6	8.9	9.0	7.6	8.2
Eighth	12.1	11.6	12.5	13.7	11.8	11.5	12.9	12.4	13.3	10.8	12.2
Ninth	18.8	17.7	19.9	19.7	18.7	18.3	19.1	18.6	20.1	17.3	18.3
Highest	49.4	48.5	48.3	42.0	48.8	51.6	46.8	46.2	43.0	52.3	50.8
Mean wealth						$					
Lowest decile	-6,700	-15,100	-5,900	-4,300	-6,900	-9,300	-6,200	-5,500	-6,200	-4,300	-7,600
Highest decile	1,320,900	611,500	1,029,300	845,900	846,000	1,184,800	1,386,700	1,084,100	1,067,000	1,422,800	1,542,600
Mean income											
Lowest decile	6,200	6,900	8,000	6,300	6,900	5,700	7,600	7,600	5,000	6,200	4,000
Highest decile	151,200	115,000	121,500	119,000	106,200	137,000	163,500	134,100	126,300	172,700	146,300
						%					
Families	100.0	1.6	0.4	3.1	2.5	25.5	36.7	3.7	3.3	9.5	13.8
Total wealth	100.0	0.8	0.4	2.3	1.8	21.0	40.6	3.1	3.2	10.3	16.5
Total income	100.0	1.3	0.4	2.6	2.0	23.0	40.9	3.4	2.9	10.2	13.5
						$					
Mean wealth	249,300	125,400	214,400	182,200	179,400	205,200	276,200	212,100	242,700	272,100	298,100
Median wealth	109,200	65,300	90,500	100,300	84,900	79,500	132,900	106,500	131,400	122,000	127,200
Mean income	49,800	39,600	42,000	41,400	40,500	44,800	55,400	46,100	43,200	53,700	48,600
Median income	39,600	32,300	33,000	34,000	32,300	35,300	45,100	37,300	34,400	43,500	40,100
Theil's T (total)											
Wealth	0.865	0.748	0.755	0.634	0.767	0.918	0.761	0.826	0.647	0.990	0.984
Pre-tax income	0.314	0.266	0.269	0.272	0.240	0.334	0.301	0.283	0.277	0.325	0.308

Source: Survey of Financial Security, 1999

On the other hand, the gap in mean income was much smaller, ranging from $166,000 in Alberta to $108,000 in Newfoundland and Labrador. Thus income is more equally distributed than wealth.

Theil's T statistic is a measure of inequality and can be used to decompose total inequality into 'between group' (for example, provinces) and 'within group.' It shows that income inequality was between 32% and 42% of wealth inequality.[4] Wealth was much more unequally distributed among families in Alberta, British Columbia, and Quebec than in Ontario. Nova Scotia had the most equal distribution.[5]

Interprovincial differences account for little of total wealth inequality

Of total wealth inequality in Canada, 98% was attributable to inequality within provinces. The factors affecting family wealth inequality within provinces include homeownership status, business equity, financial asset components, employer pension plan savings, and mortgage and consumer debt.

Ontario, with 37% of all families and 41% of total family wealth, accounted for 41% of total wealth inequality, followed by British Columbia (14% of families and 16% of wealth) at 22%. Shares for Quebec and Alberta were 17% and 13% respectively. These four provinces, with 85% of all families and 88% of total family wealth, accounted for 93% of overall wealth inequality.

Wealth inequality by family characteristics

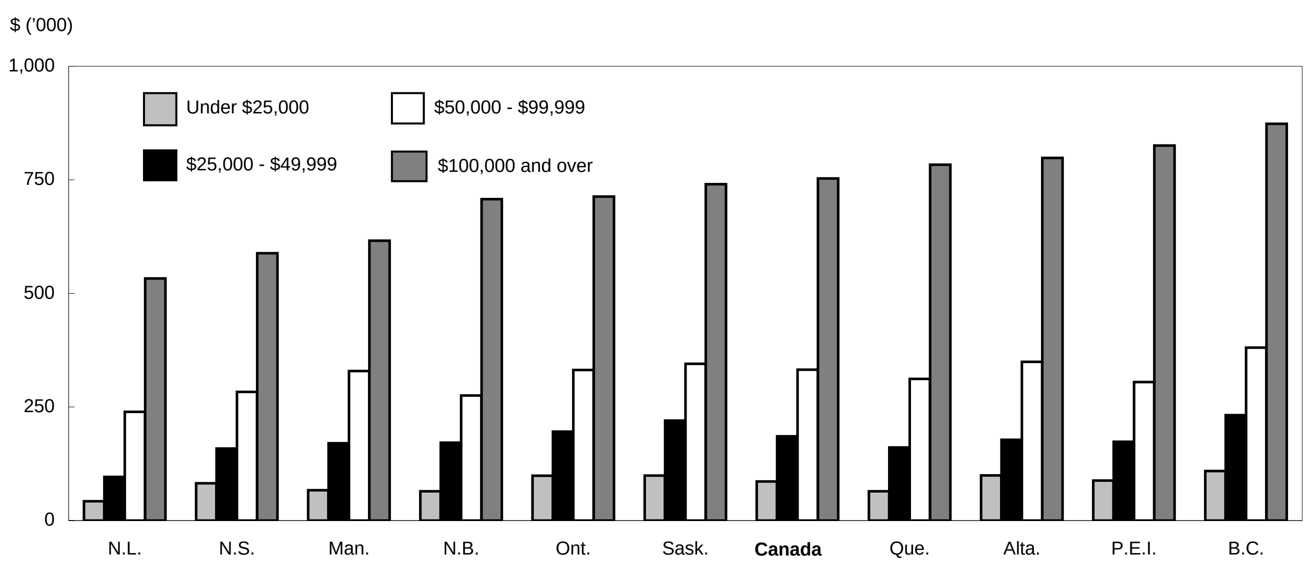
Besides financial assets and business equity, differences in income and homeownership contribute to family wealth inequality. As mentioned earlier, income and wealth are strongly associated, so any variation in family income is likely to result in a variation in wealth, both between and within income groups (Table 1).[6]

For instance, the gap in mean wealth between families with incomes under $25,000 and those with $100,000 or more was $491,000 in Newfoundland and Labrador (lowest mean wealth) compared with $764,000 in British Columbia (highest). On the other hand, the interprovincial range of mean wealth within income groups was $67,000 for families with incomes under $25,000 and $340,000 for those with incomes of $100,000 or more (Chart).

These within-income-group ranges show that family wealth across provinces is affected by other factors in addition to income, such as homeownership status, family type, and life-cycle stage. Within provinces, for example, from 20% to 34% of wealth inequality was explained by wealth differences between income groups, and from 16% to 38% by differences between homeownership groups (renter, owner with a mortgage, owner without a mortgage) (Table 2). Income and homeownership explained relatively more of the inequality than other characteristics such as business ownership, age of the major income recipient (used as proxy for life-cycle stage), or coverage in an employer pension plan.

However, given the high correlations between family income, homeownership, age of major income recipient, business ownership, and coverage under an employer pension plan, their individual explanatory powers cannot be added to derive the total inequality coefficient. To overcome this multicollinearity, it is

Chart: Regardless of income, families in British Columbia had the highest mean wealth.



Source: Survey of Financial Security, 1999 necessary to recalculate the explanatory powers of between and within groups by classifying data by such characteristics taken together. The resulting between group's overall explanatory power is then split by each of the characteristics considered. To maintain statistical reliability, only a limited number of characteristics can be used at a time. The following discussion is based on income, homeownership and business ownership.[7]

Homeownership accounts for much of wealth inequality

More than half (53%) of wealth inequality in Ontario was explained by between-group inequality and the rest (47%) by within-group inequality (Table 3). The overall explanatory power of 53% could be decomposed into 15% for income, 28% for homeownership, 4% for business ownership, and 6% for their interaction. This decomposition shows that variation in wealth by homeownership explained more of the wealth inequality in Ontario than did variation by income group. A similar situation prevailed in Prince Edward Island, Nova Scotia, Manitoba, Saskatchewan, and British Columbia.

Variation by homeownership can be attributed not only to rates of ownership but also to wealth differences between renters, owners without a mortgage, and owners with a mortgage. The wealth of homeowners may, in turn, be influenced by local real estate values. In Newfoundland and Labrador, New Brunswick, Quebec, and Alberta, differences in wealth by income group were more important than homeownership. Business ownership remained in third place—with an explanatory power relatively higher for families in Alberta and Prince Edward Island.

With the ranking of family characteristics affecting wealth inequality across provinces established, one question remains unanswered: How is total wealth inequality distributed by levels of these characteristics? For example, in Quebec, income explained more than homeownership. Did the wealth of families in different income strata contribute equally to this inequality? In fact, the variation in wealth among families with incomes under $25,000 accounted for less than 1% of wealth inequality in Quebec, compared with 44% for those with incomes between $50,000 and $99,999 and 45% for those with incomes of $100,000 or more

Table 2: Wealth inequality by selected family characteristics*

	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
Total inequality (Theil's T)	**0.865**	**0.748**	**0.755**	**0.634**	**0.767**	**0.918**	**0.761**	**0.826**	**0.647**	**0.990**	**0.984**
						%					
Pre-tax income											
Between groups	23.4	34.3	27.7	23.8	23.7	29.2	21.2	26.4	23.5	20.4	19.8
Within groups	76.6	65.7	72.3	76.2	76.3	70.8	78.8	73.6	76.5	79.6	80.2
Homeownership											
Between groups	29.0	15.9	35.2	17.1	21.8	27.4	37.5	30.0	29.8	19.6	30.5
Within groups	71.0	84.1	64.8	82.9	78.2	72.6	62.5	70.0	70.2	80.4	69.5
Age of major income recipient											
Between groups	10.5	6.5	8.3	11.7	10.7	11.7	13.0	6.5	8.4	5.0	11.9
Within groups	89.5	93.5	91.7	88.3	89.3	88.3	87.0	93.5	91.6	95.0	88.1
Employer pension plan											
Between groups	4.2	11.4	5.0	10.2	10.1	4.5	6.1	2.3	2.3	3.6	1.1
Within groups	95.8	88.6	95.0	89.8	89.9	95.5	93.9	97.7	97.7	96.4	98.9
Business ownership											
Between groups	10.5	6.5	16.1	7.8	18.7	13.8	6.6	9.6	14.1	16.8	9.8
Within groups	89.5	93.5	83.9	92.2	81.3	86.2	93.4	90.4	85.9	83.2	90.2

Source: Survey of Financial Security, 1999
**Excludes families with negative or zero wealth.*

Table 3: Decomposition of wealth inequality*

	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
Total inequality (Theil's T)	**0.865**	**0.748**	**0.755**	**0.634**	**0.767**	**0.918**	**0.761**	**0.826**	**0.647**	**0.990**	**0.984**
						%					
Between groups	**49.0**	**49.2**	**65.9**	**41.8**	**51.0**	**54.7**	**52.8**	**53.4**	**54.2**	**45.6**	**51.5**
Income	18.0	46.5	17.8	10.4	20.7	21.3	14.9	16.8	14.5	16.5	11.7
Homeownership	20.5	11.2	27.9	13.9	18.5	17.2	28.1	21.5	22.9	13.7	24.5
Business ownership	5.1	3.7	10.4	4.2	8.9	8.3	3.5	5.5	7.9	11.5	7.2
Interaction term	5.4	-12.2	9.8	13.3	2.9	7.9	6.3	9.6	8.9	3.9	8.1
Within groups	**51.0**	**50.8**	**34.1**	**58.2**	**49.0**	**45.3**	**47.2**	**46.6**	**45.8**	**54.4**	**48.5**

Source: Survey of Financial Security, 1999
* *Excludes families with negative or zero wealth.*

Data source and definitions

The analysis is based on the Survey of Financial Security (SFS), conducted between May and July 1999. The sample consisted of 23,000 dwellings from the 10 provinces—21,000 from a regular area sample and 2,000 from 'high-income' geographic areas. A high-income household was one with total income of at least $200,000 or investment income of at least $50,000. Excluded were persons living on Indian reserves, members of the armed forces, and those living in institutions such as prisons, hospitals, and homes for seniors. The SFS interview questionnaire (Catalogue no. 13F0026MIE-01001) is available free on the Statistics Canada Web site at www.statcan.ca/cgi-bin/downpub/research.cgi. For more details about the survey, see *The assets and debts of Canadians: An overview of the results of the Survey of Financial Security* (Statistics Canada Catalogue no. 13-595-XIE).

The survey collected information on the socio-demographic and labour force characteristics of persons aged 15 years and over, as well as the assets and debts of their families at the time of the survey. For 85% of survey respondents, income for 1998 was compiled from authorized linkage to tax records; income information for the remaining 15% was collected in person. Collection was by personal interview, although respondents could also complete the questionnaire themselves. Financial data were sought from the family member most knowledgeable about the family's finances. Proxy response was accepted. The overall response rate was 76%.

With the exception of savings in employer pension plans, missing data on components of assets and debts used to compile wealth estimates were imputed mostly by a hot deck procedure. Accrued savings in pension plans, on the other hand, were estimated through a termination valuation approach from information collected on years in the labour force, coverage under pension plan(s), contributions made, and benefits received. A detailed description of the methodology used to estimate such savings can be found in *Survey of Financial Security: Methodology for estimating the value of employer pension plan benefits* (Statistics Canada catalogue no. 13F0026MIE-01003. Empirical data included in this paper are based on a sample of 15,933 families, including 1,143 from the high-income sample.

Family: Refers to economic families and unattached individuals. An economic family is a group of persons sharing a common dwelling and related by blood, marriage (including common law) or adoption. An unattached individual is a person living alone or with unrelated persons.

Major income recipient: The person in the family with the highest income before tax. If two persons had exactly the same income, the older was treated as the major income recipient.

Tenure: Refers to the homeownership status of a family at the time of the survey. A family may be living in a rented dwelling or in an owned dwelling, with or without a mortgage.

Pre-tax family income: Sum of incomes of family members aged 15 or over received from all sources during the calendar year 1998. Sources include wages and salaries, net income from self-employment, investment income, government transfers, retirement pension income, and alimony. Excluded are income in kind, tax refunds, and inheritances.

Wealth: Total assets less total debt. It is based on marketable assets that are in direct control of families. It does not include the accrued value of savings held in employer pension plans or future claims on publicly funded, income-security programs. Nor does it include any potential returns on human capital (employment income or ability to generate investment income).

(Table 4). The corresponding shares in Alberta were 1%, 49% and 46%. More than half of wealth inequality in Ontario and British Columbia was attributable to families with incomes of $100,000 or more.

The relative contribution to total wealth inequality of families in rented dwellings was almost insignificant provincially, whereas the largest contribution was made by families living in mortgage-free homes. Similarly, families with a major income recipient aged 45 to 64 held the largest share of inequality, varying between 72% and 35% for eight provinces. The two provinces showing a different pattern were Newfoundland and Labrador, where elderly families had the highest contribution (50%), and Alberta, where younger families (major income recipient under 45) accounted for 45%.

Shares of total inequality by business ownership showed quite a contrast. In Alberta, where families had a higher rate of business ownership as well as a higher proportion of wealth in terms of business equity, the variability in holdings of families with a business accounted for 90% of provincial wealth inequality—compared with 57% in Ontario.

On the other hand, the variation in wealth of families with an employer pension plan accounted for 72% of wealth inequality in Newfoundland and Labrador compared with just 31% in British Columbia. Among families in most of the eastern provinces, coverage under such plans played an important role in accounting for wealth inequality, whereas for families in the western provinces, business ownership drove inequality.

Conclusion

Provincial economies differ considerably. These differences are in turn primarily responsible for the variation in family income across the country. However,

Table 4: Share of provincial wealth inequality by selected family characteristics*

	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
					Share (%)						
Total wealth inequality	**100.0**	**0.1**	**0.3**	**0.8**	**0.9**	**17.4**	**40.6**	**2.3**	**2.3**	**12.9**	**22.3**
					Distribution (%)						
Pre-tax income											
Under $25,000	1.8	-5.8	3.1	6.5	-2.6	0.6	1.6	-3.3	0.7	1.3	4.8
$25,000 - $49,999	8.3	5.0	17.2	11.5	32.7	10.3	7.0	8.1	17.5	3.7	8.4
$50,000 - $99,999	39.1	59.1	24.8	45.5	38.9	44.2	34.0	56.6	42.6	49.1	33.1
$100,000 and over	50.9	41.8	54.9	36.5	31.1	44.9	57.4	38.6	39.2	45.9	53.7
Homeownership status											
Renter	-0.5	-3.5	-4.8	8.6	0.1	5.7	-5.2	-2.1	-5.8	1.3	0.5
Owner											
Without mortgage	78.8	81.1	103.3	74.1	87.2	76.2	84.8	91.7	91.4	53.9	84.0
With mortgage	21.7	22.5	1.4	17.3	12.8	18.0	20.4	10.4	14.4	44.8	15.5
Age of major income recipient											
Under 45	16.0	7.4	9.4	1.2	16.5	12.8	7.1	31.4	17.9	44.9	16.9
45 to 64	60.6	42.8	64.7	67.2	68.0	72.0	63.5	44.8	56.8	35.0	61.8
65 and over	23.4	49.8	25.9	31.6	15.4	15.1	29.4	23.8	25.3	20.1	21.3
Employer pension plan											
No	43.9	28.5	50.8	28.7	30.9	47.3	30.9	52.0	44.8	38.6	69.2
Yes	56.1	71.6	49.2	71.3	69.1	52.7	69.1	48.0	55.2	61.4	30.8
Business ownership											
No	33.2	62.1	26.0	55.7	33.5	32.9	42.9	35.0	25.8	10.3	27.0
Yes	66.8	37.9	74.0	44.4	66.5	67.1	57.1	65.0	74.2	89.7	73.0

Source: Survey of Financial Security, 1999
** Excludes families with negative or zero wealth.*

the province with the highest mean income is not necessarily the province with the highest mean wealth. Other factors besides income influence family wealth. These include homeownership status, home values, financial assets, business ownership, other real estate, vehicles, coverage under employer pension plans, and possession of other durable goods.

Provincially, wealth was more unequally distributed than income and concentrated among families in the top income decile. Also, it was more unequally distributed in three provinces—Quebec, Alberta, and British Columbia.

Four provinces (Quebec, Ontario, Alberta and British Columbia) accounted for 93% of overall wealth inequality in Canada. A multilevel decomposition of wealth inequality by family characteristics such as income, homeownership, and business ownership showed that in six provinces, homeownership ranked higher than income in explaining inequality, whereas income led in the other four. Business ownership ranked third in all provinces.

The prevalence of income and wealth inequality is not new and occurs in almost all countries. However, the approaches to redistribution vary. For instance, Canada has a progressive income tax system, which allows the use of taxes and government transfers to reduce income inequality. Intergenerational wealth transfers, however, are generally taxed as income for the recipient. Canada has no direct wealth tax. However, income earned on financial assets is taxed, and municipalities levy property taxes on homes and other real estate.

On the other hand, the Canadian income tax system encourages personal savings and investment in a variety of tax-deferred savings plans.[8] The objective of such incentives is to encourage families to save more for long-term goals such as retirement or children's education. However, families with higher incomes are more likely to use such tax-deferred plans since they are able to put money aside.[9] Although such incentives may increase wealth inequality, investments in these tax-deferred plans must be converted into income at a later date and would be subject to taxation at the recipient's highest marginal rate.

Finally, some results indicate that family characteristics may be the strongest generator of wealth inequality. Renters and low-income earners tend to have compressed wealth distributions, as well as low average wealth. Homeowners and high-income earners, on the other hand, have not only higher average levels of wealth, but also greater variation in wealth. Excluding home equity, homeowners still have more than six times the mean wealth of renters.

Perspectives

Notes

1 Wealth usually rises with income. However, since wealth is accumulated over the life cycle, families with lower incomes during retirement may have much greater wealth than their younger counterparts with relatively higher incomes.

2 Tax exemptions based on a taxpayer's demographic situation (marital status, age, number of dependants), business status and investments made may affect the post-tax incomes of families across Canada. Pre-tax incomes, on the other hand, reflect the family's total income in a given year and are used for ranking families by decile groups.

3 In Newfoundland and Labrador, where mean income was lowest, 9% of families had negative or zero wealth, compared with 6% in Ontario and Alberta—provinces with relatively higher levels of incomes (Table 1).

4 Details can be found in Theil (1967), chapter 4; Allison (1978), and Bourguignon (1979). For its illustrative use, see Schwarze (1996), Cardoso (1997), Zyblock and Tyrrell (1997), and Frick and Grabka (2003). Also see Cowell (1985) for multilevel decomposition of Theil's Index.

5 In this paper, wealth inequality was studied using only Theil's coefficient because of its additive and decompositional properties. Other measures of inequality, including the Gini coefficient, log of variance of wealth, and coefficient of skewness were also used, but for brevity are not included here. A summary table containing results of these measures is available from the author.

6 Some of this high-income, high-wealth situation may be embedded in the diversity of provincial economies, resulting in varying incomes for their residents. Compared with Ontario (100), the index of mean wealth varied between 46 (Newfoundland and Labrador) and 108 (British Columbia). However, when mean wealth of families across provinces was recalculated on the assumption that Ontario's distribution of income prevailed in all other provinces, the gap in indices of mean wealth fell to 53 points. This shows that even if the distribution of income were the same across provinces, mean wealth of families in different provinces would still vary.

7 Even though the methodology allows a multilevel decomposition, it is still necessary to restrict the number of characteristics that can be used at a time in order to maintain the statistical reliability of conclusions. The use of five characteristics would have meant classifying families in each province into 144 cells—income (4), homeownership

(3), age of major income recipient (3), business ownership (2), and coverage under a pension plan (2). This would have meant splitting the sample of 15,933 families into 1,440 (144x10) cells. Although only the results of income•homeownership•business ownership are shown here, outcomes of other combinations can be made available upon request.

8 These include registered retirement savings plans, registered retirement income funds, registered homeownership savings plans, and registered education savings plans. Also, reduced tax rates apply for investment income and dividends incomes and capital gains (after exhausting the lifetime exemption of $100,000 and $500,000 for qualified small business corporations and qualified farm property).

9 For example, of all taxfilers aged 25 to 64, only 4% of those with income under $10,000 contributed to registered retirement savings plans in 1999, compared with 74% of those with income between $60,000 and $79,999, and 78% with income of $80,000 and more. The Canadian Education Savings Grant program has recently introduced greater savings incentives for low- and middle-income contributors in the form of higher contribution match rates.

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